

Non-Statutory Public Hearing on Regional LRT Network Plan

Recommendation:

That Transportation and Public Works Committee recommend to City Council:

1. That the City Wide and Regional LRT Network Plan be amended as outlined in Attachment 1 of the May 12, 2009, Transportation Department report 2009TD3911.
2. That the Transportation Master Plan be revised to incorporate the elements of the LRT Network Plan.

Report Summary

This report outlines the key characteristics of the future LRT network, recommendations on system style, vehicle technology, number of LRT lines in an ultimate LRT network, logical extent of those lines, circulation in the central area, and tunnel capacity constraints.

Previous Council/Committee Action

At the March 3, 2009, Transportation and Public Works Committee meeting, the following motion was passed:

That a Non-Statutory Public Hearing on the general City-wide and Regional LRT Network Plan be held at June 2, 2009, Transportation and Public Works Committee meeting, first item at 9:30 a.m.

Report

The LRT Network Plan outlines the recommended long term LRT network within the city of Edmonton and the

Region. Key elements of the LRT network plan are provided in Attachment 1 and described as follows.

System Style

The City's land-use and transportation objectives would be most effectively delivered through the adoption of an urban style system that serves the communities around LRT, as well as suburban communities. An urban style approach to LRT delivery provides more direct servicing of key destination. It allows a better fit with land use plans to create Transit Oriented Development. By creating communities with more transportation choice, the City will move towards its goals for a liveable sustainable city.

New extensions to the LRT should be planned with shorter stop spacing and more community based stops. The existing system could evolve into a more urban style system over time by adding stations where warranted by land-use and demand.

Technology

The City of Edmonton opened its first LRT line in 1978 and was the first city in North America to develop a modern LRT system with the best technology available at the time. Low floor LRT vehicles became more prevalent in the late 1980's and this technology has evolved to become the standard for new LRT systems in Europe and North America.

With the exception of extensions to the current lines, the expansion of new LRT lines in Edmonton should be developed with low-floor vehicles. Low floor

vehicles allow for easier integration in mature areas by facilitating greater connectivity of people and place. Low floor vehicles provide a higher level of direct integration, smaller scale and more cost effective stations, and offer a scale that is easier to incorporate into existing road rights of way. A shift to low-floor vehicles is a move to the most current technology in the industry.

Network Lines

An assessment of the long term (100 year) regional population and employment growth provides a rationale for the number of LRT lines that should be considered for the ultimate LRT network as shown in Attachment 2 and includes:

- Northeast line and extension into the northeast area (beyond Anthony Henday Drive into the Horsehills area dependent upon land uses and development intensity).
- South line and extension to south of the city boundary near 41 Avenue southwest.
- Southeast line to Ellerslie area near Ellerslie Road and 50 Street.
- A single west line. The potential for two lines to the west was considered and determined that a single line is appropriate supplemented with premium bus service. Route alignment will be determined through the West LRT route selection process.
- LRT to the northwest to be determined through the route selection process. As in the west, high demand in this sector of the city may warrant development of a line to serve North Edmonton and another for St. Albert or a

combination of LRT and premium bus service.

- An east line to Sherwood Park is feasible in the long term, depending on demand and development in the County of Strathcona; however, it may not be warranted within the next 35 years.

Extent of Network

While the end-of-the-line for each route would be determined based on specific corridor studies and may evolve over time, an assessment of the LRT network in the long-term timeframe provides a good indication of the extent of each segment and logical destinations. Such destinations or “end of line” points would define the limit of the LRT and feature interchange points with future regional transit service. There are practical limits to the length of an urban LRT system and it is impractical to try to serve many of the outlying areas with an urban LRT. Growth in outlying communities, even in the long term, is unlikely to be sufficient to support LRT. Transit service to regional areas where demand warrants would best be provided in a different form such as rapid bus or commuter/regional rail.

Logical end points for LRT lines are near Anthony Henday Drive or city limits, with the exception of the Northwest line into the City of St. Albert and potentially the east line into County of Strathcona.

Downtown Tunnel Capacity

The existing tunnel has limited capacity to accommodate future LRT expansion. The amount of capacity required in the Downtown is dependent on the extent of

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the LRT network connecting into the existing track. Analysis indicates that in the long term, the tunnel can adequately accommodate the lines that are currently planned to use it; that is the Northeast line, the South line and a proposed extension to NAIT/Northwest. Addition of a fourth line will limit flexibility to meet long term ridership demand on these lines in the Downtown. The Downtown tunnel cannot accommodate the ultimate LRT network; therefore, new lines not connecting to the existing system will be physically independent from the existing system. Multiple rail lines with transfers are common in many large urban centers.

Central Area Circulation

The central area, including the Downtown and University, is the most transit supportive area of the city as it is a high density activity zone for both population and employment. All of the LRT routes serve the central area and interconnect there to provide multiple transfer and destination opportunities. New routes will operate in the downtown at the surface (street level), with convenient walking connections to the underground LRT stations.

An east-west LRT connection through the area of Strathcona can provide an improvement in overall operational flexibility and increase the carrying capacity of the network (Attachment 3). Details of route configuration, including river crossings, will require further assessment, some of which will occur through the West and Southeast corridor studies currently underway.

Complementary Initiatives

It is recognized that LRT is part of a wider package of transit investment, and the success of the overall LRT network is dependent on the provision of a number of supporting measures. Given the scale of LRT investment, the City will look to maximize the benefits by developing an integrated transit solution, including a review of bus services so they complement but not duplicate LRT extensions.

Development of other relevant policy and direction is underway, including the following reports also on the June 2, 2009 Transportation and Public Works Committee agenda:

- Integrated Transit Land Use Framework – Discussed in Report 2009TD8921.
- Premium Transit - Discussed in Report 2009TD7554.

Ridership and Priorities

Specific route alignments have not been determined therefore a detailed business case assessment of the individual segments of the LRT network has not yet been completed. However, a high level assessment of the network in the long-term timeframe provides an indication of ultimate ridership potential. Attachment 4 shows the magnitude of potential daily ridership for each LRT line. The range of daily ridership potential for each line is:

- | | |
|--------------|-----------------|
| • Northeast: | 70,000 - 80,000 |
| • Northwest: | 70,000 - 80,000 |
| • South: | 90,000 -100,000 |
| • Southeast: | 45,000 - 50,000 |
| • West: | 45,000 - 50,000 |

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- East: 20,000 - 30,000
- Tunnel (River Crossing): 120,000

Determination of priorities for LRT construction requires consideration of several factors in addition to projected ridership, including factors such as cost to build and operate, likelihood and potential timeline of land redevelopment opportunities, as well as funding availability. A detailed business case analysis defining construction priorities will be presented to City Council once the corridor studies have been completed.

Public Engagement

The Non-Statutory Public Hearing was advertised in the *Edmonton Journal* and *Edmonton Sun* on Tuesday, May 19, 2009 and Tuesday, May 26, 2009. In addition a Two Public Symposiums were held on May 13, 2009 and the report and background information was available on the City Web site in advance of the June 2 Non-Statutory Public Hearing.

Focus Area

This report relates to the focus area of Transforming Edmonton's Urban Form and Shifting Edmonton's Transportation Modes.

Justification of Recommendation

1. The key characteristics of the City Wide and Regional LRT Network Plan outlined in this report provide the philosophy necessary for future expansion of all LRT systems. The Network Plan provides the framework to help define the remaining LRT lines and offer opportunities for improvements to the existing LRT lines.
2. Inclusion of the elements of the LRT Network Plan in the Transportation Master Plan Update help to ensure the City's Vision is realized for LRT as identified in the Municipal Development Plan and Transportation Master Plan.

Attachments

1. LRT Network Plan Elements
2. LRT Network Plan
3. Central Area Circulation
4. Long Term Potential LRT Ridership

Others Reviewing this Report

- R.G. Klassen, General Manager, Planning and Development Department