EXECUTIVE SUMMARY

This document summarizes the planning and engineering studies undertaken to date for the proposed grade separation of 23 Avenue over Calgary Trail/Gateway Boulevard and CP Tracks. The document outlines the project objectives, interchange alternatives considered, the recommended interchange alternative and justifications for the recommendation. Refer to the document titled "*23 Avenue Interchange: New Costs and Alternative Option Report*" for details of the alternatives and evaluation.

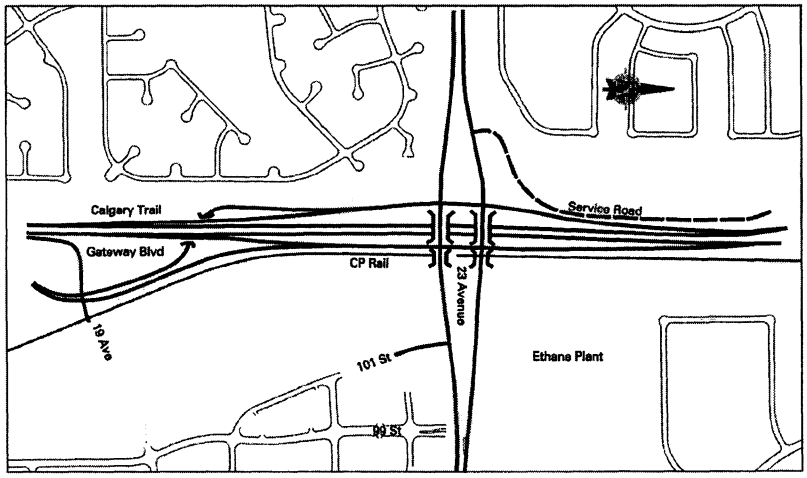
1.0 Project Objectives

The key Objectives for grade separating 23 Avenue over Calgary Trail/Gateway Boulevard and CP Tracks are:

- Provision for free-flow traffic along Gateway Boulevard/Calgary Trail (GB/CT) from Anthony Henday Drive to north of 23 Avenue, in accordance with the City Transportation Master Plan.
- Manage congestion at the 23 Avenue/GB-CT intersection and along the intersecting roadways now and in the long term.
- Maintain all existing traffic movements at the 23 Avenue intersection.
- Maintain all existing traffic movements at the 19 Avenue intersection (as per ASP).
- Provide pedestrian and cyclist connections across the 23 Avenue/GB-CT intersection.
- Improve safety at the 23 Avenue/GB-CT intersection and along the intersecting roadways.
- Make provision for possible future LRT along 23 Avenue across GB/CT.
- Minimize community and business impacts on the adjacent residential, commercial and industrial land uses during and after construction.
- Ensure that the project can be constructed in staged manner, accommodating the existing traffic demand providing for 3 traffic lanes in each direction along GB/CT and 2 traffic lanes in each direction along 23 Avenue, at all times.

2.0 Concept Planning Study/ Preliminary Engineering

The Concept Planning Study evaluated five interchange alternatives using the Project Objectives as evaluation criteria. Alternatives evaluated included loop ramp in the southwest or northwest quadrant, and variations of diamond interchanges. The Planning Study recommended a split diamond configuration as best meeting the project objectives. In the preliminary engineering phase, the recommended design (shown below) has been modified to better meet engineering guidelines. The project is estimated to cost $107M (2005$).



3.0 New Interchange Alternatives and Cost Estimates: Evaluation & Conclusions

In light of the cost escalation and budget constraint, a review was undertaken to evaluate new interchange alternatives as well as the potential of staging the construction of the interchange. This is based on the concept that only the minimum needed is built right now and add-on construction in the future when the traffic growth requires the expansion.

Five alternatives were evaluated. Table 1 compares the five new alternatives to the recommended alternative from the preliminary engineering design. The results can be summarized as follow:

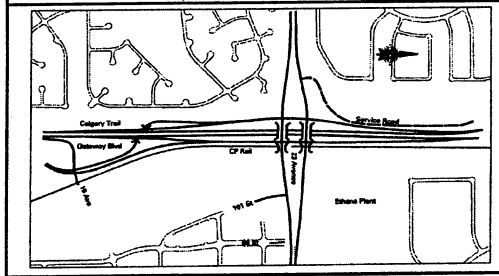
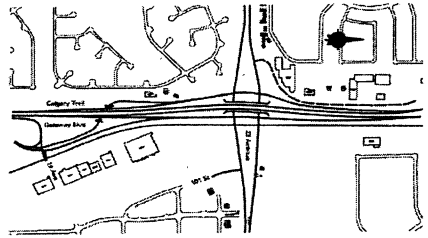
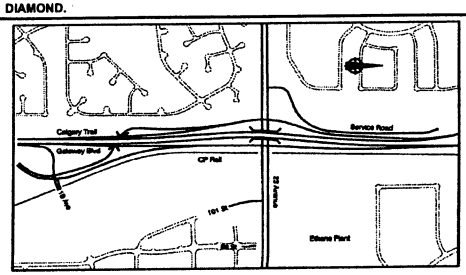
- Construction of the recommended interchange alternative can be staged to reduce initial capital investment costs. Cost savings range from $4M to $18M.
- The staged alternatives do not meet all project objectives, most significantly the at-grade railway crossing will remain.
- Operationally the staged interchange will fail in 10 to 20 years, as opposed to at least 50 years for the recommended alternative.
- Expansion of the interchange required in the future will cost $32M to $100M. The construction required varies from expansion of the interchange, to requiring an additional bridge, to total reconstruction of the interchange, depending on the alternative selected.
- Major traffic disruptions and complicated construction requirements are inevitable.

4.0 Conclusions and Recommendation

Life Cycle Costing methodology was used to evaluate the cost effectiveness of all the alternatives. Results clearly indicate that the recommended alternative from preliminary engineering design is the most cost effective alternative. Option 2 and 4 as shown in Table 1 may have lower initial capital investment costs, but both Options have higher overall net present value in order to meet the long term requirements. These two Options, in addition, will lead to a second major traffic disruption along Calgary Trial/Gateway Boulevard and 23 Avenue when the upgrading of the interchange is required 10 to 20 years from now.

As such, the preliminary engineering design alternative remains the recommended interchange alternative.

Table 1 23 Avenue Interchange
Option Comparison Matrix

Interchange Concept		COMPARISON CRITERIA: Provides Free Flow Movement on GB/CT	Relieves congestion at Gateway/23 Ave intersection for at least 20 yrs.	Relieves rail related congestion along 23 Ave for at least 20 yrs with rail overpass or underpass	Maintains all existing turn movements at Gateway Blvd/23 Ave	Maintains all existing turn movements at Gateway Blvd/19 Ave	Allows for future LRT extension along 23 Ave	Minimizes impact on residential communities	Minimizes impact on adjacent businesses	Comments	Cost Relative to APPROVED PLAN
1 SPLIT DIAMOND WITH 23 AVE OVER GB/CT and CPR AND SBO 19th AVE ACCESS UNDER GB/CT (APPROVED BY CITY COUNCIL)											
		✓	✓	✓	✓	✓	✓	✓	✓	1. Meets long-term traffic needs 2. Accommodates future LRT	$0
2 STAGED SPLIT DIAMOND - STAGE 1: 23 AVE AT GRADE, GB/CT GOES OVER 23 AVE. STAGE 2: GRADE SEPARATE 23 AVE AND CPR											
	STAGE 1	✓	✓		✓	✓			✓	1. Raising GB/CT over 23 Ave will raise significant community concerns over traffic noise and aesthetics. 2. Existing at-grade railway crossing creates congestion and will deteriorate further in the future.	-$12M
	STAGE 2	✓	✓	✓	✓	✓	✓			1. Highly challenging traffic accommodation during construction; severe impacts to lower 23 Ave. 2. May not be feasible to lower CPR. 3. Accommodating LRT will require grade separation with CPR.	+$32M
3 SIMPLE DIAMOND WITH GB/CT GOING OVER 23 AVE WITH 23 AVE REMAINING AT-GRADE AS STAGE 1. STAGE 2 - DEMOLISH AND RECONSTRUCT AS A SPLIT DIAMOND.											
	STAGE 1	✓			✓	✓			✓	1. Raising GB/CT over 23 Ave will raise significant community concerns over traffic noise and aesthetics. 2. Existing at-grade railway crossing creates congestion and will deteriorate further in the future. 3. Operationally, breaks down between 10 and 20 years.	-$18M
	STAGE 2	✓	✓	✓	✓	✓	✓			1. Total reconstruction required in the future to accommodate future traffic demand. 2. Traffic management for stage 2 will be very challenging and disruptive.	+$100M

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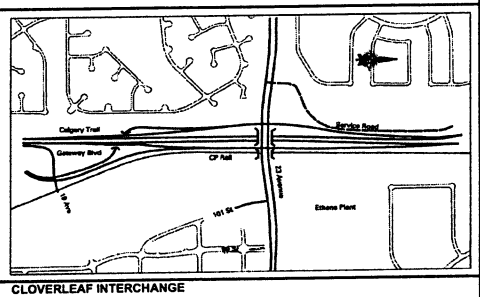
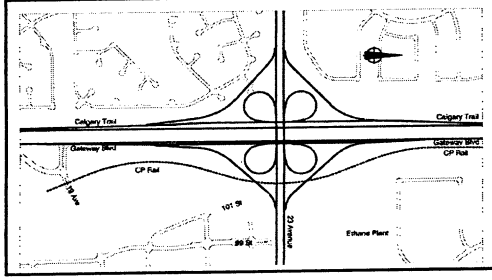
4 SIMPLE DIAMOND WITH 23 AVE GOING OVER GB/CT AND CPR AS STAGE 1. STAGE 2 - ADDITIONAL WORK TO CONSTRUCT SPLIT DIAMOND.											
	STAGE 1	✓		✓	✓	✓	✓	✓	✓	1. Provides only 10-15 years of congestion relief. 2. Costly and disruptive to upgrade in future.	-$4M
	STAGE 2	✓	✓	✓	✓	✓	✓	✓	✓	1. Additional construction required in the future to accommodate future traffic demand. 2. Throw away cost estimated at $6.5M.	+$20M
5 CLOVERLEAF INTERCHANGE											
		✓	✓	✓	✓		✓			1. Not possible to provide access to SEC at 19th Ave and 101 St. 2. Operational problems between loop ramps and safety concerns. 3. Rail relocation not likely to be acceptable to CPR. 4. High property requirements and costs.	+$113M