

Asphalt Construction Stakeholder and Industry Consultation Work Plan

Findings and Recommendation

Recommendation

That the June 29, 2021, Integrated Infrastructure Services report CR_8230, be received for information.

Previous Council/Committee Action

At the March 30, 2020, City Council meeting, the following motion was passed:

2. That Administration provide a report to Committee summarizing the findings and any recommendations from the work plan identified in Part 1.

Executive Summary

This report builds on work presented to Urban Planning Committee on December 1, 2020, in report CR_8229 (Pavement Design and Asphalt Construction Specifications and Standards), which presented an overview of the City's current pavement standards, a snapshot of the City's roadway assets condition, results from a limited study of actual versus expected performance, and a list of improvement areas from an internal survey. This report responds to Part 2 of the March 30, 2020, City Council motion.

For this phase of the project, Administration engaged third-party stakeholders and industry experts on focus areas of improvement identified in the first phase and completed a jurisdictional scan and a survey of third-party stakeholders. The information collected was reviewed and used to prioritize recommendations and improvement projects that could be undertaken.

Some highly rated improvement projects are already underway. Potential improvement projects will require further consultation with the development industry before implementation is considered. Administration will review the improvement projects against corporate priorities and available resources as part of the business plan development for each affected area.

Report

This report summarizes Part 2 of a two-part motion to examine opportunities to improve the City's standards for pavement design and construction practices for asphalt construction. Part 1, addressed in a previous Urban Planning Committee report on December 1, 2020 (CR_8229, Pavement Design and Asphalt Construction Specifications and Standards) provided an overview of current internal specifications and standards for pavement design and construction practices for asphalt construction, historical and current data on the condition and actual/expected performance of City roadway infrastructure. It concluded with a work plan describing the activities, timelines, and resources required for consulting with third-party stakeholders and industry experts on areas of improvement.

Pavement condition is determined through condition inspections, including pavement structure, renewal history and pavement design and construction. Knowledge of the pavement condition and influencing factors is critical to effectively managing the performance of the pavement. This knowledge affects the type of maintenance, rehabilitation, and renewal treatments needed and implemented at the right time and location to optimize pavement performance cost-effectively. Following a review with internal stakeholders, Administration identified the following areas of improvement to help focus the subsequent phases of the work:

- Pavement Design Standards and Construction Specifications
- Coordination and Management of Utility Cuts
- Information (Data) to Support Asset Management
- External Stakeholder Relationships
- Pavement Inspection and Reporting

Part 2 of the review engaged third-party stakeholders and industry experts on the above areas of improvement. This information helped inform the recommendations in this report.

Approach

The key requirement of Part 2 is to develop findings and recommendations based on the consultation performed in both parts of the project. Part 2 consultation consisted of the following:

1. Jurisdictional scan (consultation with other cities) on standards of pavement performance and business processes to manage pavement performance.
2. Third-party consultation on issues related to improving pavement performance and reducing potholes. Through a survey, Administration engaged industry

- experts and education/research agencies to identify ideas pertaining to issues and obstacles hindering the City in achieving desired pavement performance.
3. Panel discussion with municipal participants of the jurisdictional scan to delve further into the supplied data, and a focused discussion on key influences for pavement performance.

Jurisdictional Scan

Six jurisdictions representing municipalities from across Canada participated in the jurisdictional scan. The jurisdictional scan investigated the overall pavement condition and severity in relation to pothole concerns with similar considerations as the City of Edmonton to identify their current pavement practices. This information can help benchmark the City's existing processes and conduct a gap analysis exploring options for prioritization, recommendations, and an improvement plan.

From the perspective of pavement performance, the City of Edmonton appears slightly ahead of most other jurisdictions considered in the scan. This is primarily because the investment in the Neighbourhood Renewal Program, the first of its kind in Canada, is having positive outcomes in terms of pavement condition results. The City of Edmonton's investment in transportation asset renewal is higher than other municipalities. However, when looking at a further breakdown into elemental costs for each category, such as traffic signals, streetlights, and sidewalks, the actual spend by the City on pavement renewal is close to what all other jurisdictions spend on pavement renewal.

More detail and findings from the jurisdictional scan can be found in Attachment 1.

Stakeholder Consultation

Attachment 2 contains a summary of the stakeholder consultation survey. More than half of the participants in the external stakeholder survey identified themselves as contractors; 27 percent classified themselves as owners, and the rest as designers, developers, or other categories. Although members of academia were invited to participate in the survey there were no respondents who self-identified as being from research or academia. This consultation, coupled with internal stakeholder consultation in Part 1, informed the thematic improvement projects considered in this report.

In addition to survey questionnaires, municipal stakeholders who participated in the jurisdictional scan participated in an online panel discussion. The discussion offered insight into the data supplied as well as various improvement options for pavement design and construction.

Recommended Improvement Projects

Potential improvement projects were developed from the work of Parts 1 and 2. These potential improvements were evaluated based on the following considerations to

assess relative importance and benefits to the City: level of effort and cost; available budget; risk; and interconnectedness with other initiatives.

Two high priority potential improvements identified through the consultation with stakeholders and the jurisdictional scan are already underway. They are:

- Develop an asset management plan to identify and address management of the complete lifecycle for asphalt pavements to improve management of pavement performance through information sharing, coordination and clear accountability. This improvement is already being undertaken as part of the Infrastructure Strategy and Asset Management Policy
- Evaluate cost-benefit of options to compile one source of data used for decision making and one referencing system to improve management of pavement performance through the management of one centralized well-structured data source. A business case is being developed for this improvement, including the consolidation of asset management data.

The following five projects, listed in order of priority, are highlighted as key to progressing our standards for pavement design and construction practices for asphalt construction and will be reviewed further for potential implementation:

Project	Project Description
Review performance of pavement restoration techniques for utility cuts.	<ul style="list-style-type: none"> ● Define and review current practices, including the Utility Line Assignment (ULA) permit and business processes. ● Investigate pavement restoration techniques and procedures. ● Recommend solutions based on cost-risk-benefit analysis.
Review and improve specifications for preventative maintenance.	<ul style="list-style-type: none"> ● Define and review the selection process of appropriate treatment (material, timing and preparation procedures) on different road classes. ● Research likely effectiveness of new initiatives for planned regular preservative maintenance treatments. ● Perform a cost-benefit analysis of options for new and appropriate technologies.
Determine adequate penalty charges for defective work or non-compliance.	<ul style="list-style-type: none"> ● Conduct a lifecycle cost study and assess appropriate penalties and liability limits for defective work.
Review implementing better tracking of maintenance	<ul style="list-style-type: none"> ● Review the cost/risk/benefit of improved systems for tracking maintenance and failure events.

activities and pavement failure modes.	<ul style="list-style-type: none"> Review opportunity to collect and input historical performance data.
Update the Pavement Design Standard.	<ul style="list-style-type: none"> Provide additional guidance and clarity, such as consolidation within the specifications, consideration of more types of road uses, and parameters for specialized design and design inputs.

Next Steps

Potential improvement projects will require further consultation, including with the development industry, before implementation can occur. Administration will review the improvement projects against corporate priorities and available resources as part of the business plan development for each affected area as part of continuous improvement initiatives.

Corporate Outcomes and Performance Management

Corporate Outcome: The City of Edmonton has sustainable and accessible infrastructure			
Outcome	Measure	Result	Target
The City of Edmonton has sustainable and accessible infrastructure.	Edmontonians' Assessment: Access to Amenities and Services that Improve Quality of Life (% of survey respondents who agree/strongly agree)	70% (2018)	Increase over the previous year

Attachments

1. Jurisdictional Scan Summary
2. Stakeholder Consultation Summary

Others Reviewing this Report

- G. Cebryk, Deputy City Manager, City Operations
- M. Persson, Chief Financial Officer and Deputy City Manager, Financial and Corporate Services
- S. McCabe, Deputy City Manager, Urban Planning and Economy
- C. Owen, Deputy City Manager, Communications and Engagement
- K. Fallis-Howell, Acting City Solicitor