

Executive Summary

A Bridge and Culvert Needs Study was carried out in 2018 by Dillon Consulting Limited (Dillon) for 18 bridge and culvert structures with spans greater than 3.0 metres, including two pedestrian bridges, located in the Town of Tecumseh (the Town). This report summarizes the findings of the study and identifies the required improvements to structures which are currently deficient or are likely to become deficient within a ten year period from the time of this report.

A total of five of the 18 structures investigated were identified with significant deficiencies, and rehabilitation of the structures within five years is recommended. The structures are listed below and this information is also summarized in **Appendices B and C**.

- Structure No. 1004 – Sullivan Drain at Twelfth Concession Road
- Structure No. 1013 – Merrick Drain at Eighth Concession Road
- Structure No. 1014 – Colchester Townline Drain at Sixth Concession Road
- Structure No. 1028 – East Townline Drain at St. Thomas Street Bridge
- Structure No. 1029 – East Townline Drain at Little River Road Bridge.

The detailed design for rehabilitation of Structure No. 1004, 1013, and 1014 are currently underway with construction expected to be completed in 2019. The rehabilitation is considered a holding strategy to extend the service life of the existing structures by a minimum of ten years, until eventual replacement is possible, and does not include roadside safety improvements.

Temporary repairs on Structure No. 1028 and 1029, consisting of large steel plates placed on the culvert top slab above the soffit deterioration were carried out in July 2016. Road improvements on Manning Road scheduled for 2020 will replace Structure No. 1028 and 1029 with a storm water drain.

The estimated probable cost for rehabilitation of the above noted structures over the next five years (2019 to 2023) is estimated to be **\$677,010**. This value does not include the estimated cost for the monitoring program and demolition and replacement of Structure No. 1028 and 1029. An additional **\$235,000** is estimated for improvements to the remaining structure inventory to the end of this study period (to 2028). The total estimated capital needs allocation over the coming ten year period is **\$912,010**. These cost estimates exclude H.S.T. and routine maintenance items, and include contingency and engineering allowances. Potential cost savings may be realized by combining capital works for more than one structure under a single contract. The Town should also consider the needs of the road network when determining priorities for the structures. By combining road and structure works, there may be opportunities for additional cost savings and a reduction in public traffic disruptions. These estimated costs are in 2018 Canadian dollars without allowance for inflation, and are based on our limited visual observations during the study. The recommendations may not necessarily include every improvement which can, or may need to be made to each structure. The final estimated costs for

structure rehabilitation or replacement will vary on the results of detailed investigations, and/or changes to the proposed scope of work during detail design.

In this study, the Bridge Condition Index (BCI) was calculated for each structure and compared to the BCI of the previous studies (2003 to 2016). This comparison is provided in **Appendix D**. The average BCI value calculated for 2018 is **77.0**, which is slightly lower than the BCI value of **78.4** that was calculated for the 2016 study.