

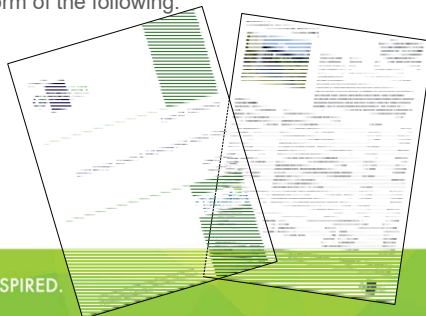


1

INTRODUCTION

Under the Public Transportation and Highway Improvement Act and [O. Reg. 104/97: Standards for Bridges](#), appropriate structural analysis are mandated through bi-yearly inspections these inspections are also commonly known as OSIMs inspections. Through various classifications the Town of Tillsonburg has a total of 23 non-provisional structures and an additional 12 provisional structures (i.e. retaining walls, etc..).

The Town's general practice is to retain a 3rd party consultant to complete these inspections in the form of the following:



2

ANALYSES

At the time of preparing this review, the Town's current inventory as of the last 2023 GMBLue Plan OSIM report includes the following segments:

Bridges	Culverts	Retaining Walls
8	7+	8

Generally an OSIM report's analysis consists of the Bridge Sufficiency Index (BSI) and Bridge Condition Index (BCI).

BSI is a measure of the overall needs of a structure incorporating BCI with non-structural considerations including traffic, economics, bridge width and bridge profile. These values will decline over the life of a structure, depending on changes in the condition of the structure (BCI), traffic and truck traffic volume, economic importance, detour routes, bridge width and bridge profile.

ANALYSES

The following breakdown represents BCI and BSI results per the Town's 2023 report:

TOWN OF TILLSONBURG 2023 BRIDGE, CULVERT AND RETAINING WALL INSPECTIONS BCI/BSI SUMMARY			
Structure	Structure Name	BCI Value	BSI Value
BR_CONCW0001	Concession St. Bridge	80	77
BR_GOLF0001	The Bridges Golf Course Hole 10	73	63
BR_GOLF0002	The Bridges Golf Course at John Pound Road	73	63
BR_GOLF0003	The Bridges Golf Course Hole 12 and 17	74	64
BR_KINS0001	Kinsmen Pedestrian Bridge	44	36
BR_LAKE0001	Lake Lisgar Pedestrian Bridge	65	57
BR_SMCO0001	Oxford St. Bridge	74	69
BR_VAN0001	Van St. Pedestrian Bridge	71	59
CU_BALD0954_1	Baldwin St. Culvert at Golf Course	62	59
CU_BROA2247_1	Broadway St. Culvert at Christie St.	42	40
CU_DEVON0314_1	Devonshire Ave. Culvert	47	44
CU_GLEND0178_1	Glendale Drive Culvert at Victoria St.	71	69
CU_LISG1158_1	Lisgar Ave. Culvert	60	57
CU_QUAR2695_1	Quarter Town Line Culvert at Stoney Creek	65	62
CU_VICT0599_1	Culvert across 81A's Driveway	72	72
RW_BEECH	Beech Blvd. and Quarter Town Line	52	N/A
RW_BRIDGE027_1	Bridge St. at Lisgar Ave.	68	N/A
RW_BROAD	Broadway St. at Bloomer St.	62	N/A
RW_FAIR	Fairway Hills Blvd. and Quarter Town Line	64	N/A
RW_NEWIE0001	Newell Road and Quarter Town Line (West Side)	37	N/A
RW_NEWIE0002	Newell Road and Quarter Town Line (East Side)	39	N/A
RW_VICT	Victoria St. and Concession St. W	63	N/A
RW_WILL	William St. and Quarter Town Line	70	N/A

BCI & BSI LIMITATIONS

Although the BCI value is a good tool for estimating the condition of a structure and the BSI value is a tool to incorporate non-structural considerations, these values should not be relied upon solely for prioritization of capital works. BCI and BSI values can be skewed by non-critical elements, and do not take into account additional factors such as the following:

- History of accidents
- Load rating requirements
- Future development of area
- Hydrology
- Nature of construction (rehabilitation or replacement)
- Potential for combined bridge and road construction
- Etc...

5

PROBLEM STATEMENT

The results of the Bridge, Culvert and Retaining Wall Inspections, using criteria set out in OSIM, set out the following funding forecast:

	Urgent	Within 1 Year	1 to 5 Years	6 to 10 Years
Number of Non-provisional Structures Requiring Work	1	2	2 (1 to 3 Years) 12 (1 to 5 Years)*	4
Total Estimated Non-provisional Recommended Capital Works	\$304,000	\$1,832,000	\$6,656,000 \$3,318,000*	\$1,338,000

*Note: includes Provisional Structures

6

BUDGET ANALYSES

In part when the OSIM report is integrated into Town's annual Bridge(s) & Culvert Budget Council may consider the following:

INDEX	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
TRANSFERS IN:										
Opening Balance	727,884	4,849	(1,782,076)	(4,481,762)	(8,382,091)	(12,832,824)	(18,187,881)	(23,693,376)	(29,324,681)	(35,082,922)
Contributions from Capital Levy	600,000	807,515	954,840	1,005,545	1,057,807	1,111,951	1,167,762	1,225,386	1,283,010	1,343,345
Debt Service Funding - approved request										
Debt Service Funding - new request	2,056,315	0								
Grants and Subsidies - Federal										
Grants and Subsidies - Provincial										
Grants and Subsidies - Municipal										
Contribution from Development Charges Reserve	1,064,821									
Total Funding Available for Projects	4,489,000	812,364	(835,237)	(3,476,217)	(6,225,284)	(8,779,703)	(11,020,119)	(13,467,990)	(16,041,671)	(18,739,577)
CAPITAL PROJECT COMMITMENTS										
BRIDGES	4,690,000									
BRIDGES		1,500,200								
BRIDGES		300,000								
BRIDGES			84,000			182,000				
CULVERTS				295,000	968,000					
CULVERTS						378,000				
CULVERTS				1,692,000	72,000					
CULVERTS							486,800			
CULVERTS								664,000		
CULVERTS		623,000								
CULVERTS				881,000						
CULVERTS					707,000					
RETAINING WALLS							312,000			
RETAINING WALLS										
Inflation Adjustment		148,954	208,831	158,018	91,320	19,084	0	0	0	0
Total Commitments to Capital Projects	4,690,000	2,881,113	3,617,831	2,740,918	1,883,829	331,084	0	0	0	0
TRANSFERS OUT:										
Transfers to Operating Budget										
Total Expenditures Against Reserves	4,690,000	2,881,113	3,617,831	2,740,918	1,883,829	331,084	0	0	0	0
Closing Balance Before Interest	0	(1,789,849)	(4,482,846)	(8,218,236)	(12,008,830)	(16,788,786)	(21,533,288)	(26,441,989)	(31,444,981)	(36,538,877)
Interest Income	4,849	(17,028)	(38,893)	(86,862)	(181,825)	(381,253)	(770,000)	(1,500,000)	(2,813,811)	(5,205,120)
Closing Reserve Balance	4,849	(1,785,078)	(4,481,762)	(8,285,098)	(12,190,655)	(17,170,039)	(22,303,288)	(27,941,989)	(34,258,792)	(41,743,997)

CONNECTED. ENRICHED. INSPIRED.

7

BUDGET ANALYSES

The annual Bridge(s) & Culvert Budget generally consists of the following:

INDEX	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
TRANSFERS IN:										
Opening Balance	727,884	4,849	(1,782,076)	(4,481,762)	(8,382,091)	(12,832,824)	(18,187,881)	(23,693,376)	(29,324,681)	(35,082,922)
Contributions from Capital Levy	600,000	807,515	954,840	1,005,545	1,057,807	1,111,951	1,167,762	1,225,386	1,283,010	1,343,345
Debt Service Funding - approved request										
Debt Service Funding - new request	2,056,315	0								
Grants and Subsidies - Federal										
Grants and Subsidies - Provincial										
Grants and Subsidies - Municipal										
Contribution from Development Charges Reserve	1,064,821									
Total Funding Available for Projects	4,489,000	812,364	(835,237)	(3,476,217)	(6,225,284)	(8,779,703)	(11,020,119)	(13,467,990)	(16,041,671)	(18,739,577)
CAPITAL PROJECT COMMITMENTS										
BRIDGES	4,690,000									
BRIDGES		1,500,200								
BRIDGES		300,000								
BRIDGES			84,000			182,000				
CULVERTS				295,000	968,000					
CULVERTS						378,000				
CULVERTS				1,692,000	72,000					
CULVERTS							486,800			
CULVERTS								664,000		
CULVERTS		623,000								
CULVERTS				881,000						
CULVERTS					707,000					
RETAINING WALLS							312,000			
RETAINING WALLS										
Inflation Adjustment		148,954	208,831	158,018	91,320	19,084	0	0	0	0
Total Commitments to Capital Projects	4,690,000	2,881,113	3,617,831	2,740,918	1,883,829	331,084	0	0	0	0
TRANSFERS OUT:										
Transfers to Operating Budget										
Total Expenditures Against Reserves	4,690,000	2,881,113	3,617,831	2,740,918	1,883,829	331,084	0	0	0	0
Closing Balance Before Interest	0	(1,789,849)	(4,482,846)	(8,218,236)	(12,008,830)	(16,788,786)	(21,533,288)	(26,441,989)	(31,444,981)	(36,538,877)
Interest Income	4,849	(17,028)	(38,893)	(86,862)	(181,825)	(381,253)	(770,000)	(1,500,000)	(2,813,811)	(5,205,120)
Closing Reserve Balance	4,849	(1,785,078)	(4,481,762)	(8,285,098)	(12,190,655)	(17,170,039)	(22,303,288)	(27,941,989)	(34,258,792)	(41,743,997)

CONNECTED. ENRICHED. INSPIRED.

8

BUDGET ANALYSES

The annual Bridge(s) & Culvert Budget generally consists of the following:

INDEX	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
CULVERTS										
Opening Balance	727,884	4,549	(1,790,976)	(4,481,762)	(6,281,006)	(8,992,854)	(12,187,081)	(16,093,374)	(20,924,031)	(26,982,923)
TRANSFERS IN:										
Contributors from Capital Levy	950,980	807,915	954,840	1,305,540	1,857,807	1,111,051	1,107,762	1,225,388	1,283,010	1,343,545
Debtenture Funding - approved request										
Debtenture Funding - new request	2,056,315	\$								
Grants and Subsidies - Federal										
Grants and Subsidies - Provincial										
Grants and Subsidies - Municipal										
Contribution from Development Charges Reserve	1,004,821									
Total Funding Available for Projects	4,690,000	812,664	(825,237)	(3,476,217)	(6,225,201)	(8,778,753)	(10,253,369)	(13,867,985)	(17,640,991)	(21,338,877)
CAPITAL PROJECT COMMITMENTS										
BRIDGES										
Kinsmen Ped Bridge - Reconstruction w/ Request	4,690,000	1,500,000								
Traskville Ped Bridge		300,000								
Concession St W Bridge						182,000				
BRIDGES										
Yonkoff St Bridge			44,000							
CULVERTS										
Linger Ave Culvert outlet at back of e					960,000					
Linger Ave Culvert				295,000						
CULVERTS										
Badlam St Culvert at parkway Trail						378,000				
CULVERTS										
Yonkoff St Culvert access culvert						72,000				
CULVERTS										
Harwood Road Culvert				1,690,000						
CULVERTS										
Harwood St Culvert at Harwood Pine						496,000				
CULVERTS										
Brookway & Church St Culvert					964,000					
CULVERTS										
Linger Ave North Culvert						265,500				
CULVERTS										
Linger Ave Culvert		625,000								
RETAINING WALLS										
Harwood Road Trail Wall			881,000							
RETAINING WALLS										
Harwood Road Trail Wall			707,000							
RETAINING WALLS										
Brookway St @ Broomer				548,000						
RETAINING WALLS										
7411							312,000			
Inflation Adjustment		148,954	-208,831	158,918	94,305			0	0	0
Total Commitments in Capital Budget	4,690,000	2,841,113	3,817,831	2,748,918	1,883,829	331,804	0	0	0	0
TRANSFERS OUT:										
Transfers to Operating Budget										
Total Expenditures Against Reserves	4,690,000	2,841,113	3,817,831	2,748,918	1,883,829	331,804	0	0	0	0
Closing Balance Before Interest	0	(1,789,848)	(4,481,762)	(8,218,738)	(14,888,830)	(22,867,583)	(31,860,945)	(43,954,329)	(60,979,350)	(83,032,273)
Interest Income	4,549	(11,008)	(28,000)	(69,862)	(161,725)	(311,253)	(474,375)	(653,500)	(859,625)	(1,095,850)
Closing Reserve Balance	4,549	(1,790,857)	(4,481,762)	(8,288,599)	(15,110,352)	(23,178,836)	(32,335,320)	(44,607,829)	(61,838,975)	(84,128,123)

5 Year Capital/ Replacement Program

5 Year Funding Program (DEFICIT)

9

KINSMEN BRIDGE EVALUATION

- An enhanced structural inspection was completed in 2019 that detailed the useful life of the bridge and its elements.
- The results of this enhanced inspection concluded/found severe corrosion and section loss noted throughout the steel superstructure and further highlights that many elements have reached the end of their service life.
- Overall, the structure is in poor condition with a general life expectancy remaining of 1-5 years (circa 2019).
- Estimated replacement cost are equivalent to \$4,690,000 million.
- As per the last direction from Council the bridge's detail design and tender packages are complete and may be "published"

10

KINSMEN BRIDGE EVALUATION

Due to the bridge's strategic placement, the bridge connects a large number of the Town's residents (including an abutting large seniors subdivision) to each other and directly "outlets" to the Town's downtown core:



Daily pedestrian traffic counts are estimated to 250-500 pedestrians a day depending on the season.

KINSMEN BRIDGE EVALUATION

Due to the bridge's current remaining useful life, Town Council will have to consider the replacement of the Kinsmen Bridge; estimated at \$4,690,000 million, through the following:

- A. A large dedicated (2025) capital fund(s) allocation
- B. By debt financing which is estimated at \$2,056,350
- C. Or a combination A. and B.

Alternatively, Council may also consider the decommissioning of the Kinsmen Bridge at an estimated cost \$1-1.5 million.

