

EXECUTIVE SUMMARY

The area of Highway 2 and Highway 566 at Balzac has vast potential for development now and for the near future. Recent developments such as the Cross Iron Mills Mall and area, has begun and will continue, necessitating the upgrading of the transportation network in the area. Specifically, the Hwy. 2 & 566 interchange will need more capacity to handle the growing traffic demand.

In 2005, Al-Terra completed an Access Management and Interchange Planning Study that identified a Parclo configuration with a loop in the northwest quadrant to meet long term traffic demands and scored the best in accommodating site concerns.

A Value Engineering Review by AECOM was completed in 2009. This entailed a review of the alternatives considered in Al-Terra's report to determine which alternative would provide the best value. This review considered the development of the Cross Iron Mills Mall in the southeast quadrant. Also, future development in the area become more clear as Area Structure Plans were prepared and the City of Calgary completed its annexation up to Hwy. 566, in the southwest quadrant. AECOM's review recommended a Parclo A configuration.

In late 2009, CIMA+ began a review of the previous recommendations due to concerns raised of the high construction costs, the existing bridge on Hwy. 566 was not being utilized for its remaining life, and an additional CPR level crossing would be required. Alberta Transportation had recently purchased the Jungle Plantation land parcel in the southwest quadrant which may allow for more options.

CIMA+ provided a review of the existing bridge on Hwy. 566. Upon assessment, the bridge can be fully functional to 2045 with a 2nd generation rehabilitation. Actual replacement of the bridge would likely occur in 2030.

In light of the remaining bridge life, CIMA+ explored options that included the existing bridge and still maintained capacity for the design life of 30 – 40 years. One of these options included a fly-over to north for WB to SB traffic, which reduced the intersection on Hwy. 566 to a 2 phase signal and required no widening on the existing bridge. The fly-over option, however, appeared to be costly and could be difficult for motorists to use as it required a non-conventional route of travel.

During this exercise and further discussion clarified that priority to traffic capacity for the interchange was Highway 2. Highway 2 is a freeway. It is crucial that traffic not back-up onto the freeway at locations such as off-ramps onto Hwy. 566.

With this in mind, previous options from AECOM's report and new options developed in-house by Alberta Transportation were assessed. Based on the combined factors of cost, ROW impact, environmental impact on Nose Creek; need to maintain Highway 2 as a freeway, land utilization, level of service, capacity and concern regarding the lack of weaving distance to the Cross Iron Mill Mall the **AECOM Parlco B** was finally recommended. It provides a 60 year design life by adding capacity via off-ramp loops and additional lanes of off-ramps. For other directions, especially on Hwy. 566, additional turning lanes can be added to increase capacity.

Staging was considered as part of the assignment. An Intermediate Stage concept was developed which involves utilization of the existing Hwy. 566 bridge and north ramps. The EB lanes and south half the interchange would have be fully developed at the intermediate stage. Some throw-away costs would be necessary for ramping between the EB and WB lanes.

A very general calculation of traffic growth at this location indicates that the Intermediate Stage may not last for even 10 years. The WB to SB direction appears to fail prior to this. Since it is undesirable to widen the existing bridge as it is not part of the Ultimate Plan, it may be beneficial to proceed directly to the Ultimate Stage now.

The estimated cost in 2009 dollars is \$94,735,000.