

Attachment-2 What is an Asset Level of Service

Asset Levels of Service Overview

The 2024 Asset Management Plan includes documentation of existing levels of service across all asset categories. This brief is intended to help readers understand what an asset level of service is to support review of the overall AMP.

What is an asset?

An asset is anything that the City owns of economic value that serves our Community. Guelph has a wide range of assets from roads, to park play structures, to transit buses, to IT equipment.

Assets are defined as, "an item, thing, or entity that has potential or actual value to an organization," by ISO 55000 which establishes the standards for asset management.

What is an asset level of service?

Asset levels of service are the basis for asset management decision making. They are targets by which to measure and record the state of the infrastructure, funding gaps, risks, needs, priorities, and trade-offs.

There are two types of levels of service required by the regulation:

1. Technical levels of service or "quantitative metrics"
Best practice recommends that they are a value which summarizes the assets and their performance/capacity. For example, rather than reporting every single asset's performance, use an average to capture an overall perspective.
2. Customer levels of service or "qualitative descriptions"
These are meant to capture what the end user experiences in broad detail.

Since our assets form the skeleton of all of our City's services it can be difficult to know when to say the service level isn't provided by the assets in some way. Asset Management tries to take a restricted approach to how much we include so as to really focus on the assets themselves whenever possible. By focusing on measuring asset performance, asset management aims to be better equipped to understand our city's assets as a whole. It is important to remember that assets work in tandem with and adjacent to other assets and never stand alone.

Example: Roads

A good example of an asset level of service is the average pavement condition rating of a road. This would be a *technical level of service* which is a metric that aggregates the conditions of all the city's roads into one. What makes this a good metric is that the condition rating describes various characteristics about the road

(cracks, roughness, etc.) and is standardized so we can understand how the average road use experience will be.

Examples of Roads at each of the condition ratings

Figure 1: Condition Rating Excellence (5>4)

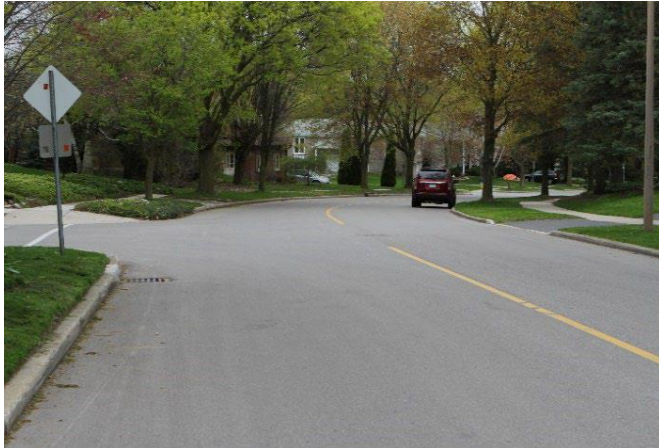


Figure 2: Condition Rating Good (4>3)



Figure 3: Condition Rating Fair (3.2)



Figure 4: Condition Rating Poor (2>1)



Figure 5: Condition Rating Very Poor (1>0)



We can also predict how the condition will decline without continued road maintenance and replacement which can be valuable in demonstrating the achievements of our capital renewal and maintenance programs.

For roads, a *community level of service* would be a description of the assets and their provision. For example, “the road network covers roughly 600 KM and provides connections to all properties within the city as well as access to provincial highways 6, 7, and 401”. The community level of service tells a story about the assets as a whole and what the end users receive.

The levels of service from the 2021 Core AMP for our road network is shown below.

Table 1: 2021 Core AMP - Table 18 Extract from O.Reg 588/17 Table 4 – Part 2: Technical LOS for Roads

Service attribute	Technical levels of service (technical metrics)	City of Guelph Response
Scope	Number of lane-kilometres of each of arterial roads, collector roads and local roads as a proportion of square kilometres of land area of the municipality.	Number of Lane km: Arterial: 282.55 – 1.069% of total land area Collector: 140.50 – 0.532% of total land area Local: 702.51 – 2.658% of total land area
Quality	For paved roads in the municipality, the average pavement condition index value. For unpaved roads in the municipality, the average surface condition (e.g. excellent, good, fair or poor).	3.0 / 5 - Fair

Table 2: 2021 Core AMP - Table 19 Extract from O.Reg 588/17 Table 4 – Part 1: Community LOS for Roads

Service attribute	Community levels of service (qualitative descriptions)	City of Guelph Response
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity.	The City road network covers approximately 600km and all sections of the City. Major highway connections to Provincial highways include Highway 6 to Highway 401, and Highway 7. Refer to the "Transportation Assets - State of the Assets" section for more details and Error! Reference source not found. for a map presenting the City road network.
Quality	Description or images that illustrate the different levels of road class pavement condition.	The City of Guelph adheres to and follows the standards and best practices described the Ontario Good Roads Association (OGRA) when defining pavement condition. The definitions provided by OGRA are followed by the third-party consultants engaged by the City to perform the pavement inspections. Ratings provide from those inspections are converted to a five point scoring system that is consistent with the asset management analysis tools used by the CAM team.

What isn't an asset level of service under the Asset Management Plan?

There are many levels of service and other standards which have been previously established, however they would not be considered an asset level of service. It isn't that these levels of service are not important or irrelevant to the asset, but they are simply not considered the "asset level of service" within the scope of the Asset Management Plan.

For example, what we choose to set the speed limit of a road to be is an operational decision. Similarly, the frequency of snow clearing is a minimum maintenance standard but is not the asset level of service. Additionally, the other assets which exist around the road have their own asset levels of service which they provide but they are separate from the road's asset level of service. These would be things like the water, wastewater, and stormwater networks as well as the traffic control and streetlighting.

Master Planning and Asset Levels of Service

Through the master planning process, many service areas have developed their own levels of service. For example, the transportation master plan identifies the OTC's multimodal level of service (MMLOS) framework as a priority item to integrate into future transportation planning. This framework identifies many characteristics in the road design (lane width, pedestrian safety, angle of corners, etc.) to establish how any segment or road services various user groups (cars, trucks, bicycles, pedestrians). This is an important planning tool and it can be easy to see how there is a connection to road assets and asset level of service. The difference is that the MMLOS focuses on user experience over asset performance and does not scale to the scope of the entire city.

Master plans and other servicing strategies may have identified asset levels of service and the work done in the AMP does not negate these items.

Table 3: Additional Examples of Technical Levels of Service

Asset Type	Is an Asset LoS	Is not an Asset LoS
Facilities	Annual electricity consumption	How many facilities we have
Bridges	Type of traffic supported by bridges	Where those bridges are located
Bridges	Percentage of bridges with load bearing restrictions	
Stormwater	Number of annual drainage issues per annual rainfall	Where a stormwater pond is located
Fire	90 th Percentile for response travel times	Number of firefighters on call
Water	Annual water consumption	