County of Brant

Strategic Asset Management Policy -Structures

Scope: This addendum to the policy identifies the specifics in the application of the policy as it pertains to the structure assets with a span of greater than 3m. Content of this addendum should be read in conjunction with the Strategic Asset Management Policy.

Preparation of the structures components of the AMP shall consider, but not be limited to the following regulations;

Regulatory Compliance – The Municipality shall consider all applicable legislation in the development and update of its AMP, including but not limited to;

1. Ontario Regulation 588/17, Asset Management Planning for Municipal Infrastructure
2. The Conservation Authorities Act
3. The Environmental Assessment Act
4. The Environmental Protection Act
5. The Planning Act and related regulations
6. Maintenance Standards For Municipal Highways (Ontario Regulation 239/02)
7. Municipal Act 2001, Section 44 (1)
8. Ontario Regulations 104/97, 472/10 Standards for Bridges
9. Canadian Navigable Waters Act
10. Great Lakes Accord

Asset Verification and Condition Assessment Methodology: The condition of all bridges and culverts with a span of 3m or greater shall be evaluated following the Ministry of Transportation Ontario Structure Inspection Manual (OSIM) or Municipal Bridge Appraisal Data Entry System (MBADES or Municipal Bridge Appraisal Manual.)

Condition Assessment Cycle:

If annual reviews are selected, a full area (approximately 50% of the inventory) will be reviewed. In addition, those structures in the other area will have structures reviewed where improvements have been undertaken or in the opinion of staff the condition has deteriorated more quickly than anticipated.

Condition Assessment Cycle: There are two levels of condition assessment required for municipal structures; capital/structural condition and operational condition

Capital/ Structural condition shall be inspected on a 2 year cycle, in accordance with the following regulations:

- 104/97, 472/10 Standards for Bridges
- Regulation 103/97 Standard to determine Allowable Gross Weight for bridges and 160/02, 278/06 and 472/10 (Amending 104/97)

The reviews may occur in quadrants for the structures inventory annually or biannually however the entire system review interval shall be 2 years, as required by regulation.

Operational Condition shall be inspected in accordance with the following:

- Municipal Act 2001, Section 44 (1) The municipality that has jurisdiction over a highway or bridge shall keep it in a state of repair that is reasonable in the circumstances, including the character and location of the highway or bridge. 2001, c. 25, s. 44 (1).

Regulation 239/02 is a result of Section 44

Level of Service (LOS): The Level of Service Measures for the structures inventory shall be;

1. Bridge Condition Index (BCI) for each individual structure calculated as described in the footnote below.
2. Bridge Condition Index (BCI) for the structure inventory shall be the weighted average BCI. The average condition shall be the calculated weighted average by deck area or footprint (for culverts). The weighted average BCI shall be at or above the trigger value for a wearing surface rehabilitation (80)
3. Regulation 239/02 Compliance
4. Load Posting. Structure with a load posting that affects the delivery of emergency services to the point where service delivery is delayed beyond the acceptable standard shall be deemed to require immediate action.

Public Notification: Notification of road projects may occur through any of the following forums

1. Class Environment Assessment process
    a. Public meeting, or
    b. Hand delivered notice dependent on project type and Class EA requirements
2. Asset Management Plan public meeting

BCI Footnote

The Bridge Condition Index (BCI) was developed as a means of combining the inspection information into a single value. This number, the BCI value, gives an indication of the overall condition of the bridge.

The BCI is calculated using asset management principals based on the remaining economic worth of the bridge. It is based on the premise that a bridge starts at a new condition and deteriorates to a lower condition with time. It uses actual inspection data from the various bridge elements and as the elements deteriorate they have a lower economic value. Essentially, the BCI is a weighted average of all elements (since all elements are not of equal value to the bridge) and all Condition States (since each condition state represents a certain degree of loss of value of the element). The BCI begins at 100 when the bridge is in new condition and theoretically becomes 0 as all elements become fully in Poor condition. Practically, it is impossible for the BCI to fall to 0 since the entire bridge does not become poor before rehabilitation work is performed.

The BCI is based on the current value and replacement value of all elements in a bridge. The current value of the element is determined based on the depreciated value of the portions of the element that are in each of the four Condition States (Excellent, Good, Fair, Poor).