

# INSPECTION POLICIES AND, 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 the bridge elements in accordance with established criteria (BIM Manual).
- 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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## CI. 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 and culverts (all structure types).
- Class B certification is a pre-requisite for Class A

### Class B

- Qualified to perform a Level 1 inspection on standard bridges and culverts only.



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## Class A Certification Requirements

- Civil Engineering Degree
- or Civil Engineering Technical 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 min. 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 and recommends 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



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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 (min. 75% score required)

### Stage 4:

- Test inspections at 3 sites – completed in 1 day and using blank forms.
- Sites previously benchmarked by AT representative 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) - or –
  - 2) Performed a min average rate of 1 BIM inspection per month during previous 3 year period (50% must be major bridges) 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 – or
  - 4) Acted as AT reviewer for min average rate of 5 inspections per month during previous 3 years 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 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:

<http://www.transportation.alberta.ca/4827.htm>



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## Levels of Inspection

- 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 or snooper



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## Levels of Inspection

### Level 2 Inspection

- In-depth inspection.
  - Completion of the appropriate Level 2 inspection report.
  - Use of specialized knowledge, equipment or procedures
- All levels of inspections must be performed by a certified inspector.
  - Level 1 inspections must be done at the minimum frequency specified by policy.
  - Level 1.5 and Level 2 inspections are performed on a prescribed cycle or an as required basis.



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## Inspection Frequency

A Level 1 inspection must be 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 are intended to provide the benefit of inspecting during different seasonal conditions.



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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.
- Refer to BIM Advisory Bulletin #2 – January 8, 2015 for more information:

[http://www.transportation.alberta.ca/Content/docType30/Production/BIM\\_Advisory\\_Bulletin\\_1-2012.pdf](http://www.transportation.alberta.ca/Content/docType30/Production/BIM_Advisory_Bulletin_1-2012.pdf)



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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.



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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 all bridge structures in their jurisdictions.
- Monitor all bridge structures as required.
- Report hazardous or structural element concerns (rated 2 or less) to Bridge Manager.
- Perform maintenance.



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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.
- 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 immediately to the Bridge Manager (and LRA if on local road).
- 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 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



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# Questions??



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