

PREPARED BY:



The City of Hamilton

Alleyway State of the Infrastructure
Report & Asset Management Strategy:
Summary and Recommendations
Roster 32 – Sustainable Infrastructure Planning

Executive Summary and Recommendations

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Overview

The objective of the Alleyways State of the Infrastructure (SOTI) & Asset Management (AM) Strategy report is to provide insight that helps the City to establish a lifecycle management (LMS) strategy for each alleyway in the City based on the service that it provides. The LMS addresses both the capital renewal and operational maintenance components of how the City manages an alleyway.

The process to establish an appropriate LMS is supported by the development of an alleyway classification hierarchy and the development of a cost model that provides transparent and objective information to assist with making decisions. The data analysis that was performed in this study is presented to facilitate a discussion on the current management strategy of the alleyways and opportunities to adjust the strategy to meet alternative level of service goals.

This summary document presents an overview of the levels of service and costs associated with a range of LMS, as well as recommendations for future work. For a further breakdown of the costs and strategies, refer to the full Alleyway SOTI & AM Strategy report. Consideration of level of service (LOS) alternatives should be done holistically as part of the City's enhanced Road Asset Management Plans currently being developed (as required by O. Reg 588/17).

Alleyway Hierarchy and Level of Service

The goal of the alleyway hierarchy is to establish a class for each alleyway, ranging from Class A through Class E. The class of an alleyway determines the LOS that it will receive. Table 1 provides a description and breakdown of the alleyway classification.

Table 1 – City of Hamilton Alleyway Classification

| Hierarchy Class | Description | Quantity | Percentage |
|-----------------|---|----------|------------|
| A | Alleyway is assumed and provides a critical role to support surrounding businesses. | 31 | 4.8% |
| B | Alleyway is assumed and provides an important role in the community. | 131 | 20.4% |
| C | Alleyway is assumed and only used for basic purposes, such as access to rear of yards, recreational spaces or overland flow routes. | 39 | 6.1% |
| D | Alleyway is unassumed and could be used for purposes falling within Utilization Categories 1-3 as described in Table 2 | 311 | 48.4% |
| E | Alleyway is either assumed or unassumed and is not being used by the surrounding community, often because it is fully encroached. | 130 | 20.3% |
| Total | | 642 | 100% |

Table 2 – Utilization Categories

| Utilization Categories | | | |
|---|--|---|--|
| 1 | 2 | 3 | 4 |
| <p>Alleyway parcel is in/contains any of the following:</p> <ul style="list-style-type: none"> • In Priority Area, and either • Commercial Parking & Delivery Area/Route (case-by-case), and/or • Public Waste | <p>Alleyway parcel is in/contains any of the following:</p> <ul style="list-style-type: none"> • In Priority Area, or • Office/ Commercial/ Institutional/ Industrial Areas, or • Special Consideration, or • Commercial Parking & Delivery Area/Route (case-by-case), or • Public Waste, or • Private Waste | <p>Alleyway parcel contains any of the following:</p> <ul style="list-style-type: none"> • Rear Yard Access, or • Overland Flow Route (only catch basin at end) | <p>Alleyway parcel:</p> <ul style="list-style-type: none"> • Is not used (needs confirmation from adjacent property owners that there is no utilization) And could have: • Third-Party Above or Below Ground Infrastructure, or • City-Owned Above or Below Ground Infrastructure |

Alleyway classification is used to determine the Operational and Capital LMS for all alleyways, using a combination of Operational and Capital LOS objectives to define the specific activities completed on each alleyway.

Alleyways are considered Class 6 roadways under O. Reg 366/18 given the volume of traffic and speed limit. As such, minimum maintenance standards do not apply. The LOS that is provided to each alleyway class is the driver for determining the total annual capital and operational/maintenance expenditures that are required. Operational services refer to a range of operational and maintenance activities, grouped into three broad categories: routine patrols, follow-up on work orders, and reactive response. Capital services refer to the type of surface material provided to an alleyway upon capital renewal, including: replace with hardtop surface (concrete), replace with loasetop surface (gravel), and no capital renewal. The combination of these operational and capital services comprises the LMS.

Lifecycle Management Strategy

A LMS represents a combination of Operational and Capital LOS that are provided to each alleyway class. Three alternative LMS (low, medium, and high) were established for both capital and operational areas with associated costs.

Low LOS LMS

The current LMS that is followed by the City would be considered a Low LOS LMS. The alleyways are maintained on a reactive basis and there are no capital expenditures for state of good repair of alleyway surfaces. The Low LMS scenario is summarized in Table 3. The cost for this scenario is \$175,000 per year for operational costs and \$0 per year for capital costs.

Table 3 – Low LOS LMS Scenario

| Hierarchy Class | Operational LMS | Capital LMS |
|-----------------|-------------------|--------------------|
| A | Reactive Response | No Capital Renewal |
| B | Reactive Response | No Capital Renewal |
| C | Reactive Response | No Capital Renewal |
| D | Reactive Response | No Capital Renewal |
| E | Reactive Response | No Capital Renewal |

Medium LOS LMS

The operational and capital LOS for the Medium LMS scenario is comprised of combinations of operational and capital services, summarized in Table 4. The cost for the medium LOS LMS scenario is \$743,000 per year for operational services and \$863,000 per year for capital services.

Table 4 – Medium LOS LMS Scenario

| Hierarchy Class | Operational LMS | Capital LMS |
|-----------------|--|---------------------------------------|
| A | O-1: More Frequent Routine Patrols (12 times/year) and Work Orders (6 times/year) Reactive Maintenance | C-1: Replace with Hardtop Surface |
| B | O-2: Frequent Routine Patrol (4 times/year) and Work Orders (2 times/year) Reactive Maintenance | C-1: Replace with Hardtop Surface |
| C | O-3: Less Frequent Routine Patrol (2 times/year) and Work Orders (once/year) Reactive Maintenance | C-2: Replace with Loosetop Surface |
| D | O-4: Reactive Maintenance | C-3: No Capital Renewal |
| E | O-4: Reactive Maintenance* | Consider for Divestment |

*Until divestment is implemented Class E alleyways should receive O-4: Reactive Maintenance

High LOS LMS

The high LOS LMS scenario includes winter control services to the alleyways while maintaining the medium LOS LMS scenario for the other operational and capital services. The additional operational cost on top of the Medium LOS LMS to provide winter control ranges from \$120,000 per year to provide the service to only the Class A alleyways, to \$2.1 million per year to provide the service to all alleyways that are not fully encroached.

Summary of Findings

This report analyzes the current state of the City's alleyways, develops a hierarchy to classify each alleyway based on the service it provides the surrounding community, and establishes costs to provide a range of operation and capital lifecycle management strategies on the alleyways. The following points summarize the analysis:

- There are 642 City-owned alleyways (including assumed and unassumed alleyways) with a total replacement value exclusive of land value of approximately \$67.3 million (2019 dollars).
- The replacement value of the alleyways that are in poor condition is approximately \$20.1 million.
- The budget allocated to provide the current lifecycle management strategies (LMS) on the alleyways is \$175,000 per year. This expenditure is entirely related to operational activities – the City does not currently spend any money to make capital improvements to the alleyways. This is considered a low level of service lifecycle management strategy.
- The alleyway hierarchy was used to develop Medium and High LMS scenarios. The cost to provide these enhanced LMS ranges from \$1.6 million to \$3.7 million per year. This annual cost includes both the capital expenditures to replace the surface of alleyways and the costs to provide proactive maintenance activities. These costs include staffing related expenditures that would be required to implement the lifecycle management strategies.
- The alleyways classification process identified at least 130 alleyways where the evidence suggests that they are not being used for any purpose by the surrounding community.
- The City should review the results documented in this report and formally establish the operational and capital LMS that will be provided to the alleyways (i.e. confirm that the low LOS LMS will continue to be provided or provide the Medium or High LOS LMS with appropriate funding).

Recommendations

The City should review the results documented in the Alleyway SOTI & AM Strategy report and formally establish the operational and capital LMS that will be provided to the alleyways. Any increase from the current LMS will result in significant increases to the existing operational and capital expenditures. If the City decides to increase investment for the capital renewal of alleyways, then the classifications established in this report should be combined with the condition assessment data to prioritize the renewal activities.

In addition to the above, the following recommendations are provided for consideration by the City:

1. Confirm Maintenance Obligations

The City should consider the development of a comprehensive policy that clearly outlines the maintenance obligations of assumed versus unassumed alleyways and the corresponding services that are provided. A clear policy would provide the City with line of sight with respect to using the hierarchy developed in the Alleyway SOTI & AM Strategy report to classify each alleyway and determine the appropriate maintenance activities.

2. Consideration for Stormwater Management in Alleyways

Many of the alleyways are in areas of the City with combined sewers and stormwater runoff control concerns. It is recommended that the City explore the viable options for using alleyways as a means to promote on-site stormwater runoff control where possible.

3. Divestment of Alleyways

The City should further explore the divestiture of the 130 Class E alleyways that have been identified as being surplus to the City's and surrounding Community's use. These alleyways are often fully encroached, impassable, and would require the cooperation of all adjacent property owners to ensure that the divestment process is fair and efficient. However, it should be recognized that the cost to divest these 130 alleyways is estimated to be \$6.2 million. This expenditure needs to be considered against the benefits of eliminating potential risks posed by the ownership of these assets.

4. Data Management of Work Orders

The City should develop a strategy to record operational work orders that are completed at each individual alleyway. The current process only records the work order data for all alleyways by district. The more granular level of operational data will support the continual improvement of the analysis completed in the Alleyway SOTI & AM Strategy report.

5. Continual Review

The City should update the analysis in the Alleyway SOTI & AM Strategy report on a periodic basis. The City should use the objective, transparent process developed in this report to support decisions related to adjusting the LOS that are provided to the alleyways. Additionally, the condition of the alleyways should be assessed on a period (i.e. every 5 year) basis.