

## Long-Term Planning Solution Assessment

This attachment presents the results of Administration's assessment of the freeway and expressway long-term planning solutions for Terwillegar Drive. Additionally, this attachment provides additional details about the main criteria used for the assessment.

### **Cost:**

This criteria considers the full implementation cost based on strategy to conceptual levels of accuracy (+/- 50%). These costs will be refined further as this study progresses.

The full implementation of Terwillegar Drive freeway planning solution is assumed to include the ultimate, long-term interchanges at Whitemud Drive and Anthony Henday Drive, as shown on Attachment 2.

### **Operations:**

The operations criteria includes level-of-service (LOS) and travel times provided by the City's Detour Traffic Analysis (DTA) tool.

LOS is a measure of the user experience on the facility, defined by delay, reduction of speed or density. The LOS can range between A to F, where A represents uncongested, free-flowing conditions and F represents stop-and-go conditions. The City's typical standard is to provide a LOS of E or better in peak periods. This represents a delay to traffic of no more than 80 seconds at intersections, with traffic nearing capacity and congested operations at intersections. Travel times provide an understandable way of measuring the cumulative network impact.

### **Traffic Network:**

The traffic network criteria considers the total vehicle capacity of Terwillegar Drive. This criteria is measured by average daily traffic on Terwillegar Drive.

**Transit:**

The transit criteria considers the potential for transit service that are technically feasibly along the corridor.

**Active Modes:**

This criteria considers opportunities to include facilities to accomodate pedestrians and/or cyclists in the Terwillegar Drive corridor.

**Community Impacts:**

This criteria considers relative impactsresulting from the construction and operation of Terwillegar Drive, including noise and aesthetics, as well as construction delays.

**User Satisfaction:**

This metric considers the potential satisfaction of users of Terwillegar Drive, including movements of goods and services and commuters.

Criteria	No Improvements	Freeway Solution	Expressway Solution
<b>Estimated Cost</b>	Not assessed	<p>Total \$1.2 billion</p> <p>\$560 million</p> <ul style="list-style-type: none"> <li>● 40 Avenue interchange: \$110 million</li> <li>● Whitemud Drive interchange interim improvements and Rainbow Valley bridge widening: \$130 million</li> <li>● Anthony Henday Drive interim interchange: \$60 million</li> <li>● Rabbit Hill Road interchange: \$85 million</li> <li>● 23 Avenue interchange: \$80 million</li> <li>● Haddow Drive interchange: \$ 95 million</li> </ul> <p>\$575 million</p> <ul style="list-style-type: none"> <li>● Ultimate Terwillegar Drive / Whitemud Drive interchange: \$250 million</li> <li>● Ultimate Terwillegar Drive / Anthony Henday Drive interchange: \$375 million</li> </ul>	<p>Total \$300 million</p> <ul style="list-style-type: none"> <li>● Expressway from north of Anthony Henday Drive to south of Whitemud Drive: \$100 million</li> <li>● Whitemud Drive interchange interim Improvements and Rainbow Valley bridge Widening: \$140 million</li> <li>● Anthony Henday Drive interim interchange: \$60 million</li> </ul>

<p><b>Level-of-Service</b></p> <p>AM = Morning Peak PM = Afternoon Peak</p> <p>NB = North Bound SB = South Bound</p> <p>A to C, D to C, etc = range of level of service throughout corridor</p>	<p>2015 (AM NB): A to C 2015 (PM SB): A to B</p> <p>2030 (AM NB): D to F 2030 (PM SB): D to F</p>	<p>2030 (AM NB): D to E 2030 (PM SB): C to E</p> <p>2050 (AM NB): E to F 2050 (PM SB): D to E</p>	<p>2030 (AM NB): A to C 2030 (PM SB): A to D</p> <p>2050 (AM NB): D to F 2050 (PM SB): B to D</p>
<p><b>Travel Times ( south of Anthony Henday Drive to Whitemud Drive).</b></p>	<p><b><u>2015:</u></b> 8 mins (AM NB) 7.5 mins (PM SB)</p> <p><b><u>2030:</u></b> 12 mins (AM NB) 12.5 mins (PM SB)</p>	<p><b><u>2030:</u></b> 9 mins (AM NB) 9.5 mins (PM SB)</p> <p><b><u>2050:</u></b> 11.5 mins (AM NB) 6.5 mins (PM SB)</p>	<p><b><u>2030:</u></b> 8 mins (AM NB) 8.5 mins (PM SB)</p> <p><b><u>2050:</u></b> 14.5 mins (AM NB) 8.5 mins (PM SB)</p>
<p><b>Network Impacts Vehicles per day (vpd)</b></p>	<p>2015: 20-40,000 2030: 30-55,000</p>	<p>2030: 30-70,000 2050: 60-95,000</p>	<p>2030: 40-75,000 2050: 50-85,000</p>

<b>Transit Accomodation</b>	Not assessed	Potential bus-on-shoulder operations without transit stops	Potential for dedicated transit lane with stops at Haddow Drive, 23 Avenue, Leger Transit Centre, Rabbit Hill Road and 40 Avenue
<b>Pedestrian and Cyclist Accomodation</b>	Not assessed	East/west connections across interchange bridges only	Opportunity to develop north/south shared-use path connections for cyclists and pedestrians.
<b>Community Impacts</b>	Not assessed	30-year implementation schedule over eight stages with construction delays during each stage. Visually intrusive bridge stuctures and potential land acquisition	10-year implementation schedule over three phases.
<b>User Satisfaction</b>	Not assessed	Moderate increase in user satisfaction from from current situation after 40 Avenue interchange construction. Future user satisfaction dependent on investment.	High initial satisfaction, gradually declining over time.