Transportation Network Performance Indicators

Mobility Network Assessment Project Update

Recommendation

That the March 23, 2021, Urban Form and Corporate Strategic Development report CR_7477, be received for information.

Previous Council/Committee Action

At the December 11, 2019, City Council Budget meeting, the following motion was passed:

> That Administration prepare a report with an update on the mobility network analysis, to be included in upcoming report CR_7477.

Executive Summary

Administration is undertaking a City-wide mobility network assessment that is evaluating existing and future mobility network performance to recommend investment priorities. The mobility network assessment supports direction from The City Plan to "maximize the efficiency of the existing mobility network through a holistic analysis of system capacity and targeted infrastructure improvements." The mobility network assessment will prioritize infrastructure investment that aligns with direction from The City Plan and ConnectEdmonton's strategic goals of Healthy City, Urban Places, Regional Prosperity and Climate Resilience. There are three components to the Mobility Network Assessment Project:

1. *Develop transportation network performance indicators.*
   The transportation network performance indicators can be used to understand the performance of the mobility network. The indicators will be used to inform the goals and targets set through the Enterprise Performance Management process.

2. *Develop a mitigation measures toolkit.*
   The mitigation measures toolkit provides a list of potential interventions that can be implemented to improve operational performance of the mobility network. The toolkit will be used to inform solution identification as projects move forward to design and construction.

3. *Develop a framework to prioritize locations for investment.*

The prioritization framework was developed with a focus on strategic alignment, including input from The City Plan and the Safe Mobility Strategy. The framework will recommend priority mobility infrastructure investments to inform the City's Priority Based Budgeting approach for the 10-year Capital Investment Outlook and the 2023-2026 Capital Budget.

The framework will recommend the prioritization of investment in locations that best align with ConnectEdmonton's strategic goals and directions from The City Plan. Projects that were considered in previous capital budget cycles that do not demonstrate strategic alignment may no longer rank as high priorities.

Report

In 2018, Administration began to review network operations and improvements for the southwest, southeast and northeast quadrants of the City. At the June 11, 2019, Urban Planning Committee meeting, report CR_6764 Arterial Road Planning and Delivery Process outlined Administration's approach to evaluating the transportation network. The report identified the need to complete a holistic, city-wide review by developing indicators, evaluating immediate and future conditions and prioritizing transportation investments to align with the vision outlined in The City Plan. The mobility network assessment will establish a consistent process for the identification and prioritization of transportation network investments to align with the City's strategic goals.

Transportation Network Indicators

Transportation network indicators are the metrics that reflect observable changes and the cumulative behaviors of many. They will help monitor shifts in operations and behavior pertaining to the mobility network. These include indicators such as transportation sector greenhouse gas emissions, mode share and travel times. Some of the indicators can also be used to track progress towards targets in The City Plan, such as net zero personal greenhouse gas emissions and 50 percent of trips made by transit and active transportation.

Many of the indicators reflect behavior and travel patterns at the City-wide level. These indicators, including mode share, are not likely to change significantly due to infrastructure investment alone. Infrastructure investment represents only one of the four levers of change identified in The City Plan. A strategic combination of infrastructure investment alongside policy levers will be required to effect substantial change in the transportation indicators.

Mitigation Measures Toolkit

Mitigation measures within the mobility network are tools and interventions that the City may use to enhance the performance of the mobility network. A list of mitigation measures was developed by consolidating the range of potential tools available. There are three categories of mitigation measures:

1. Policy Measures are not tied to infrastructure investment, but require the implementation of new policy by the City. Policy measures focus on opportunities to support behaviours that help maximize the efficient use of mobility infrastructure. An example of a policy measure is the strategic management of public parking supply and pricing.
2. Composite Investment Measures are lower cost infrastructure investments that are best implemented as part of a program that could address a series of localized improvements at various locations City wide. These measures may include a composite investment that supports improvements like signal upgrades, sidewalk construction, or targeted safety improvements at many different locations.
3. Standalone Project Measures include improvements that focus interventions in a specific area or corridor. These measures may include interventions such as adding bus lanes, widening an existing roadway, or constructing a new bicycle route.

Policy measures are examples of Policy Levers as identified in The City Plan, whereas composite investment and standalone measures are examples of infrastructure investment levers. A full list of mitigation measures, included as Attachment 1, details a suite of improvement options for all modes of travel. Measures intended to reduce vehicular congestion are included, along with measures that focus on vulnerable road users, safety, transit and active transportation. The mitigation measures toolkit encourages consideration of solutions that improve the operations and safety of the mobility network as a whole, which may or may not focus on alleviating local vehicular congestion. As projects are selected for further planning and design, solutions will be selected considering the local context.

Prioritization Framework

There are many locations across Edmonton's mobility network that may benefit from infrastructure investment. However, the City has limited resources and must balance investment in mobility infrastructure with other needs. Strategic prioritization of infrastructure investment can help ensure that funding is allocated effectively. Direction in The City Plan supports the development of a strategic prioritization framework with directions such as "align the capital and operating budget with growth priorities and

city-wide budget planning" and "maximize the efficiency of the existing mobility network through a holistic analysis of system capacity and targeted infrastructure improvements." The framework will help identify where investments in the mobility network best align with ConnectEdmonton's strategic goals and the directions in The City Plan.

An operational review of the mobility network identifies that there is a long list of locations for potential investment. These locations include:

- Roadway segments and intersections with congestion and/or operational concerns
- Opportunities to improve transit speed and reliability, including new mass transit lines
- Existing gaps in the pedestrian and cycling network
- Locations with identified safety concerns

A multi-departmental team, with consultant support, worked with the data available and strategic documents to develop prioritization criteria. The criteria considers the mobility network as an interconnected system with multiple facets that must be balanced to ensure that the network operates safely, effectively and efficiently for all user groups.

The City Plan was used as a key input for the prioritization criteria by considering alignment with nodes, corridors, principal roadways, active modes improvements and mass transit. The criteria also incorporates direction from The Safe Mobility Strategy, The Sidewalk Strategy, The Bike Plan and ongoing work on Mass Transit Planning. Other inputs include data on funded capital projects and upcoming renewal plans. The resulting framework includes six criteria:

1. **Roadway Operations** - How the investment affects vehicle traffic and goods movement.
2. **Transit Support** - How the investment aligns with and supports transit routes and mass transit plans.
3. **Active Modes Support** - How the investment supports improvements for people walking and cycling.
4. **Safety Considerations** - How the investment aligns with the high injury network identified using the crash and equity analysis developed as part of the Safe Mobility Strategy.
5. **Investment Alignment** - How the investment aligns with planned renewal work or other funded capital projects.
6. **Development Support** - How the investment supports potential for high user growth and development of the city's nodes.

All potential areas of investment are scored within these categories and prioritized based on their ranking. Priority locations will be those that demonstrate an opportunity to meet multiple objectives and/or align with focus areas in The City Plan, such as nodes, corridors and primary roadways. As a result, the resulting priorities may not reflect high profile locations affected primarily by vehicular congestion or operational issues. Additionally, many of the locations identified in previous budget discussions may be displaced by priorities that align more closely with The City Plan goals. The framework is designed to be updated and re-employed to support subsequent discussions regarding mobility network priorities.

Next Steps

Administration will continue to refine and finalize the prioritization framework, including a GBA+ review, to ensure that equity considerations are incorporated into the recommendations. The framework will be applied to score and rank potential mobility network investments, including recommendations from the Mass Transit Planning work.

Potential improvements at the high ranking locations will be reviewed in the City's transportation models. Modelling results will be used to understand the anticipated impacts of different infrastructure investment scenarios. However, it is expected infrastructure investment will not significantly impact the City-wide performance indicators unless the investments are combined with policy levers. The recommended areas of investment that result from the prioritization exercise will be brought to Urban Planning Committee in the summer of 2021.

The results of the prioritization process will be used to inform the Priority Based Budget approach for the 10-year Capital Investment Outlook and the 2023-2026 capital budget cycle. Because of the focus on future projects and the limited funding remaining within the current budget cycle, the prioritization process results are not intended to inform changes to priorities within the current budget cycle. The current budget cycle included its own priority identification exercise and discussion through the budget approval process in 2018.

Corporate Outcomes and Performance Management

Corporate Outcome(s): The City of Edmonton has sustainable and accessible infrastructure			
Outcome	**Measures**	**Results**	**Target**

Edmonton neighbourhoods are more vibrant as density increases, where people and businesses thrive and where housing and mobility options are plentiful	Mobility choice: Edmontonians who choose walking, biking, and/or public transit as their primary choice or main mode of transportation to work, school, and completing their other daily needs	2019: 18 percent to work 56 percent to a post-secondary institution 9 percent other	2019 Baseline
Edmonton is an environmentally sustainable and resilient city	Community Greenhouse Gas (Tonnes of carbon dioxide equivalents)	18.7 megatonnes, carbon dioxide equivalent (Dec 2018)	Reduce total community emissions to 35% below 2005 levels by 2035

Attachment

1. Mitigation Measures

Others Reviewing this Report

- C. Owen, Deputy City Manager, Communications and Engagement
- G. Cebryk, Deputy City Manager, City Operations
- A. Laughlin, Deputy City Manager, Integrated Infrastructure Services
- M. Persson, Financial and Corporate Services
- K. Fallis-Howell, Acting City Solicitor