INSPECTION POLICIES & PROCEDURES

Class A Certification Requirements

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Inspector's Role and Responsibilities

- Identify safety related deficiencies.
- Take appropriate action.
- Perform a thorough inspection.
- Accurately determine the condition of the bridge components.
- Rate elements in accordance with established criteria (BIM Manuals).
- Rating consistency between inspectors
- Identify deficiencies and recommend appropriate and timely maintenance.

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Inspector's Role and Responsibilities

- 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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Cl. A Inspector Skills

- Able to recognize safety related deficiencies.
- Be decisive in taking appropriate action.
- Accurately determine the condition of bridge components.
- Thorough and complete understanding of the rating system.
- Know the appropriate ratings for the full range of conditions encountered.
- Able to recognize maintenance requirements and make appropriate maintenance recommendations.
- Good written communication skills to produce a high quality inspection report.

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Class of Inspectors

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, signs, and watercourse training structures (ALL structure types).
- Class B certification is a pre-requisite for Class A certification

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

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Class A Certification Requirements

- Civil Engineering Degree OR Civil Engineering Technologist Diploma
- Or equivalent combination of education and experience that is acceptable to Alberta Transportation.

Certification process is **4** Stages:

Stage 1:
- Current Class B Certification and completed minimum of 75 inspections.
- Successful completion of Alberta Transportation Class A BIM Training Course (5-day course – 70% average score required).

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Class A Certification Requirements

Stage 2 – Mentorship Program:

- Successful completion of mentorship program.
- Mentor is Class A with minimum 6 years of certification and approved by AT.
- Complete a **minimum** of 45 training sites under guidance of mentor.
- Begin program by inspecting 10 different structure types together with mentor (these 10 can count toward total if complete inspections are done).
- Mentor reviews 1st 10 reports and recommends remaining 35 training sites.
- Minimum 60% of the 45 sites must have a maximum structural condition rating of 45% and Superstructure must be accessible.
- Variety of structure types (note that sign bridges do not count in training or re-certification.

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Class A Certification Requirements

Stage 2 – Mentorship Program – continued:
- Letter of Recommendation from mentor.
- Provide pdf copies of training inspections with mentor comments and other communication and feedback during mentoring program.
- Summary spreadsheet.

Stage 3:
- Certification exam (minimum 75% score required)

Stage 4:
- Test inspections at 3 sites – completed in 1 day and using blank forms.
- Sites previously benchmarked by AT or rep and reviewed for acceptability by AT

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Class A Certification Requirements

Stage 4 - continued:

- Stage 3 and 4 can be done in reverse order
- If failure of any stage of process, then:
  - one chance to redo that stage.
  - Two failures of any stage requires process to be re-started at Stage 1.
- Certification after all 4 stages have been successfully completed and with approval from Director of Bridge Engineering.
- Certification is valid until next certification renewal date – normally 3 years

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Class A Re-Certification Process

Active involvement in BIM and acceptable performance

- In order to be re-certified, inspectors must meet one of the following criteria:
  1. Performed minimum average rate of 2 BIM inspections per month during previous 3-year period (50% must be major bridges & exclude signs) - or –
  2. Performed a min average rate of 1 BIM inspection per month during previous 3-year period (50% must be major bridges & exclude signs) and have been active in management, design, or construction of bridges - or
  3. Acted as reviewer for min average rate of 2.5 inspections per month during previous 3 years (excluding sign bridges) – or
  4. Acted as AT reviewer for min average rate of 5 inspections per month during previous 3 years (excluding sign bridges) and have been active in management, design, or construction of bridges .

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Class A Re-Certification Process

- Inspector status is reviewed by AT every 3 years.
- Decision on re-certification is made by AT with assistance from Regional bridge staff and possibly Review & Data Entry consultant 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 inspector's status and make recommendation to Director of Bridge Eng.
- Panel may develop a plan for inspector – typically writing re-certification exam and 5 test sites.
- 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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Levels of Inspection

- All levels of inspections 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) 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
- Requires completion of the Level 1 BIM inspection report
- Use of basic tools and equipment

Level 1.5 Inspection

- Level 1 inspection but within arms reach of all bridge elements using manlift, snooper or other specialized access equipment and traffic control.

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Levels of Inspection

Level 2 Inspections

- In-depth inspection gathering quantitative information - all structure types.
- Completion of the appropriate Level 2 inspection report (e.g. SBM, TCR, CDK, VCL, UTS) and Level 1 report.
- Use of specialized knowledge, equipment or procedures
- Generally, requires traffic control (exceptions might be TCR, SBM)
- Performed by certified CI. A inspector (exception is SBM).

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Inspection Frequency

Level 1 inspections at minimum frequency required by policy 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 provide the benefit of inspecting during different seasonal conditions.

Level 1.5 and Level 2 inspections on a prescribed cycle or an "as required" basis.

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Inspection Frequency

- In special circumstances (e.g., park roads with 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 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.

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Training of Inspectors

- Technical Standards Branch manages the delivery of the BIM Class A Bridge Inspection Course
- Regions responsible for field training of Department Staff
- Non-Department staff are responsible to arrange for field training/mentoring after completing 5-day BIM Class A Bridge Inspection Course by engaging appropriate mentor (Stage 2 Mentorship program described earlier)

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Responsibility for Inspection:
Technical Standards 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 of AT managed inspection reports
- Accept data entry of LRA inspection reports
- Initiate appropriate action where deficiencies are identified.
- Provide technical support to LRA's 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. Ensure inspections are in compliance with BIM.
- Control and manage all bridge structures in their jurisdictions.
- Monitor all bridge structures as required.
- Report hazardous or structural element concerns (rated 2 or less), or changes to load, width, or height weight to BM and BPS.
- Perform maintenance, rehabilitation, replacement.
- Advise appropriate authority (e.g. TRAVIS-MJ) of load restrictions/changes
- 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 that define 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 and data 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 condition.
  - supplement with a photo of condition.
- Condition ratings of 3 or less the inspector must
  - make appropriate recommendation for maintenance or monitoring .
  - supplement with photos - also sketches, measurements if needed.
  - consider decreasing the next inspection date.
- Hazardous conditions or structural load carrying elements rated 2 or less must be reported within 48 hours to the Regional Bridge Manager and Bridge Preservation Specialist if structure managed by AT. If structure managed by LRA, report to LRA only.
- Rating of 1 on a critical element or danger of imminent failure, take immediate steps to close or restrict traffic and phone call notification to LRA or BM & BPS within 12 hours.
- 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 are 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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