

Valley Line LRT (Northwest)

Grade Separations

Recommendation:

That the April 13, 2016, Integrated Infrastructure Services report CR_3316, be received for information.

Report Summary

This report summarizes the need and feasibility of grade separation at key intersections along Phase 2 of the Valley Line and Metro Line.

Previous Council/Committee Action

At the September 2, 2015, Transportation Committee meeting the following motion was passed:

That Administration provide a report on the need and feasibility of grade separations at congested intersections along phase two of the Valley Line LRT line, specially 149 Street, 178 Street and 137 Avenue.

Report

The potential for grade separations at the 178 Street and 149 Street intersections along Phase 2 of the Valley Line, and 137 Avenue on the Metro Line were reviewed during previous LRT planning. Options for grade separations at the intersections on the Valley Line were presented to Transportation Committee through two reports: the January 21, 2014, Transportation Services report CR_649, Costs for West Edmonton Mall LRT Station and Overpasses(S. Mandel/K. Leibovici) and the March 11, 2011, Transportation Department report 2011TD4049, LRT Concept Planning Questions. The addition of a grade separation to an approved LRT line would require an amendment to the Transportation System Bylaw.

Valley Line - 178 Street

The previous work examined the steps and costs to provide an elevated guideway at 178 Street and 87 Avenue. The grade separation at this intersection would be an extension to the current planned elevated alignment adjacent to West Edmonton Mall. The conceptual cost would be approximately \$50 million (in 2013 dollars) for this guideway and additional impacts could include community concerns related to the extension of the elevated LRT. Performance of the traffic network would improve with a grade separation; however this was not recommended previously based on the incremental capital costs and community impacts.

Valley Line - 149 Street

Based on previous analysis the recommendation for a grade separation at this location was to use a tunnel under Stony Plain Road between 156 Street and 142 Street. The conceptual cost was estimated at \$300 million (in 2011 dollars) and would require significant property acquisition. It would also move the 156 Street station south of 100 Avenue and result in the need for an underground station at 149 Street. If the tunnel were shortened between 149 and 142 Street, the conceptual cost was estimated at \$150 million (in 2011 dollars). This would also require significant property acquisition and would require the 142 Street station to move further east. Similar to 178 Street the performance of the traffic network would improve with a grade separation; however this was not recommended previously based on the incremental capital costs and impact to Transit Oriented Development opportunities.

Metro Line - 137 Avenue

This location was reviewed as part of the Northwest LRT concept plan process. At the time the plan was approved, a station at 137 Avenue was selected so that it could be integrated into the development at Griesbach. During the concept planning process, a high-level review of traffic impacts and costs was evaluated. During conceptual planning a tunnel and underground station concept was developed with a conceptual estimate of approximately \$70 million (in 2012 dollars). A grade separation at 137 Avenue would offer improvements to the traffic network; however this was not recommended based on the potential impact to the Transit Oriented Development opportunities.

Grade Separation Needs Assessment

A number of options exist for crossings on the Valley and Metro Lines so it is recommended that a grade separation needs assessment be completed at key intersections once the next level of design is initiated. This includes updating the travel forecasting models for the sectors of the City served by these LRT lines. In addition, a review of the adjacent road network will be completed to assess network capacity and potential modifications to improve the overall traffic network performance. As the possible options are developed, they will be prioritized to determine which improvements provide the greatest benefit for transportation operations for all modes.

During the assessment opportunities to integrate the LRT line with adjacent development including the potential of leasing air rights will be investigated. Each location may have unique opportunities for integration with adjacent redevelopment to maximize Transit Oriented Development opportunities.

Policy

The Way We Move, Edmonton's Transportation Master Plan:

1. Strategic Action 4.1(b): Encouraging land uses that are compatible and complementary to the surrounding transportation network
2. Strategic Action 4.1 (c): Designing the transportation network to ensure it is compatible and complementary to the surrounding land uses

The Way We Live, Edmonton's People Plan:

1. Objective 1.3: The City of Edmonton integrates public transit with economic, social and recreational hubs

City Policy C565 : Transit Oriented Development

The City supports Transit Oriented Development that:

1. Establishes land uses around LRT stations and transit centres to reflect the characteristics of surrounding areas and each station or centre's role in the network.
2. Focuses medium and higher density residential, retail and employment growth around LRT stations and transit centres to support City investment in transportation infrastructure.
3. Creates a safe, direct and convenient circulation system for all modes of transportation, with an emphasis on public transit, pedestrians and bicycles that connects people and places.
4. Grows through collaboration, cooperation, partnerships, public information and education programs.
5. Increases transit ridership and reduces the number of automobile kilometers driven.

Public Consultation

No separate public engagement was completed for this report. However, extensive public consultation was completed during the concept planning for the Metro Line (2009-2013) and for both the concept and preliminary design for the Valley Line LRT (2009-2013).

Budget/Financial Implications

Capital costs for the construction of Phase 2 of the Valley Line are currently estimated to be \$1.8 billion dollars (in 2016 dollars). This does not include the grade separations, at 178 Street and 149 Street intersections, indicated in this report. Capital costs for the LRT expansion of the Metro Line from NAIT to Campbell Road are currently estimated to be \$1.6 billion dollars (in 2013 dollars). This does not include the grade separation, at 137 Avenue intersection, indicated in this report. There is currently no approved funding for either Phase 2 of the Valley Line LRT or the extension of the Metro Line LRT from NAIT to Campbell Road.

Others Reviewing this Report

- T. Burge, Chief Financial Officer and Treasurer, and General Manager, Financial and Corporate Services
- R. G. Klassen, General Manager, Sustainable Development
- D. Wandzura, General Manager, City Operations