



COMPLETING THE CALGARY RING ROAD

Presented By: Andrew Connell

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Presentation Overview

1. Project Overview
2. Bid and Execution Timeline
3. Key Design Element
4. Construction Challenges
5. Final Product
6. Questions



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Project Overview



Over 50 years of Planning, Design and Construction

- 1950's – Initial discussions about a Ring Road around the City of Calgary started in the 1950's with
- 1970's – Planning, land acquisition and early design work
- 1990's – Construction on the first sections of Northwest Stoney Trail
- Officially, major Stoney Trail Projects started in the 2000's.
 - Northwest Stoney Trail (opened 2009)
 - Northeast Stoney Trail (opened 2009)
 - Southeast Stoney Trail (opened 2013)
 - Tsuut'ina Trail (part of Southwest Calgary Ring Road) (opened 2020)
 - Remaining Southwest Calgary Ring Road (opened 2021)
 - West Calgary Ring Road (opened December 2023)
- Completed full circle of 101 km of free flow ring road around the City of Calgary



West Calgary Ring Road

Located between Highway 1 and Highway 8 along the back of Springbank Hill, the full project included 9 km of 6 and 8 lane divided highway, 6 interchanges, and 24 bridges.

The full project was split into three separate projects:

1. North Segment
2. South Segment
3. Bow River Bridge Twinning/Widening Segment

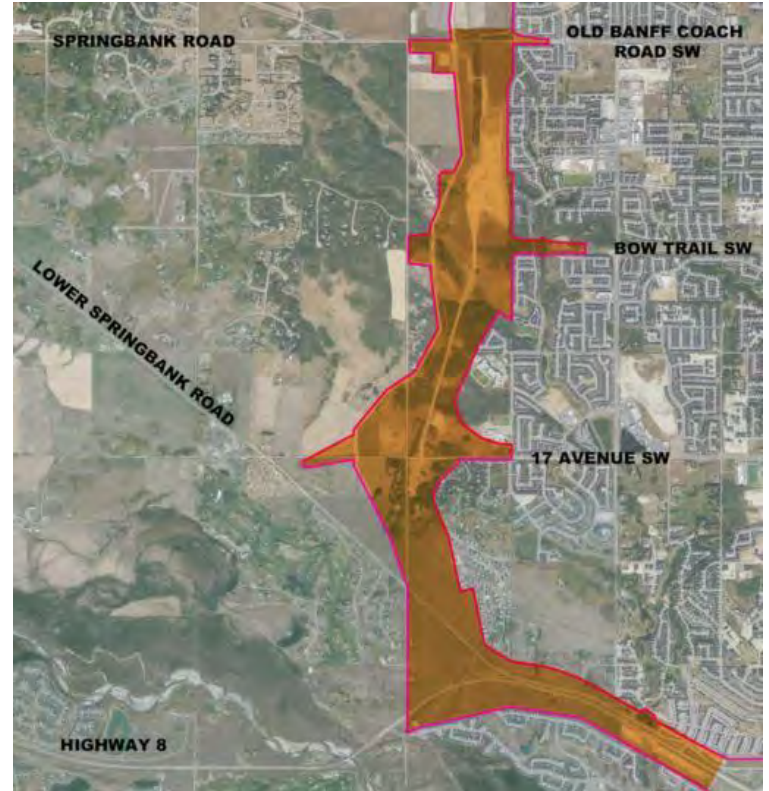
The North Segment and the Bow River Twinning involved upgrading of the existing network while the South Segment, provided the final connection to complete the Ring Road around the City of Calgary

The focus of this presentation is on the South Segment



West Calgary Ring Road – South Segment

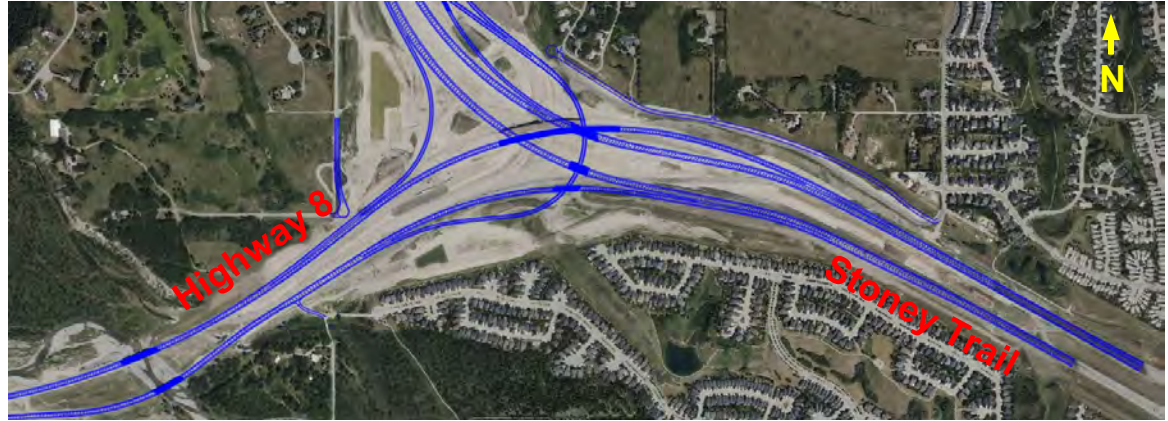
- This segment is approximately 4 km of 6 and 8 lane divided freeway
- Four interchanges
 - Old Banff Coach Road (Half Interchange)
 - Bow Trail (Full Parclo A4 Interchange)
 - 17 Avenue (Half Interchange)
 - Highway 8 (Free-flow Systems Interchange)
- Total of 8 bridge structures including a pedestrian underpass
- Cut and fill sections of 10-15 m resulting in over 8,000,000 cubic metres of earthwork moved on site



Planning for the Future – Pre-Bid Plans at Highway 8

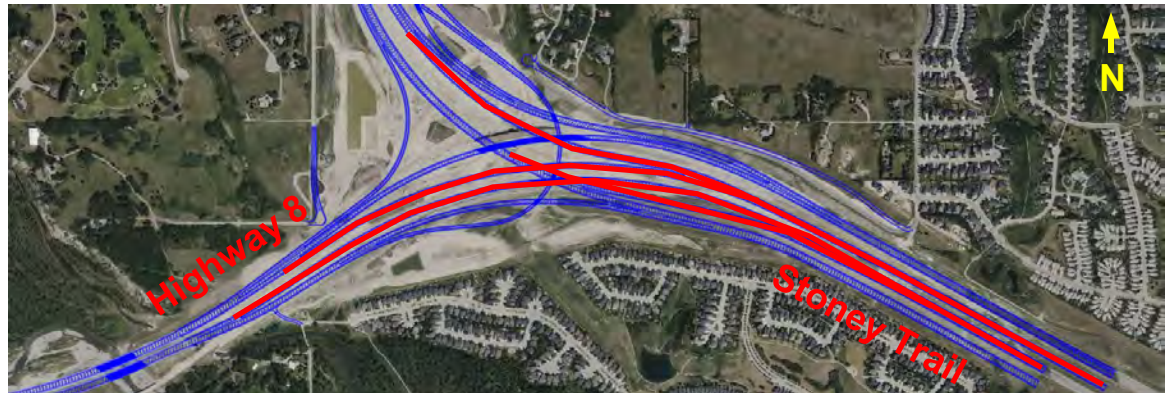
Stage 1 Plan

- Primary lanes of Stoney Trail are constructed completing the Ring Road



Ultimate Stage Plan

- Primary movement is maintained on Stoney Trail as it curves



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Project Timeline



Project Schedule

- Issued for RFQ – March 2019
- Shortlisted Proponents Announced – August 2019
- RFP Technical Submission Original Deadline – February 2020
- Start of COVID 19 Pandemic – March 2020
- RFP Process Completed – All submissions – May 2020
- Notification of Preferred Proponent – May 2020
- Traffic Availability for Bow Trail and Old Banff Coach Road Interchanges to the North – September 29, 2023
- Traffic Availability for 17 Ave and Highway 8 Interchanges (full project) – December 19, 2023
 - **10 months ahead of schedule!**

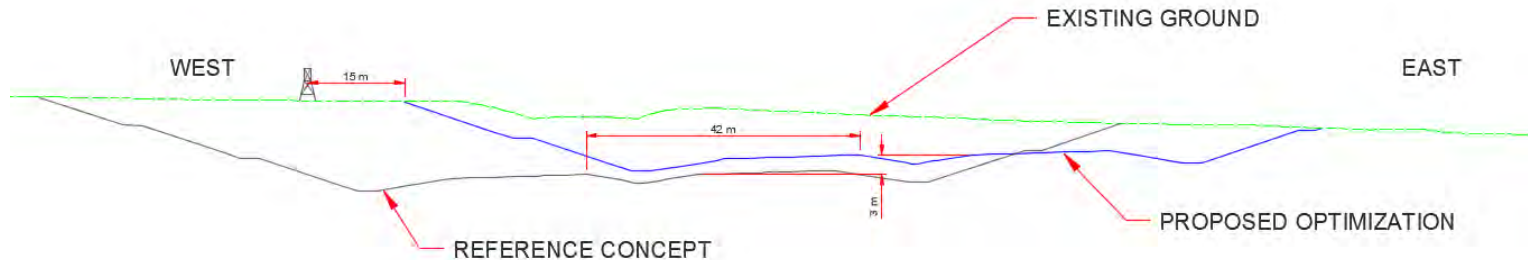
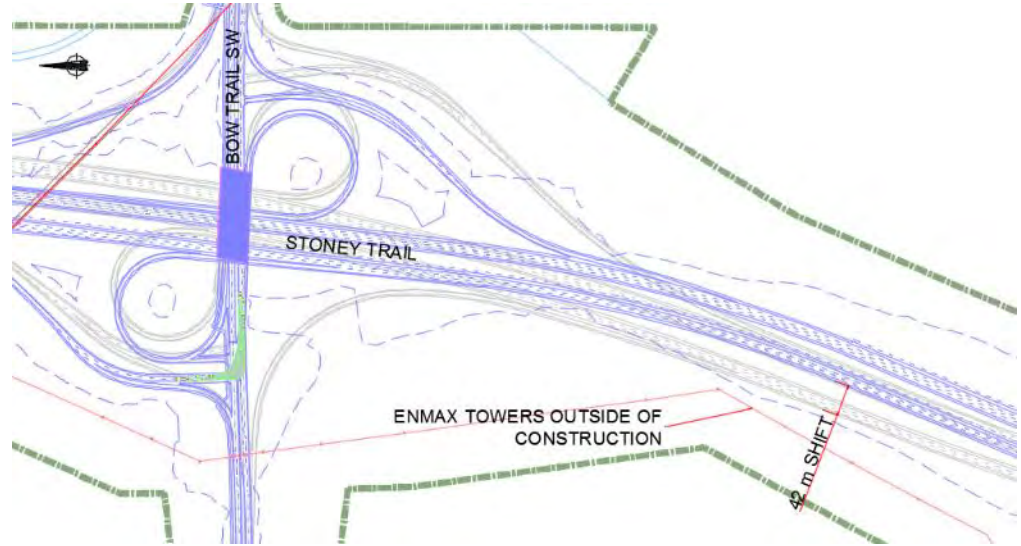
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Key Design Elements



Mitigating Utility Impacts

Between 17 Avenue SW and Bow Trail SW, the alignment was shifted by 42 m to the east to avoid the ROW of ENMAX towers along the west cut slope.



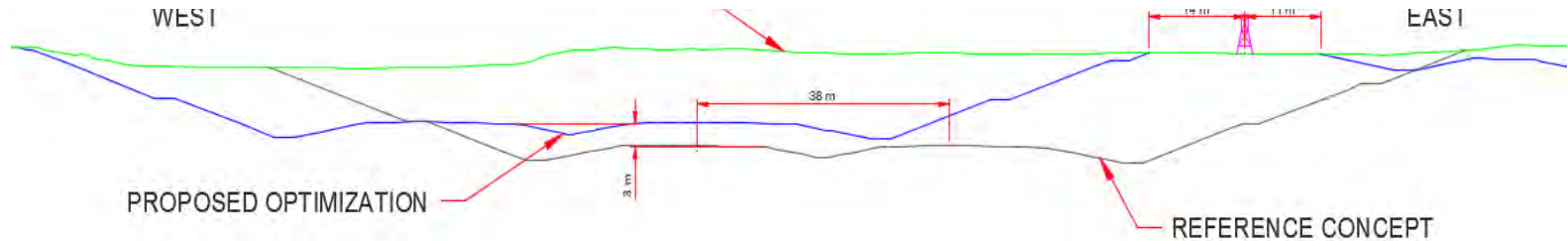
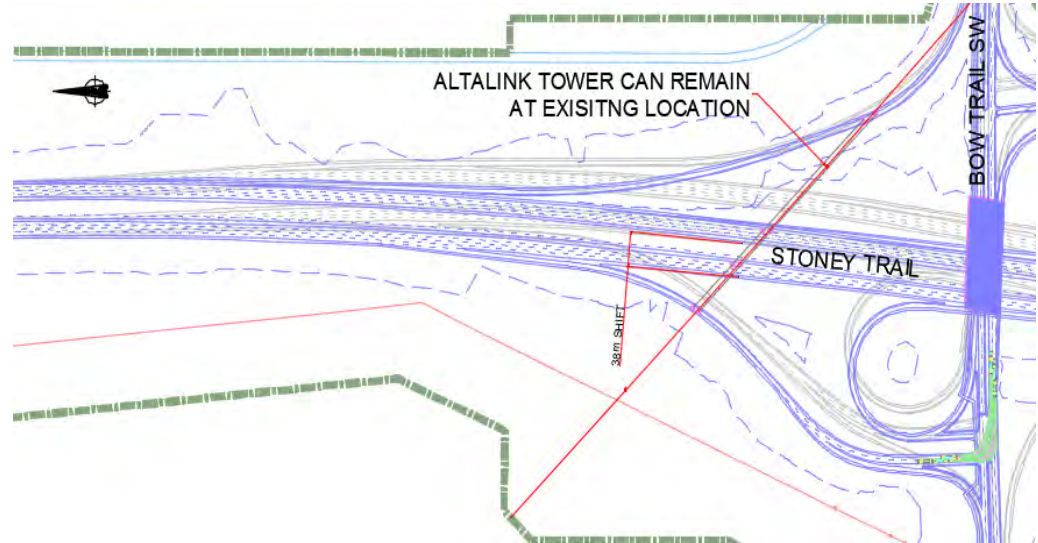
Mitigating Utility Impacts

- This realignment moved the construction limits to the east to avoid the line of ENMAX towers along the west side of the Transportation and Utilities Corridor (TUC). This eliminated scheduling conflicts and constraints that might have occurred relating to relocation of this ENMAX power line and towers.



Mitigating Utility Impacts

On the north side of Bow Trail SW, the alignment was shifted to the west by 38 m to prevent impacts to the AltaLink transmission tower by keeping it outside of the cut slope.



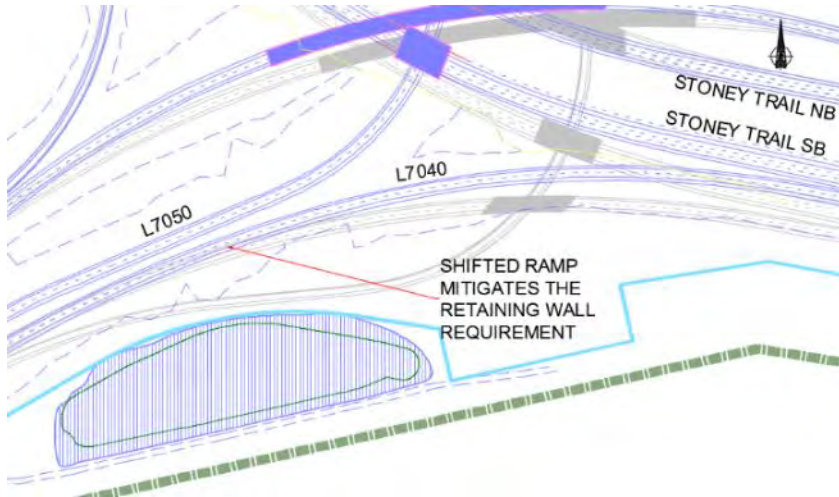
Mitigating Utility Impacts

This realignment, allowed for the construction of this interchange without impacting the AltaLink tower. This eliminated scheduling conflicts and constraints that might have occurred relating to relocation of this AltaLink tower.



Reducing Bridge and Retaining Wall Requirements

Design revisions converted this ramp to meet users' expectation that left lanes would go left (north) and the right lanes would go right (south). This shifted the ramps much further away from the storm pond south of the interchange and increased the ramp radius for improved safety at the desired posted speed



Reducing Bridge and Retaining Wall Requirements

This eliminated one bridge and two retaining walls. The revised location of the Southbound Stoney Trail bridge over the under passing ramp eliminated the requirement to accommodate future tapered widening on the bridge, which is costly and challenging for both design and construction.

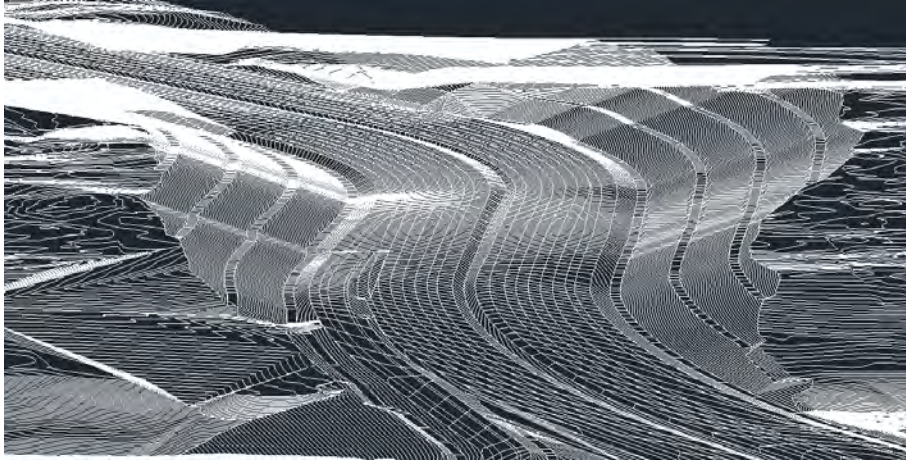


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Construction Challenges



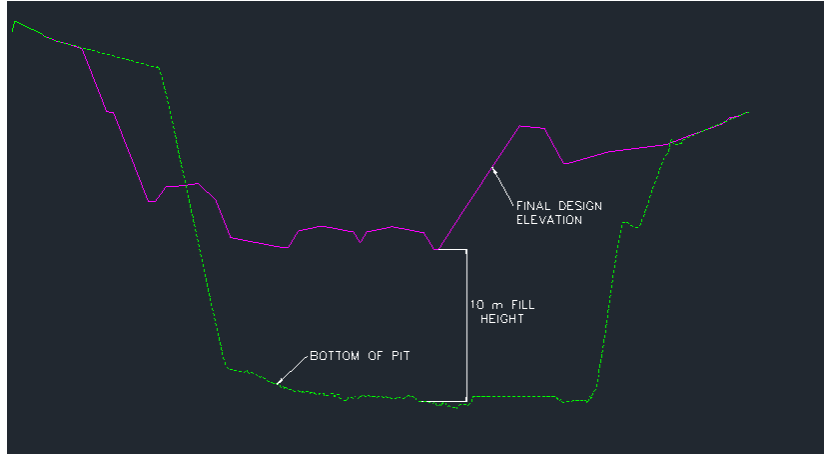
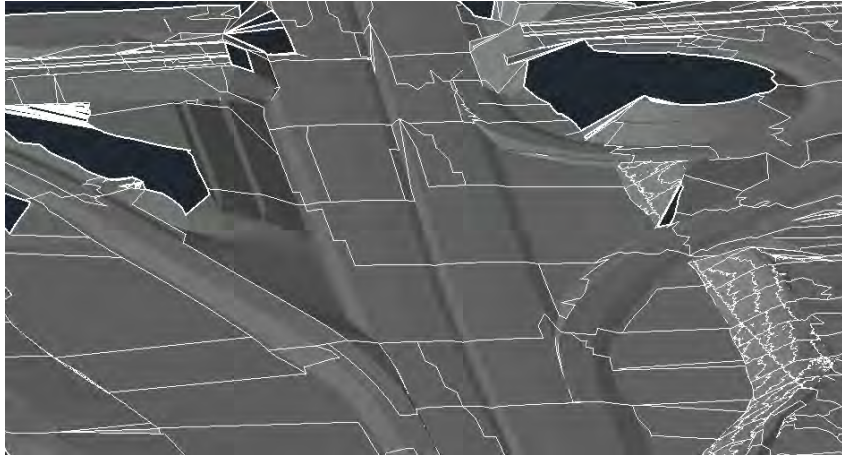
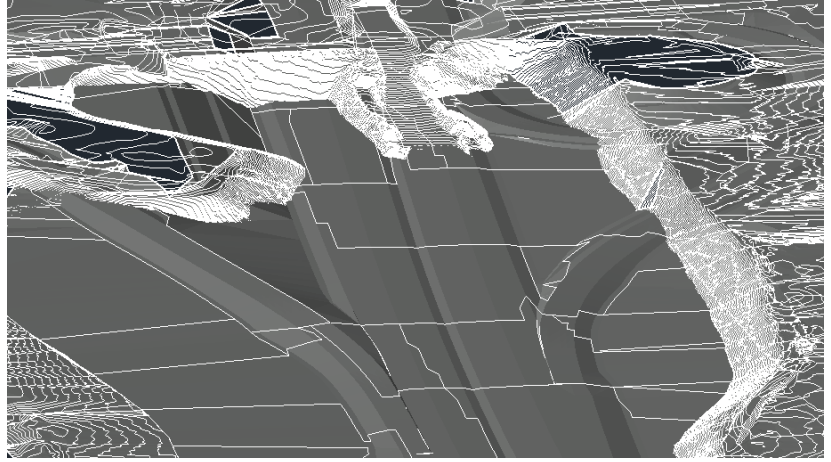
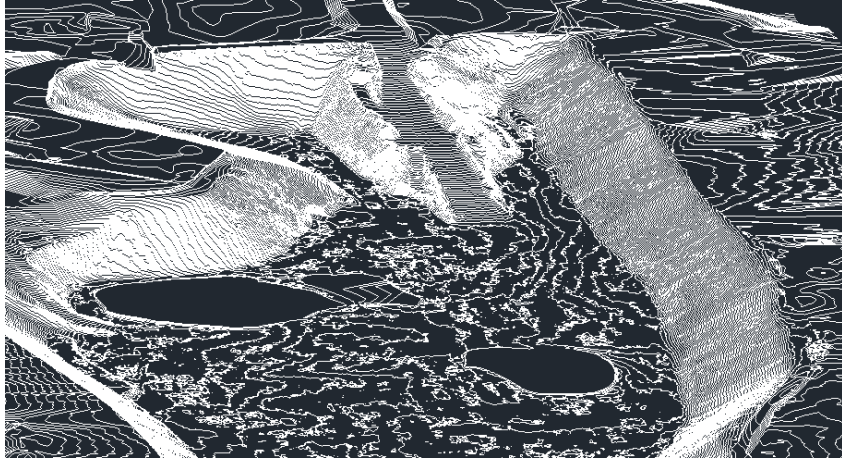
Climbing the Springbank Hill



- Maximum 5% grades on Stoney Trail
- Cut Conditions exceeding 15 m in height
- 3:1 side slopes with 3 m wide benches used for every 5 m height of cut



Filling in the Southwest Calgary Ring Road Gravel Pit



Constant Earth Moving Traffic

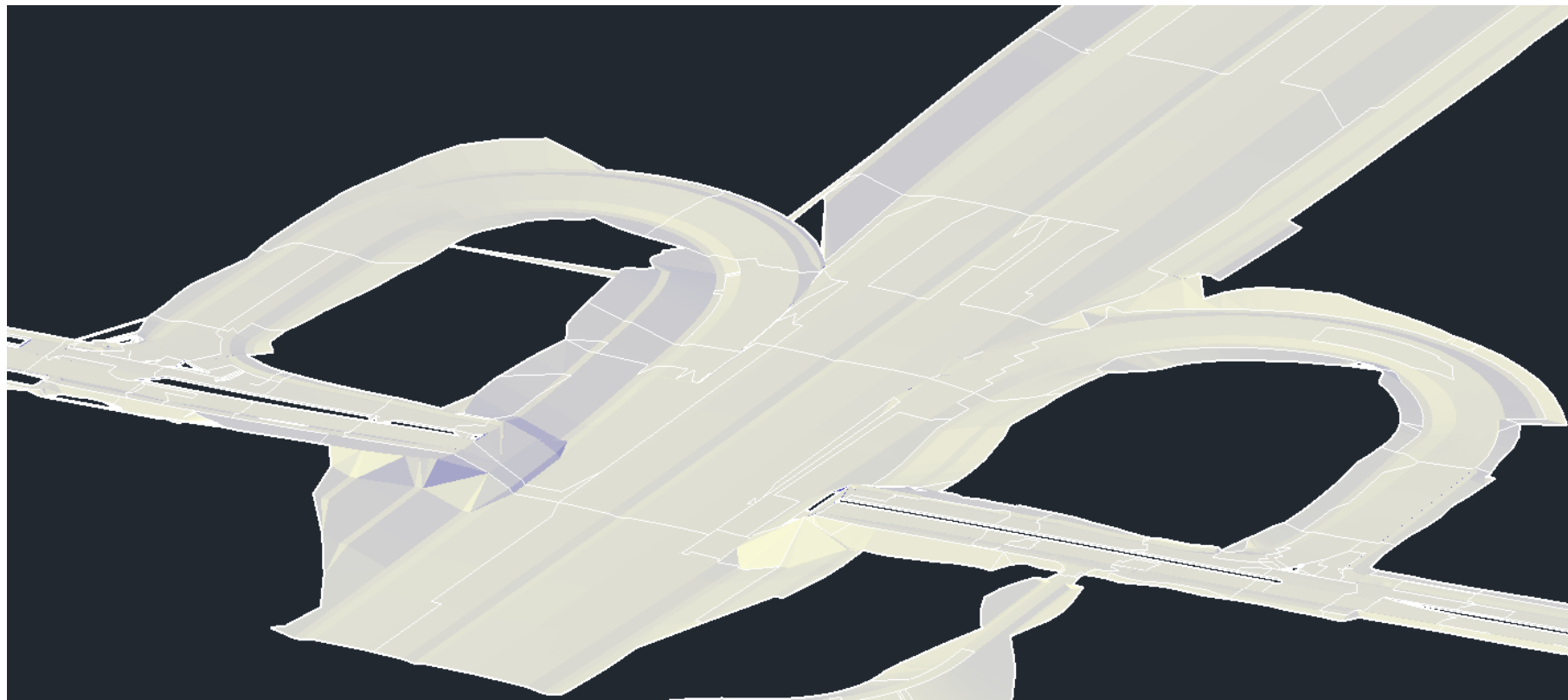


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Final Product



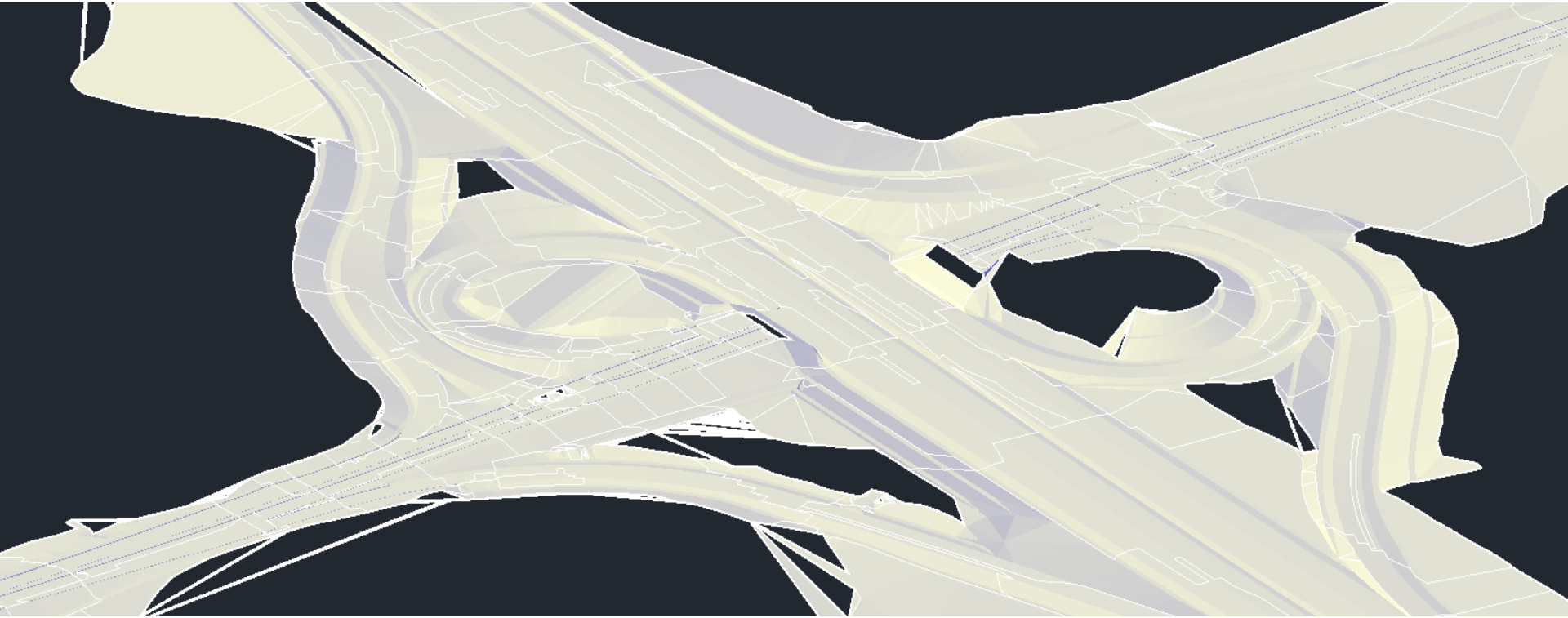
Old Banff Coach Road SW Interchange



Old Banff Coach Road SW Interchange



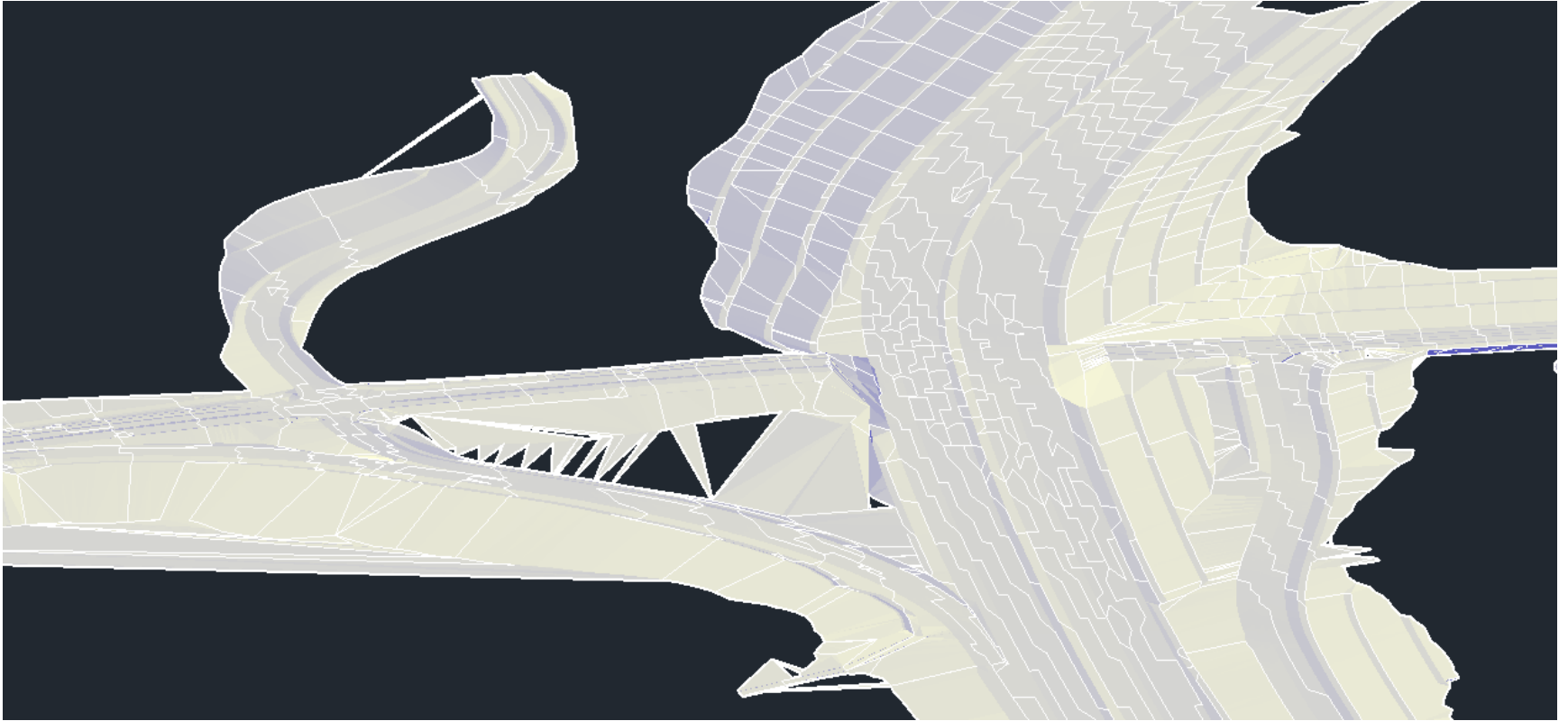
Bow Trail SW Interchange



Bow Trail SW Interchange



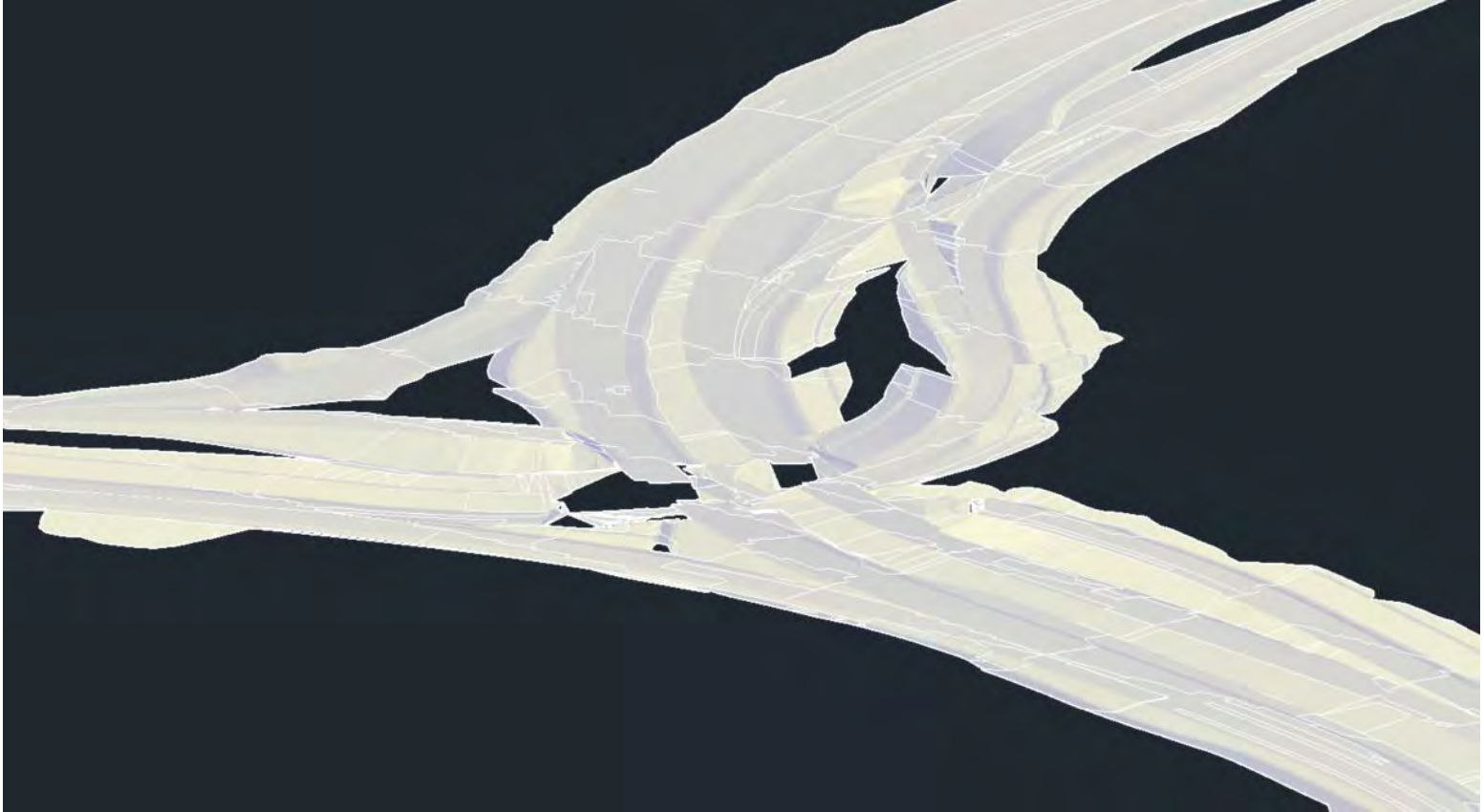
17 Avenue SW Interchange



17 Avenue SW Interchange



Highway 8 Interchange



Highway 8 Interchange



Benefits to Society

1. Enhanced safety due to grade separations and reduced congestion on local roads.
2. Economic growth corridor supports Taza Developments and Tsuut'ina Nation.
3. Smoother traffic flows for both commuter and commercial vehicles resulting in significantly reduced travel times between NW and SW Calgary.
4. Reduced greenhouse gas emissions by reduced congestion on other primary routes—in particular, idling at intersections on Sarcee Trail, reduced vehicle running time for travel time between NW and SW quadrants of the city.
5. Reduced noise propagation into neighbourhoods with depressed gradeline design providing natural noise mitigation.
6. Better access to urban services for citizens of Rocky View County.
7. Provided opportunity for economic development within Rocky View County on the west side of this project.
8. Completed the full ring around Calgary, which was first envisioned over 70 years prior.



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Questions?

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Thank you!

