

3. Bridges and Culverts

Bridges and Culverts

State of Local Infrastructure

The Township of James owns 1 bridge, 3 plastic culverts and 31 steel culverts

Location	Year Purchased	Purchase Price	Useful Life	Years in Service	Expected Replacement Year	2022 Net Book Value	Replacement Cost
Bear Creek Bridge	2013	\$388,527.00	75	12	2088	\$327917	518,983.63



Bridge across Bear Creek

Culvert Inventory

Asset Description	Material	Diameter(mm)	Length(m)	Total Length(m)	Average Condition
Culverts	Plastic	203	33.5	251.4	Fair
		250	56.4		
		300	62.5		
		450	71.6		
		600	27.4		
	Steel	203	103.6	5273.1	Fair
		250	1675		
		300	2703.6		
		450	576		
		600	106.7		
		760	108.2		

3. Bridges and Culverts

Condition Analysis

The Descriptor of “Good”, “Fair” or “Poor” is indicated based on a physical inspection by our Public Works Staff as well as remaining life.

Asset condition must be assessed according to standard engineering practices. For bridge structures, condition is based on an analysis of bridge inspection reports.

Useful Life

Steel and plastic culverts have a useful life of 50 years. Bridges have a useful life of 75 years

Replacement costs

Plastic Culvert	203 – 300mm	\$250/m
	450-600 mm	\$350/m
Steel Culvert	203-300mm	\$225
	450-600mm	\$325

Current Levels of Service

O. Reg. 588/17 Prescribed Levels of Service for Bridges & Culverts

Service Attribute	Community Levels of Service (Qualitative)	Technical levels of Service (Technical Metrics)
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists).	Percentage of bridges in the municipality with loading or dimensional restrictions.
Quality	Description or images of the condition of bridges and how this would affect use of the bridges. 2. Description or images of the condition of culverts and how this would affect use of the culverts.	For bridges in the municipality, the average bridge condition index value. 2. For structural culverts in the municipality, the average bridge condition index value.

Bridges & Culverts Community & Technical Levels of Service

Service	Community	Technical
Scope	Heavy Trucks, Pedestrians, Cyclists, ATV's, Emergency Vehicles.	100% of the Bridges owned by the Township of James (Being the Bear Creek Bridge) have load restrictions.
Quality	Figure 5 (Above) shows the Bear Creek Bridge.	Based on Visual Inspections completed by Township of James Public Works, the average condition of our culverts is fair. Continued monitoring & inspections will be completed to ensure no interruptions to service.

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Proposed Levels of Service

- Maintain all Bridges and Culverts in at least Fair Condition
- Bridges are critical links for emergency response and residential traffic. Load restrictions ensure an extended useful life of the Bear Creek Bridge.

Lifecycle Management and Financial Strategy

Bridge and Culvert Lifecycle Activities

Type	Activity	Frequency	Cost
Maintenance	Erosion control, culvert flushing		Time Spent
Rehabilitation	Ditching as needed		\$2,000/year
Replacement	Full Replacement costs have been outlined in the inventory section of this AMP		

Funding Sources and Strategy

- Bridges and Culverts are funded through taxation, reserves, and OCIF.
- In order to replace the Bear Creek Bridge, other provincial and federal grants would be needed.