

6.0 Prioritization and Recommended Work

As an initial measure for prioritizing any required work, the structures have been ranked using their BCI values. A summary of the structures, in ascending order of BCI, along with their associated preliminary construction costs has been included in Appendix B. Two separate summary tables have been created to identify replacement and rehabilitation priority structures.

It should be noted that although the BCI is a good measure of the overall condition of the bridge, and therefore relative construction need, other factors are often considered when programming and prioritizing bridge work. Other factors that may be considered include:

- Traffic volume and number of trucks that regularly use the road;
- Load capacity restrictions at the site;
- Geometric restrictions (alignment or width);
- Pedestrian or cycling requirements;
- History of accidents or traffic conflicts;
- History of flooding or ice problems;
- Area growth and development; and
- In conjunction with already planned road improvements.

The prioritized capital works plan and associated construction costs can be used for estimating future capital budgets. The budgets and rehabilitation work plans have been provided for the Township's highest priority structures. There are currently 51 structures that have been identified as requiring work within the next five years. As such, the following 25 structures have been isolated and identified as requiring rehabilitation work or replacement within the next year. The structures have been identified for rehabilitation or replacement based on their condition during the latest completed inspection.

Table 5: Top Priority Replacement Structures

Structure No./Name	Road Name	Estimated Construction Cost
S075	Southgate Side Road 57	\$596,500.00
S097	Southgate Road 12	\$536,500.00
S098	Southgate Road 12	\$536,500.00
S031	Southgate Road 14	\$329,500.00
S033	Southgate Side Road 21	\$618,500.00
S036	Southgate Side Road 71	\$558,500.00
S125	Southgate Road 14	\$558,500.00
S128	Feairs Drive	\$498,500.00

Structure No./Name	Road Name	Estimated Construction Cost
S071	Southgate Road 22	\$716,500.00
S073	Southgate Road 22	\$656,500.00
S076	Southgate Side Road 57	\$716,500.00
Total		\$6,322,500.00

Table 6: Top Priority Rehabilitation Structures

Structure No./Name	Road Name	Estimated Construction Cost
S079	Southgate Road 14	\$406,000.00
S080	Southgate Road 14	\$458,000.00
S081	Southgate Road 14	\$385,000.00
S084	Southgate Side Road 41	\$378,000.00
S107	Southgate Side Road 47	\$760,000.00
S108	Southgate Side Road 49	\$434,000.00
S114	Southgate Road 4	\$582,000.00
S119	Southgate Side Road 61	\$837,500.00
S009	Southgate Road 12	\$280,500.00
S077	Southgate Road 14	\$279,000.00
S064	Southgate Road 26	\$282,000.00
S010	Southgate Sideroad 15	\$307,000.00
S016	Southgate Road 8	\$183,500.00
S032	Southgate Road 14	\$352,500.00
Total		\$5,925,000.00

Burnside recognizes that it is not feasible to complete all of the Capital Works requirements noted above in Table 5 and Table 6 within the recommended timeframe. The Township of Southgate may investigate deferring some of the rehabilitation work and plan for replacement based on structure type and location. On low volume roads with less than 200 vehicles per day, the Township could explore alternative replacement options, such as single-lane prefabricated structure options, removing the structure and closing the road, or replacing the structures under their own forces.

Burnside has also identified several sites in Table 7 below where the Township can investigate options to replace the existing structures under their own forces with single or multi-cell culverts based on the following criteria:

- Span less than 5 m+/-;

- Slow moving watercourse or equalization structure;
- Existing culvert may be located on a municipal drain;
- Greater than 0.6 m of fill above the existing structure;
- Warm water fishery / low quality watercourse; and
- Replacement recommended within the next 10 years.

Table 7: Additional Sites Identified for Potential Multi-Cell System Replacement

Structure No./Name	Road Name	Timeline for Rehabilitation / Replacement Works
S75	Southgate Side Road 57	Replacement within 1 year.
S98	Southgate Road 12	Replacement within 1 year.
S125	Southgate Road 14	Replacement within 1 year.
S128	Feairs Drive	Replacement within 1 year.
S34	Southgate Road 14	Replacement in approximately 3 years.
S55	Southgate Road 24	Replacement in approximately 4 years
S16	Southgate Road 8	Rehabilitation within 1 year. Replacement in approximately 8 years.
S32	Southgate Road 14	Rehabilitation within 1 year. Replacement in approximately 9 years.

7.0 Five Year Capital Plan

The structures in the 5-year Capital Plan shown below in Table 8 have been ordered for rehabilitation or replacement based on their condition during the latest completed inspection. The recommendations also take in account additional factors such as: low traffic volume roads, schedule reconstruction projects, and close proximity of priority structures. Based on the number of structures (118) in the Township's Inventory, Burnside has assumed two structures should be repaired or replaced on an annual basis.

Costing breakdown for planning and engineering design has also been provided below. It should be noted that the priorities listed may change and will need to be re-assessed during each OSIM inspection cycle.

Table 8: Five-Year Capital Plan

Year	Design and Planning		Capital Works		Total Annual Budget
	Structure No./Name	Cost	Structure No./Name	Cost	
2020	S031*	\$23,000.00	S031*	\$329,500.00*	\$399,500.00
	S033	\$47,000.00			
2021	S098*	\$40,000.00	S033	\$618,500.00	\$698,500.00
	S097	\$40,000.00			
2022	S075*	\$45,000.00	S098*	\$536,500.00*	\$1,160,000.00
	S125*	\$42,000.00			
2023	S071	\$55,000.00	S075	\$596,500.00	\$1,247,000.00
	S058	\$37,000.00			
2024	S119	\$220,000.00	S071	\$716,500.00	\$1,472,000.00
	S128*	\$37,000.00			
2025	S073	\$50,000.00	S128*	\$498,500.00	\$628,500.00
	S081	\$80,000.00			

* Note: The design and construction costs for S031, S098, S075, S125 and S128 may be significantly reduced if it is determined after appropriate evaluation, that multi-cell culverts are deemed to be a suitable replacement option for each site.

8.0 Summary

The 2020 OSIM inspections were carried out by Burnside on behalf of the Township of Southgate to identify the current condition of all the structures within the Township's inventory. The Summary Reports provided in Appendix A summarize the maintenance needs, additional investigations, and capital works requirements for each structure. The capital works for each structure has been given a priority of six to ten years, one to five years, within one year and urgent, based on the current BCI.

We trust the summary report provides all the information that you require at this time. If you have any questions or comments, please do not hesitate to contact us.

