Bridge Inspection and Maintenance System
Quality Assurance Process

BACKGROUND

Recognizing that the monitoring of bridge inspection quality is an important element of managing a bridge inspection program, the department developed a quality assurance process in 1999. The intent was to monitor and adjust the inspection processes to assure optimum levels of quality. Stated goals included inspector improvement and training and process modifications.

This quality assurance process involves re-inspecting recently inspected bridge sites with a totally independent inspection team and then subsequently comparing the two inspections. It was recognized that a consistent approach with defined practices and resources having sufficient expertise would be required. Initially, it was assumed that a 2 man team would be required and a 5% sampling would be sufficient. The recommendation at that time was for a combined consultant/in-house team to undertake these quality assurance inspections, due to in-house resource concerns. It appears that when implemented, these inspections were done using in-house staff only, but for a much smaller sample size (~10 – 15 sites per year, < 1%).

A recent review has noted significant discrepancies in some recent quality assurance checks, and has suggested that site selection criteria should include known consultant performance issues. It was also suggested that multiple contractors should be reviewed each year.

GOALS

The goals of these quality assurance inspection efforts are:

- Provide a measure of the quality of bridge inspections being provided in a cost effective manner within resources available
- Identify elements of the system that are showing inconsistencies and inaccuracies, so that system modifications and training initiatives can be developed to address them
- Identify issues with specific inspectors that require correction
- Provide a mechanism for departmental staff to maintain their certification status

PROCESS

Starting in 2013, the annual quality assurance process will be the responsibility of Regional Services Division. The process requirements are as follows:

- Site Selection:
    - Each region should inspect ~ 10 provincial highway sites per year.
    - A range of structure types should be covered – culverts, standard and major bridges (dependent on availability of Class A inspector).
    - If multiple consultants are active in a region, at least one inspection from each firm should be included.

  - Focus on structures that are likely to have elements in deteriorated condition.
  - Consider structures that were inspected in very short time frames.
  - Consider structures inspected by inspectors with recent performance issues
- Inspectors:
  - 2 man teams, with one taking responsibility for the final ratings entered. The use of a 2nd person will enhance safety and accuracy of ratings, and provide an opportunity for training.
  - Use of departmental staff only. This will avoid perception of conflict of interest and maximize the opportunity for Department staff to retain certification status.
  - At least one inspector must have Class A certification for major bridges.
  - Use of staff from other regions and TSB may be considered, as necessary, to provide training and meet resource requirements.
- Results:
  - Results of these inspections will be reviewed by a Class A inspector, entered into the system, and approved by regional staff, in the same manner as consultant inspections. This will ensure that any errors or omissions found will be corrected in the system.
  - The results for each inspection will be compared to the original inspection with each major component of the inspection rated from 1 (not acceptable) to 4 (very good).
  - The format for documentation of this comparison is to follow the template used for the 2011 quality assurance review.
  - Any findings of poor consultant performance will be reported to the Regional Bridge Manager, who will undertake a corrective review with the affected consultant within 1 month of being notified of the results.
  - A summary of findings will be forwarded to the Director of Bridge Engineering in Technical Standards Branch to facilitate assessment of systematic issues that could result in changes to manuals and training programs and issuing of system bulletins.

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