



City of Barrie

**Addendum to Stormwater Asset Management Plan:
Levels of Service - Structural Culverts**

May 26, 2022

Levels of Service – Structural Culverts

Purpose

The City of Barrie’s Stormwater Asset Management Plan (AMP) includes both structural (greater than 3-meter span), and non-structural culverts. All sections of the AMP were completed with consideration to both culvert categories except for Levels of Service (LOS); which only considered non-structural culverts. The omission of structural culverts from this section was the result of them being identified as a transportation asset and grouped with bridges in previous iterations of the Transportation AMP, most recently in 2015. While Ontario Regulation (O.Reg.) 588/17 sets out reporting requirements for bridges and culverts together in Table 5, the City believes it is more appropriate to now report on the structural culverts as stormwater assets and separate them from transportation through the 2021 updates of the Stormwater and Transportation AMPs. The purpose of this addendum is to report the LOS for the City’s structural culverts to ensure compliance with the requirements of O.Reg. 588/17.

The mandatory LOS for structural culverts are shown in the table below.

O.Reg. 588/17 Culvert Levels of Service

| Service Attribute | Community LOS (Qualitative Description) | Technical LOS (Technical Metric) |
|-------------------|---|--|
| Quality | Description or images of the condition of culverts and how this would affect use of the culverts. | For structural culverts in the municipality, the average bridge condition index value. |

Community Level of Service

As required by O.Reg. 588/17, the following photos show structural culverts within the City that are ranging from Very Good to Fair Condition as per the Bridge Condition Index (BCI) detailed in Table 2.5 of the Stormwater Asset Management Plan. BCI ratings are determined through a biennial inspection completed in accordance with the Ontario Structure Inspection Manual (OSIM). Currently, all structural culverts throughout the City are in fair or better condition with the majority being good as indicated from inspections conducted in 2020 and 2021. Most structural culverts throughout the city are in a state of good repair; allowing them to function as designed as a part of the robust stormwater network, while lowering lifecycle costs and overall financial commitments.

Figure 1 – Structural Culvert in Very Good Condition



Figure 2 – Structural Culvert in Good Condition



Figure 3 – Structural Culvert in Fair Condition



Technical Level of Service

O.Reg. 588/17 requires that the City tracks one technical metric related to the average Bridge Condition Index (BCI) of the structural culverts within the City of Barrie. The average BCI can be seen in the table below.

Table 1

| Service Attribute | Technical LOS (Technical Metric) | Average BCI of Structural Culverts |
|-------------------|---|------------------------------------|
| Quality | For structural culverts in the municipality, the average bridge condition index value | 74.78 |

Conclusion

The City's structural culverts are generally in good condition and providing good service. Though they have a high consequence of failure, their condition means the likelihood of failure, and therefore overall risk, is low to moderate. Some investments will be required over the next 10 years, and those will be captured in future operating and capital budgets. All figures and analysis associated with these assets and performance measures are captured in the 2021 Stormwater Asset Management Plan.