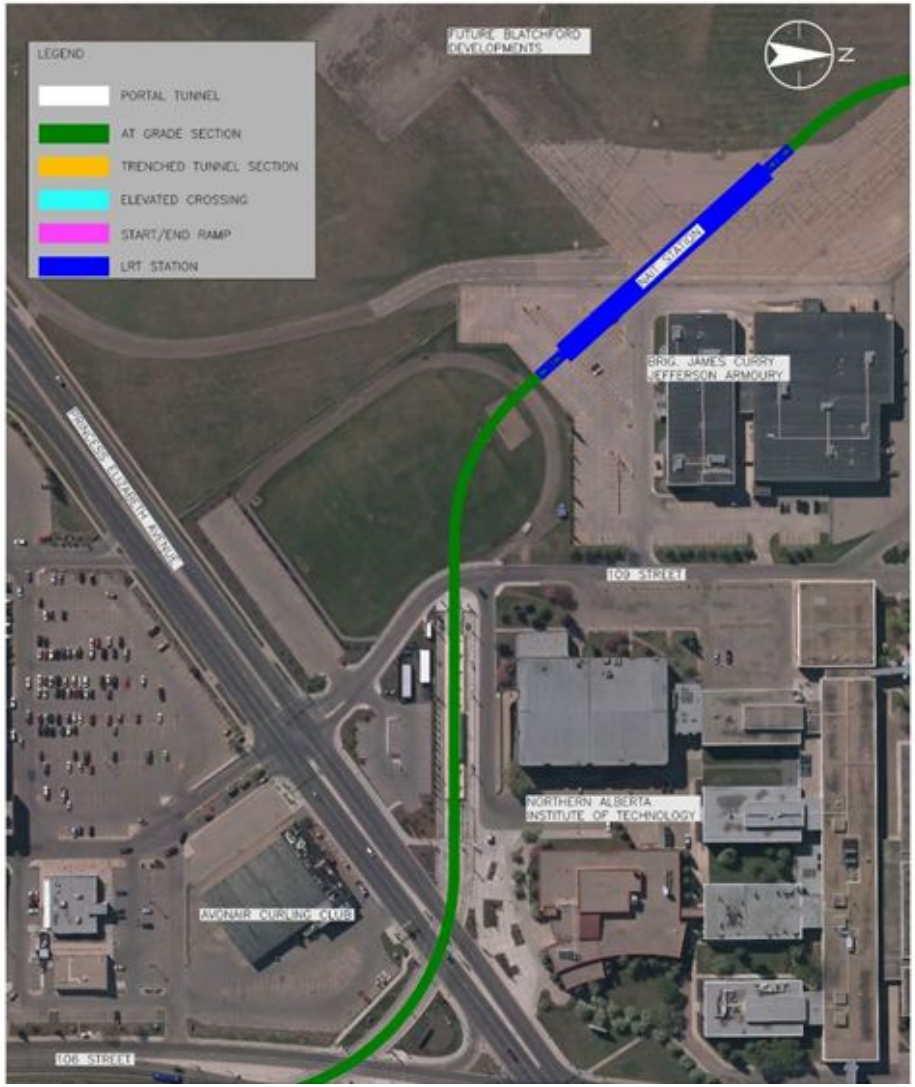
Princess Elizabeth Avenue and 106 Street - Crossing Assessment Summary

Princess Elizabeth Avenue and 106 Street Intersection

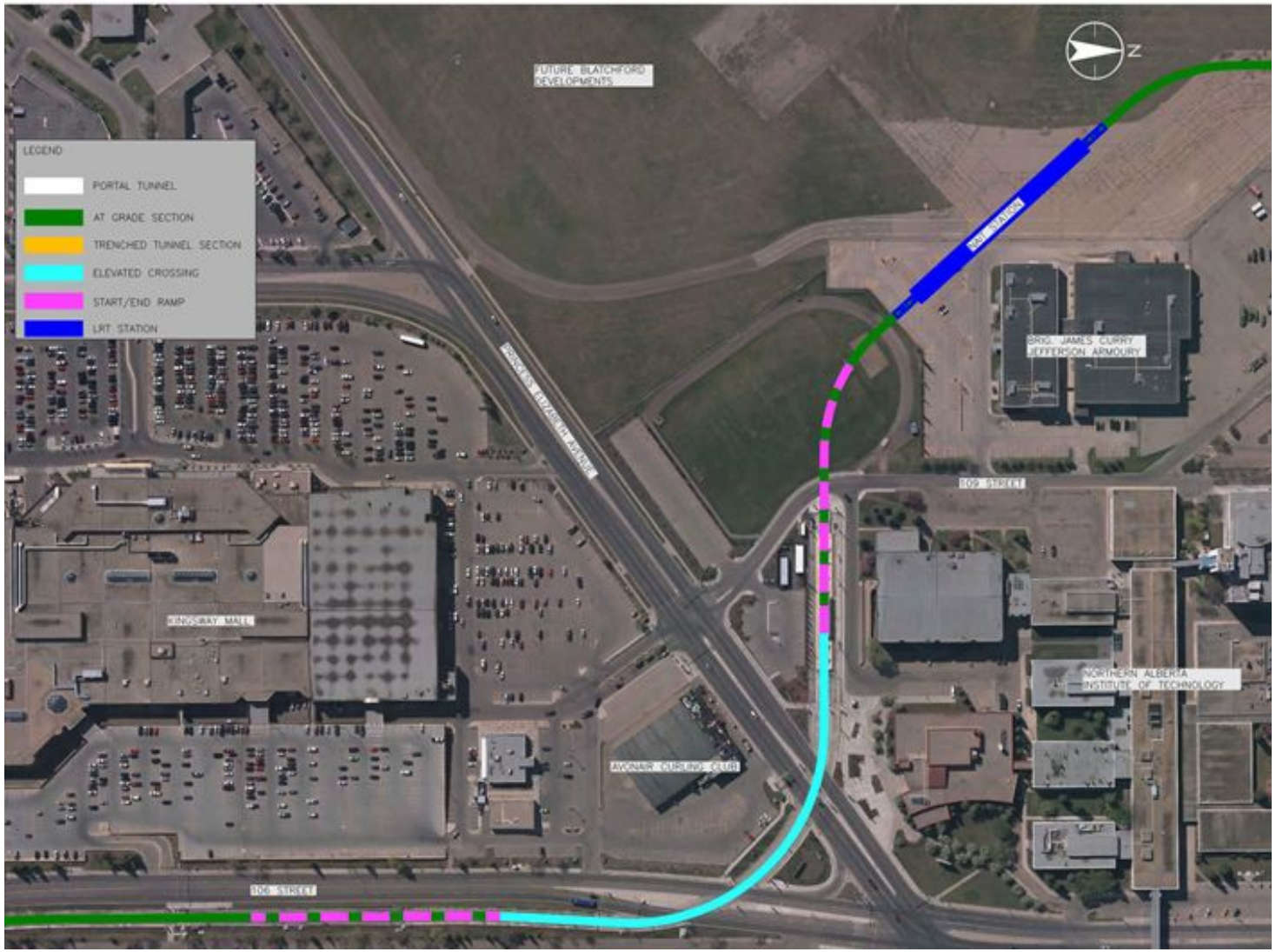
The intersection of Princess Elizabeth Avenue and 106 Street is located in the middle of a major destination point in north Edmonton. With the NAIT main campus and Kingsway Mall anchoring the northwest and southwest corners of this intersection, it is a moderately busy intersection along the Metro Line LRT alignment. Both NAIT and Kingsway Mall currently take access from Princess Elizabeth Avenue. As Blatchford develops, traffic volumes will increase along Princess Elizabeth Avenue.

The existing Metro Line LRT travels at-grade through the intersection of 106 Street and Princess Elizabeth Avenue to the temporary station at NAIT. The approved concept plan (Option A) maintains this alignment and constructs a new five car platform in Blatchford. Option A was scored against 3 other alternatives; Option B - Elevated crossing over 106 Street & Princess Elizabeth Avenue on approximately the existing alignment, Option C – Trenched Tunnel under 106 Street & Princess Elizabeth Avenue on approximately the existing alignment and Option D – A re-aligned LRT alignment with a new station within Kingsway Mall lands and crossing 106 Street approximately 150 metres south of the existing crossing.

When applying Phase 1 of the LRT Crossing Assessment Framework, the traffic volume impact scored low on the nomograph, but was just over the line to pass into Phase 2 screening. Preliminary traffic modelling results have shown only negligible to marginal traffic improvements at this intersection by implementing the alternative options. The traffic modelling results have demonstrated that the 111 Avenue crossing of the existing Metro Line currently sees higher traffic volumes and will continue to see higher traffic volumes than Princess Elizabeth Avenue in the future.

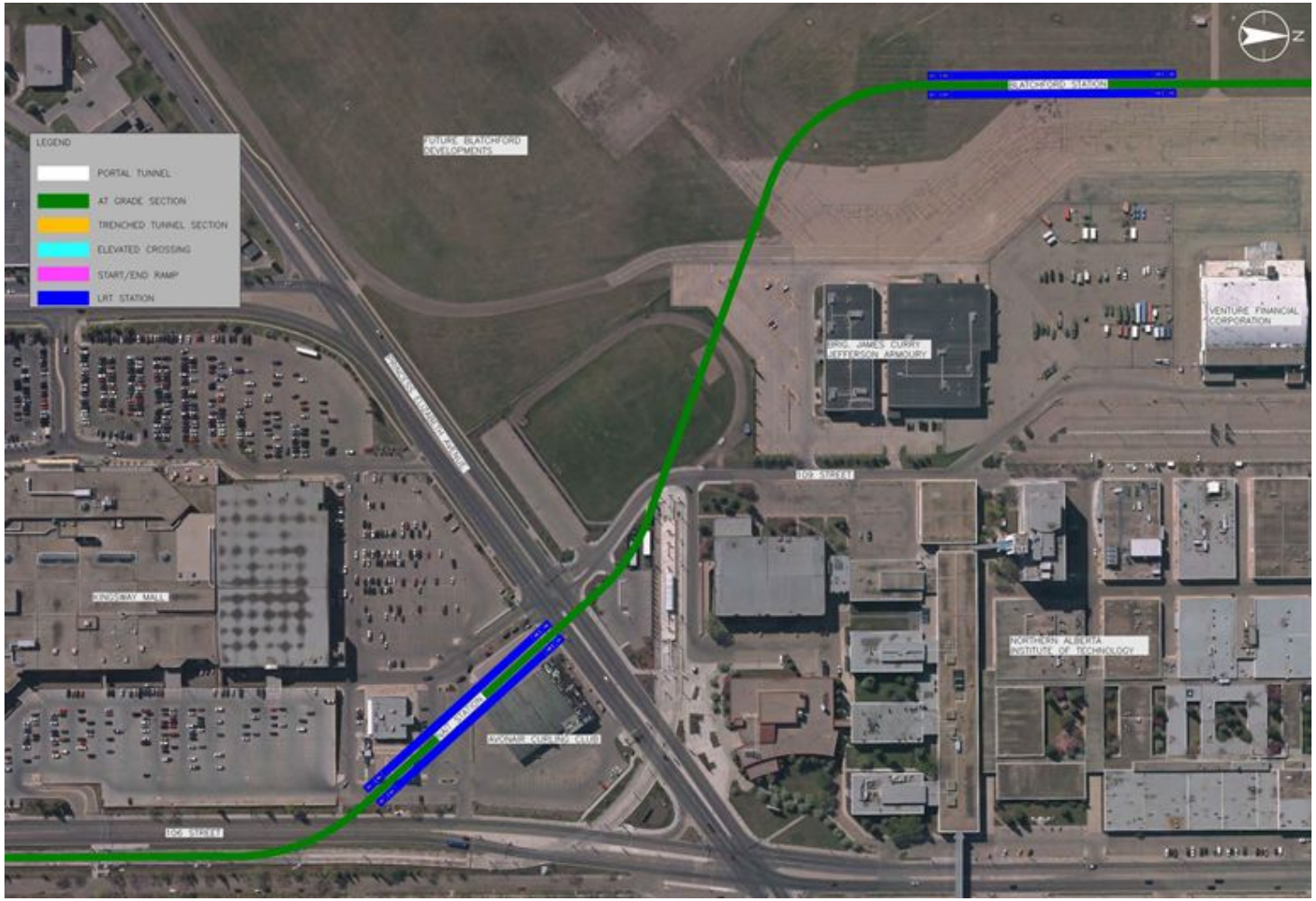


OPTION A – At-grade LRT on Existing Alignment (Status Quo)



OPTION B – Elevated LRT on Existing Horizontal Alignment

OPTION C – Trenched LRT on Existing Horizantal Alignment



OPTION D – At-grade LRT With Additional Kingsway Station (Horizontal Realignment)

The below table summarizes performance of the four design options in response to each of the assessment criteria.

	OPTION A - At-Grade LRT, Current Alignment	OPTION B - Elevated LRT Current Alignment	OPTION C – Trenched Tunnel LRT, Current Alignment	OPTION D – At-grade with new Kingsway Station, alignment 150m south of intersection
Accessibility	✔✔	✔✔	✔✔	✔✔
	● As this location is a major hub consisting of commercial, residential and institutional land uses the probability of the various transportation modes linking seamlessly at this location is very high for all criteria. Good access to existing properties is maintained and links between LRT and all other modes is accommodated in all options making this category a non-differentiator.			
Network Operations	✔✔	✔✔✔	✔✔✔	✔
	● Grade separated options scored highest in these criteria due to the fact that there may be a slight improvement in intersection operations. ● This intersection has seen improvements in operations with ongoing signaling refinements. Preliminary traffic modelling results have demonstrated only negligible to marginal traffic improvements at this location offered by the alternative options.			
Urban Design and Social Environment	✔✔✔	✔	✔✔	✔✔
	● Elevated guideway options are visually and physically more intrusive compared to an at-grade or trenched LRT crossing. The at-grade option scored highest for this category due to the fit with adjacent land uses, reduced barriers between communities, and public safety factors.			

Feasibility and Construction	✔✔✔	✔	✔	✔✔
	● Elevated and trenched options are higher cost compared to the at-grade option. The additional station at Kingsway adds to overall costs of an at-grade alignment. Concept level Cost estimates were developed at a high-level concept.			
Order of Magnitude Cost Estimate *(+/-50%)*	nil	An additional $55-$100 M (conceptual level estimate)	An additional $90-$130 M (conceptual level estimate)	An additional $50-$75 M (conceptual level estimate)
Overall Performance	✔✔✔✔	✔✔	✔✔	✔