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Date: October 2, 2019

To: Mayor and Council

Author: Tim Del Greco, Manager of Municipal Services

RE: 2019 Biennial Bridge and Culvert Conditions Assessment

Report No.: MS 2019 – 43

AIM

To provide Council with the results of 2019 bridge and culvert inspections within the Town of Kingsville.

BACKGROUND

Biennial inspection of bridges and culverts with a span equal to or exceeding 3.0 meters in length is mandated by the Public Transportation and Highway Improvement Act. In 2019, AUE Structural Incorporated was procured to facilitate such inspection within the Town of Kingsville. Following inspection, a report was generated for each bridge and culvert indicating current condition ratings, recommendations for rehabilitation or replacement, and an estimation of costs for any recommended works. A Capital Management Plan was also created based on the field inspection reports.

DISCUSSION

Attached in Appendix A of this report is a copy of the 2019 Bridge and Culvert Capital Management Plan. The corresponding field inspection reports are not included in Appendix A as they are over 1400 pages in length. The field inspections can be accessed by visiting the Municipal Services Office.

With regards to the Capital Management Plan, there are several sections worth highlighting.

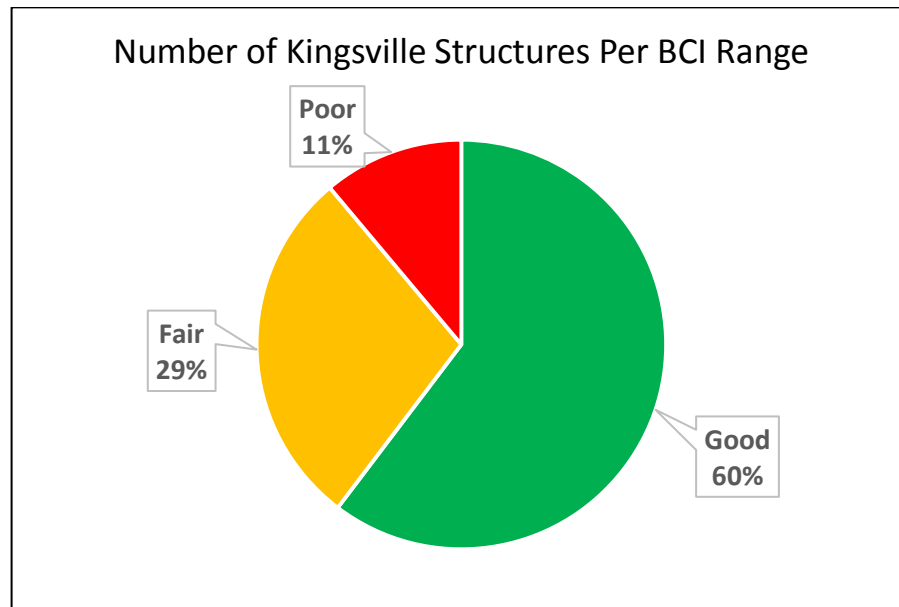
The Town has 48 bridges and 15 culverts (exceeding 3.0 meters in length) with an estimated replacement value of \$38,682,100.

Following recent inspection of each structure, a Bridge Condition Index (BCI) ranging from 0 to 100 was determined. This BCI value is a measure of the structure's physical condition and indicates the following:

BCI Range	Condition	Capital Works
70 – 100	Good	Not usually required within next 5 years
60 – 70	Fair	Usually scheduled within next 5 years
< 60	Poor	Usually scheduled within the next year

Kingsville's 63 structures currently fall into the following BCI ranges:

BCI Range	Condition	Number of Kingsville Structures Within this Range
70 – 100	Good	38
60 – 70	Fair	18
< 60	Poor	7



A capital works priority list was generated based on the BCI values and field inspections. This list details a plan of recommended capital repairs over the next ten years at a value of \$4,955,200. It is also recommended within this list that six structures be replaced prior to 2022. Funding to accommodate these six structure replacements will be requested to Council during annual capital budget deliberations.

Road 11 Culvert over the Irwin Drain (Culvert 500)

Culvert 500, with a BCI value of 21, is identified as the top priority for structure replacement. Corrosion, cracking and infiltration are the main deficiencies noted in the inspection report. As a result, replacement should be scheduled within a year of the inspection date. In order to expedite the process, a request for quotation was circulated to three local engineering firms to provide the necessary engineering, design, and contract administration. Dillon Consulting responded with the lowest cost proposal in the amount of \$55,000.

LINK TO STRATEGIC PLAN

To become a leader in sustainable infrastructure renewal and development.

FINANCIAL CONSIDERATIONS

In 2018, the Town established a Bridge and Culvert Lifecycle Reserve with an initial contribution of \$150,000. Each year this annual contribution will increase by \$150,000 as identified in the table below.

Year	Lifecycle Contribution Amount
2018	\$150,000
2019	\$300,000
2020	\$450,000
2021	\$600,000
2022	\$750,000
2023	\$900,000

Based on an average annual capital cost requirement of \$900,000, the Town should satisfy its Bridge and Culvert Lifecycle Contribution Requirements by 2023. Prior to 2023, Administration will utilize the Federal Gas Tax and/or other sources of revenue to offset any financial shortfalls.

Road 11 Culvert over the Irwin Drain (Culvert 500)

The cost of engineering per Dillon's proposal is \$55,000. An additional \$15,000 to \$25,000 may be required for miscellaneous field investigations (geotechnical, utilities, hydraulic assessments, etc.). Should Council approve of engineering, the cost of construction will be proposed in the 2020 Capital Budget. Recent construction costs of comparable projects range from \$300,000 to \$450,000. Dillon will provide a more accurate construction estimate near the end of the engineering phase.

CONSULTATIONS

Municipal Services
AUE Structural Incorporated
Dillon Consulting

RECOMMENDATION

That Council receive this information as it relates to the 2019 Biennial Bridge and Culvert Conditions Assessment in the Town of Kingsville;

And that Council authorize the use of \$80,000 from Account # 03-000-032-39180 (Reserve Fund – Gas Tax) for the procurement of engineering services from Dillon Consulting in order to facilitate subsequent replacement of the Road 11 Culvert over Irwin Drain.

Tim Del Greco

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