

Integrated Infrastructure Services
Infrastructure Planning and Design

Terwillegar Drive Improvements

Urban Planning Committee
October 2, 2018



Council Approved Motion

That Administration:

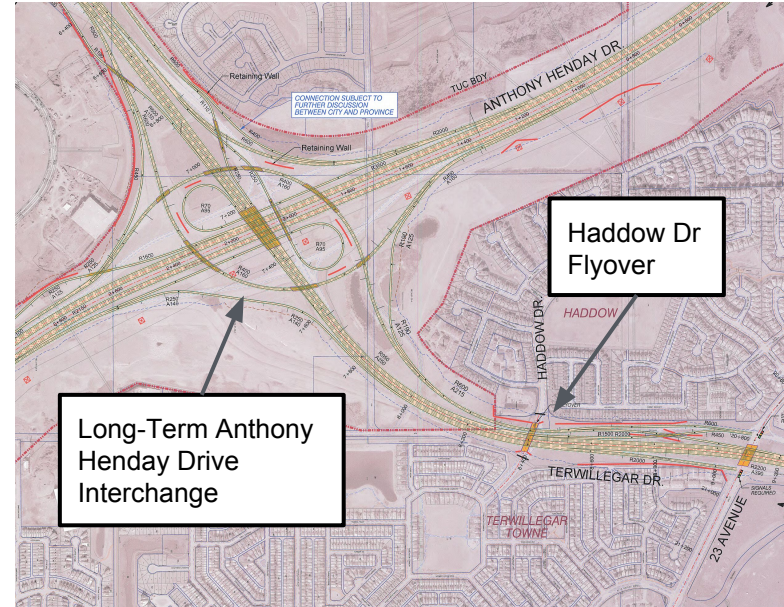
1. **Suspend** any **public engagement** activities regarding the ultimate long term Terwillegar Drive/Whitemud Drive interchange and any roadway modifications that may limit access in the interim.
2. **Optimize the concept plan** for the Terwillegar corridor between Whitemud Drive and Anthony Henday Drive, including provision for opportunities of mass transit and active transportation.
3. Advance the Preliminary **Design for Terwillegar Drive/40 Avenue interchange**.
4. Advance the Preliminary Design for an **optimized Stage 2 of the Whitemud Drive/Terwillegar Drive** interchange, with consideration for reduced design parameters (i.e. design speeds) with the intent of reducing overall complexity and cost.
5. Continue to advance preliminary **design on the basis of a number of \$75-100M packages** in support of staged completion of the Terwillegar corridor, including full access for Rabbit Hill Road, 23 Avenue, and Haddow Drive.
6. **Present a list of potential shared funding opportunities** with the provincial and federal government that take advantage of infrastructure and innovation funding.
7. and bring back a report to Council in third Quarter 2018 summarizing progress on the aforementioned design elements.

Terwillegar Drive History

- Planned and constructed in the 1980s and intended to be a freeway
- Planning and design studies: 2001, 2007, 2012, 2014 and now
- Construction upgrades in 2006/7, 2010, and upcoming

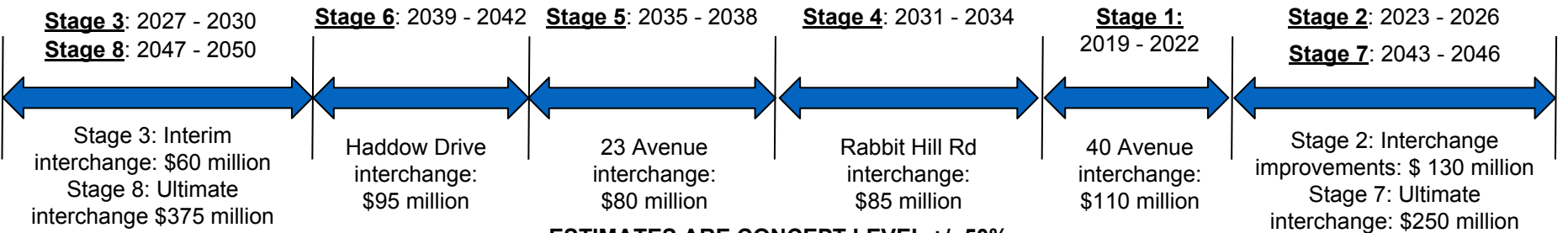
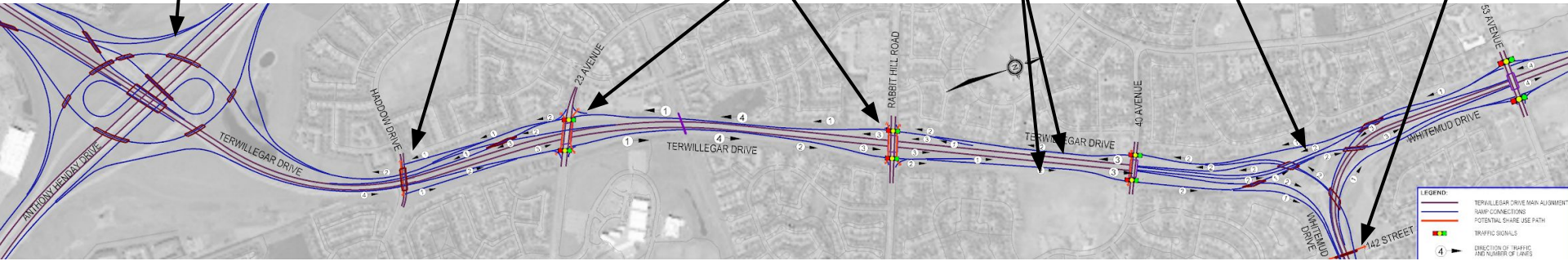
Issues and barriers:

- Capital cost
- Access limitations
- Community Impacts



Freeway Plan

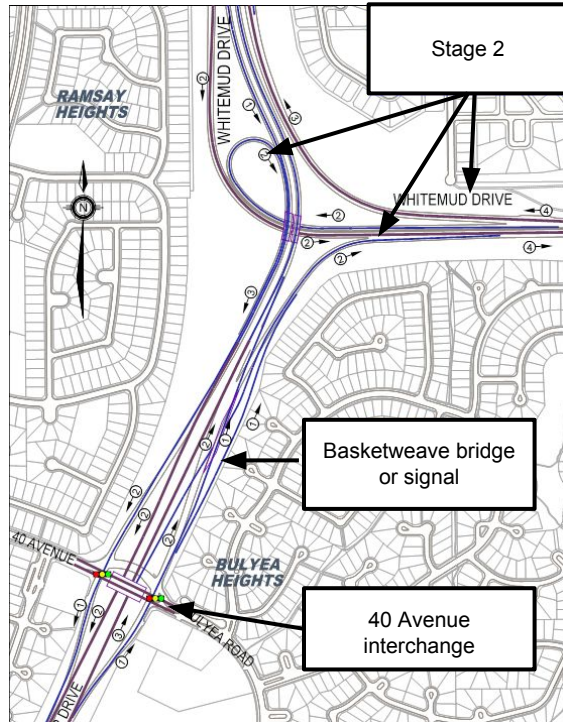
- Ultimate Anthony Henday Drive Interchange
- Haddow Drive: Potential access only on the north side
- East/west shared-use path connections across bridges
- Transit on shoulders
- Ultimate Whitemud Drive and Terwillegar Drive interchange
- 142 Street pedestrian/cyclist bridge



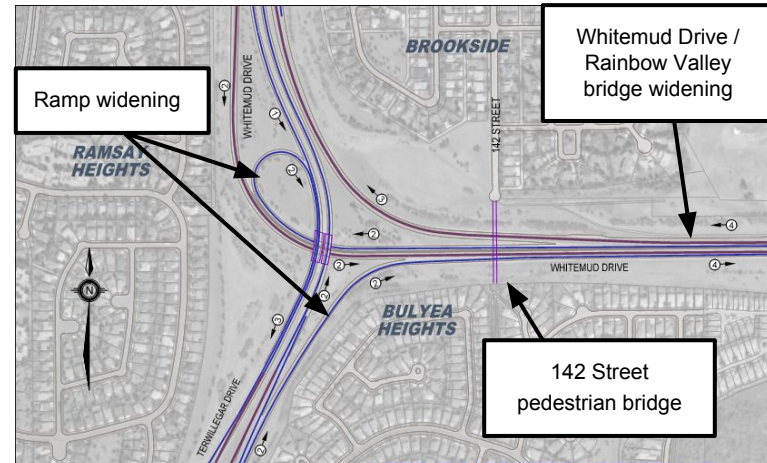
ESTIMATES ARE CONCEPT LEVEL +/- 50%

Freeway Plan - Stages 1 and 2 - \$110M (est)

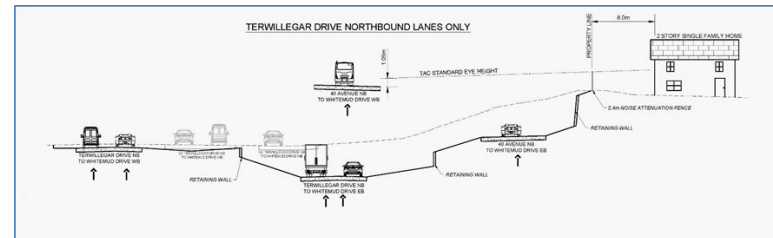
Planned Stage 1:



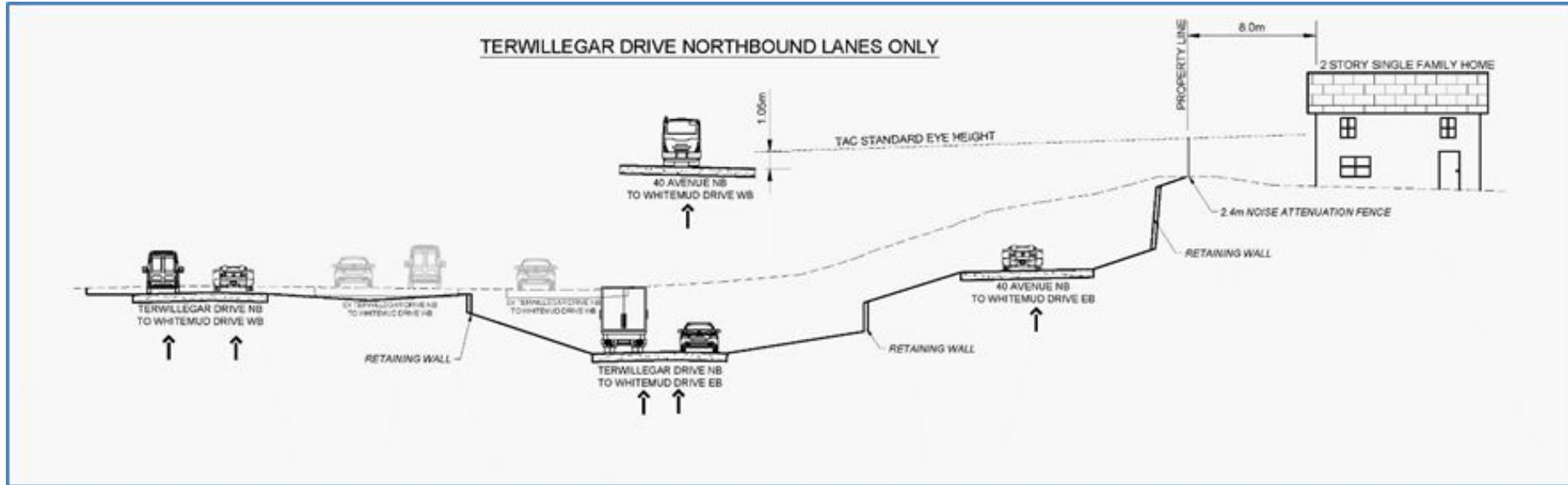
Potential Stage 2:



Basketweave Bridge Cross Section:



Freeway Plan - Stages 1 and 2 - \$110M (est)



Basketweave Bridge Cross Section

Alternative Solution

Freeway

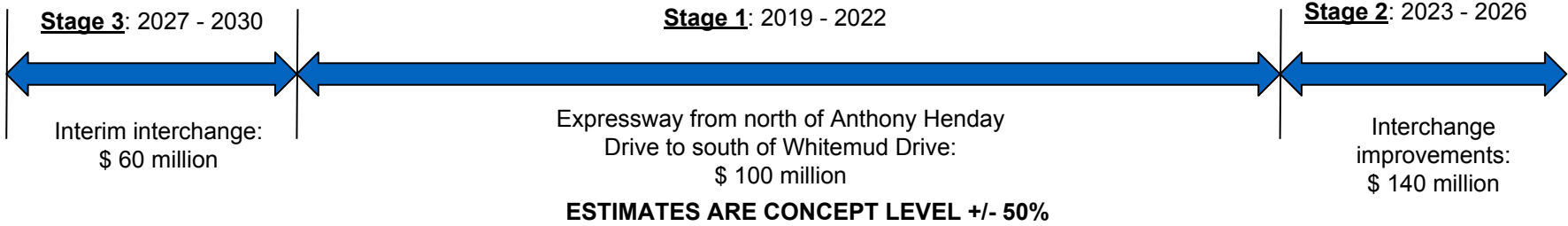
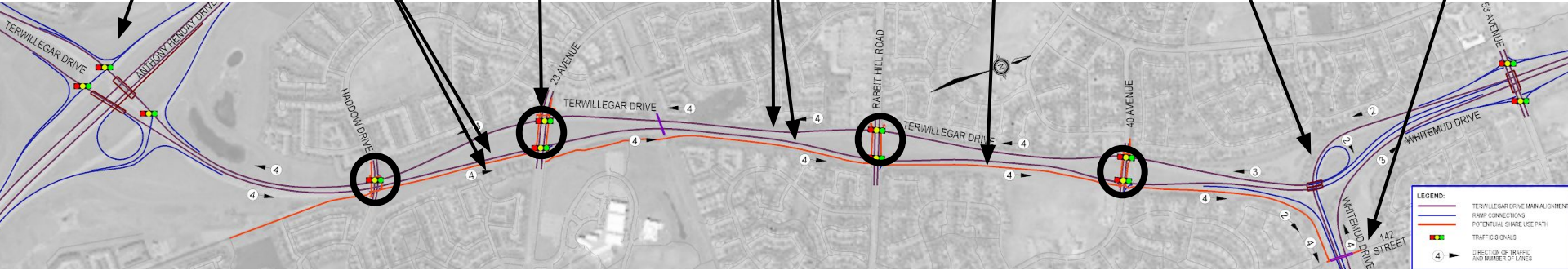
- More complex
- Free-flowing traffic (e.g., Whitemud Drive)
- Speed limit: 80 km/h
- Access via interchanges
- Conditions generally not suitable for accomodation of transit, pedestrian and cyclists facilities

Expressway

- Less complex
- High capacity, but not free-flowing
- Relatively high speed limit: 70 km/h
- Signalized intersections (e.g., 91 Street)
- Potential for adaptive traffic signal controls (i.e., "Smart Signals")
- Allows for integration of transit, pedestrian and cyclist facilities along the corridor

Expressway Plan

- Intermediate stage Anthony Henday Drive interchange
- Dedicated transit lane with bus stops
- Intersection improvements with potential for adaptive traffic signal controls
- Widening to 8 lanes
- North/south shared-use path (one or potentially both sides)
- Stage 2 Terwillegar Drive / Whitemud Drive interchange
- 142 Street pedestrian/cyclist bridge



Freeway and Expressway Comparison

<u>Criteria</u>	<u>Freeway Solution</u>	<u>Expressway Solution</u>
Conceptual Estimated Costs (+/- 50%)	\$ 1.2 billion	\$ 300 million
Community Impacts	<ul style="list-style-type: none"> ● 30-year implementation ● 8 stages ● Construction detouring and delays during each stage ● Land acquisition may be required 	<ul style="list-style-type: none"> ● 10-year implementation ● 3 stages (most improvements in Stage 1) ● Construction detouring and delays in each stage ● No land acquisition
User Satisfaction	<ul style="list-style-type: none"> ● Moderate initial increase ● Marginal increases in satisfaction with each stage, but declining trend over time ● Decreasing over time until additional investment 	<ul style="list-style-type: none"> ● High initial increase and declining over time

Freeway and Expressway Comparison

<u>Criteria</u>	<u>Do-Nothing</u>	<u>Freeway Solution</u>	<u>Expressway Solution</u>
Travel Times (2030) (Henday to Whitemud)	12 mins (AM NB) 12.5 mins (PM SB)	9 mins (AM NB) 9.5 mins (PM SB)	8 mins (AM NB) 8.5 mins (PM SB)
Travel Times (2050) (Henday to Whitemud)	Not assessed	11.5 mins (AM NB) 6.5 mins (PM SB)	14.5 mins (AM NB) 8.5 mins (PM SB)
Daily Traffic (2030) (vehicles per day)	30 - 55,000	30 - 70,000	40 - 75,000
Daily Traffic (2050) (vehicles per day)	Not assessed	60 - 95,000	50 - 85,000

Transit on Terwillegar Drive

- Terwillegar Drive project protects for transit infrastructure in both the freeway and expressway scenarios.
- Transit service is being identified through The City Plan, as is outlined in Report CR_5863.
- Consideration will include route classification, where the route starts/ends, direct/express routing between transit nodes, etc.

Next Steps

1. Concept - 2018/19
 - a. Further technical assessment of expressway (in progress)
 - b. Resume public engagement. Both solutions will be presented (November - December 2018)
 - c. Report back to Committee (March 2019)
 - d. Public engagement on long-term concept plan (April - June 2019)
2. Design - 2019/20 (if funding is approved)
3. Construction - 2021/22 (if funding is approved)

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Thank you.

Questions?