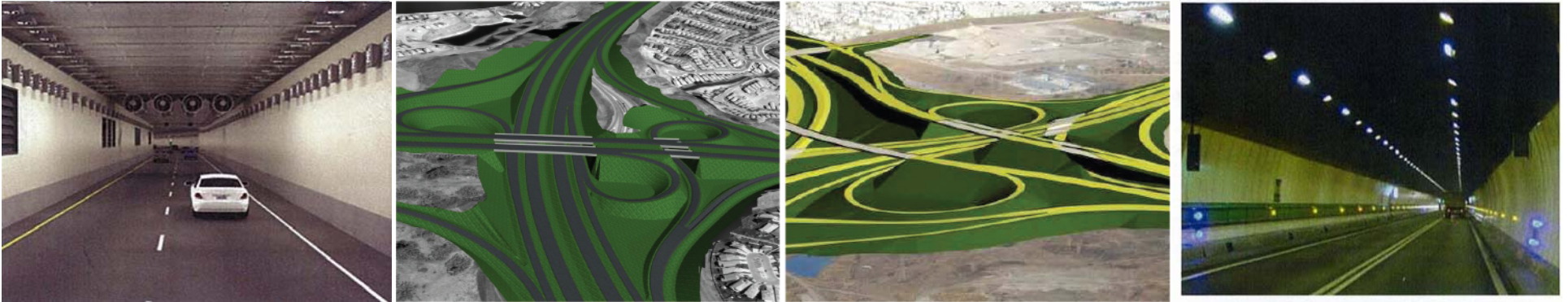


# Calgary Southwest Ring Road

## Functional Planning Study



**Presentation to Calgary Communities**

**January 29, 2011**

By

**Aziz Merali – Focus Corporation**

**FOCUS**

Engineering - Geomatics - Planning  
[www.focus.ca](http://www.focus.ca)

# Presentation Today.....

- Why are we doing this study?
- Benefits of a ring road in Calgary
- What is a functional planning study?
- Where are we in this study?
- Future traffic patterns
- Overview of the potential routes
- Preliminary evaluation
- Options for constructing the ring road on:
  - Surface
  - Aerial
  - Tunnel

# Introduction

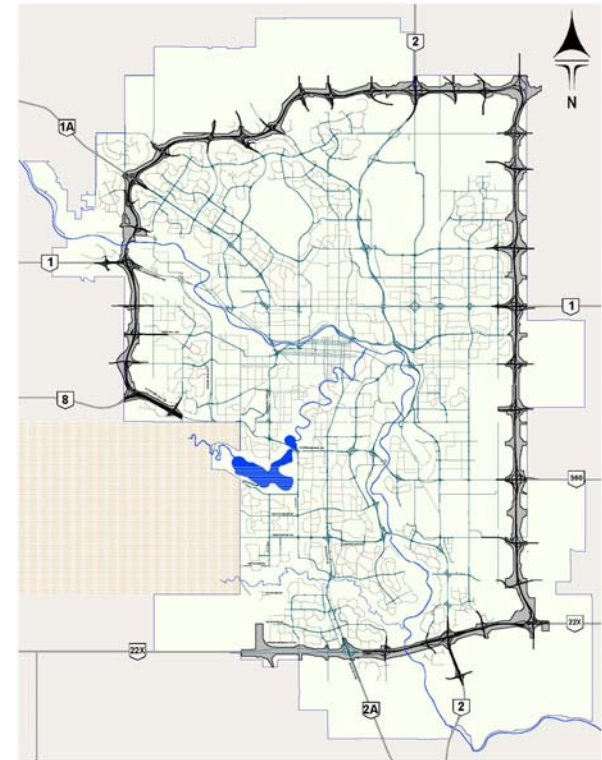
## Why are we doing this study?

Last study for the SW ring road completed in 2006

- Included a route through the Tsuu T'ina Nation
- Land transfer rejected by the Nation members in June 2009

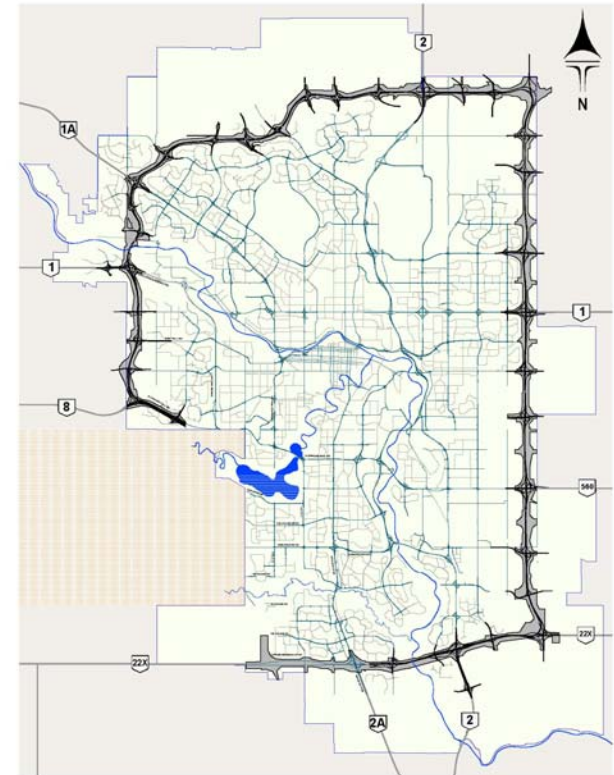
This study is to:

- Look at route options, outside the Tsuu T'ina Nation lands, to connect Highway 22X to Glenmore Trail near Sarcee Trail
- Select a preferred route and complete a **functional planning study**
- Recommend a plan to complete the Calgary Ring Road



# What are the benefits of the Ring Road in Calgary?

- A high-standard freeway connecting highways around the City of Calgary, enabling the efficient movement of goods and people, and further enhancing the economic climate of the region
- Ability to travel from one quadrant of the city to another without using roads which are closer to the city center
- Important part of the 2009 *Calgary Transportation Plan*



# What are the benefits of the Ring Road in Calgary? *(con't)*

- **Free-flow freeway**
  - **No traffic lights – eliminate “stop and go traffic”**
  - **Removes many trucks and city traffic from city streets**
    - **Releases capacity of city roads**
    - **Improved safety of operations on Ring Road and city streets**

# What is a functional planning study?

- **Study to determine the long-term corridor requirements to accommodate anticipated traffic demands – normally 25-30 years**
- **Identify possible routes to provide a connection between two points**
  - **Highway 22X**
  - **Glenmore Trail near Sarcee Trail**
- **Determine fundamental requirements**
- **Engineering and route evaluation**
- **Select a route which provides best overall solution, for further study**

# What is a functional planning study? (*con't*)

**Includes key tasks such as:**

- ❖ Public Consultation
- ❖ Traffic Analyses
- ❖ Roadway Standards
- ❖ Bridge Options
- ❖ Utilities
- ❖ Storm Drainage
- ❖ Geotechnical
- ❖ Environmental
- ❖ Noise Assessments
- ❖ Costs

**Used to develop the detailed design and construction**

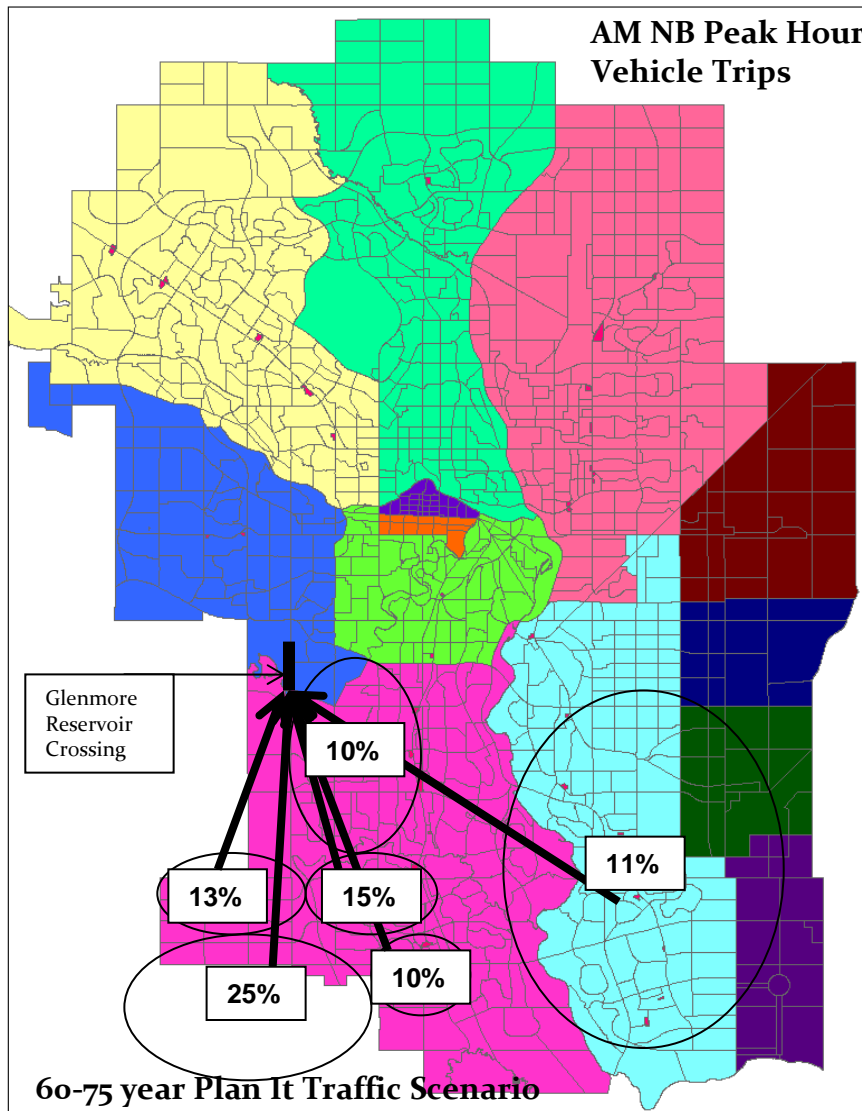
# Where are we in this study?

- **Worked with The City on the Glenmore Trail and 37 Street overpass**
- **Collecting available background data and information**
- **Re-confirmed the benefits of completing the Ring Road in Calgary**
- **Identified Ring Road route options, reviewed opportunities and challenges, and in process of completing a route evaluation**
- **Today's workshop to exchange information and receive community input**





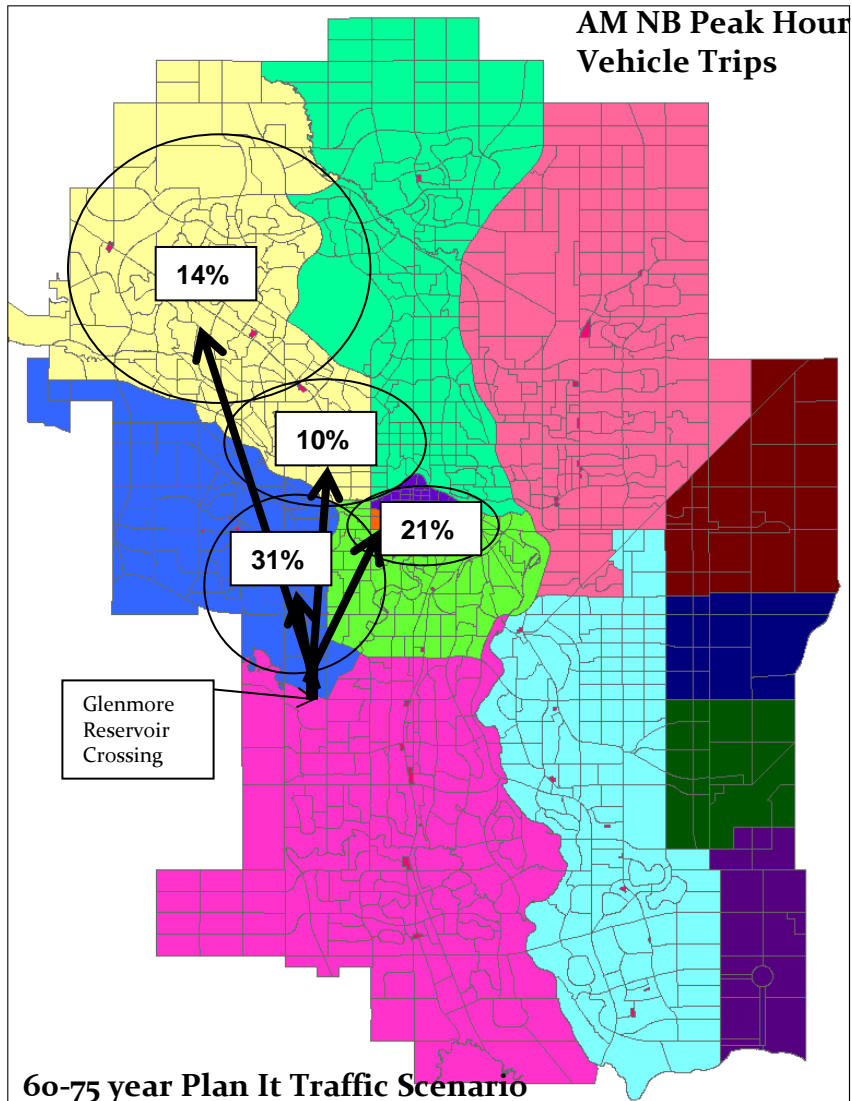
# Future Traffic Patterns – Where will the traffic come from?



Of 37 Street northbound traffic crossing the Elbow River in the morning peak hour, traffic will come from:

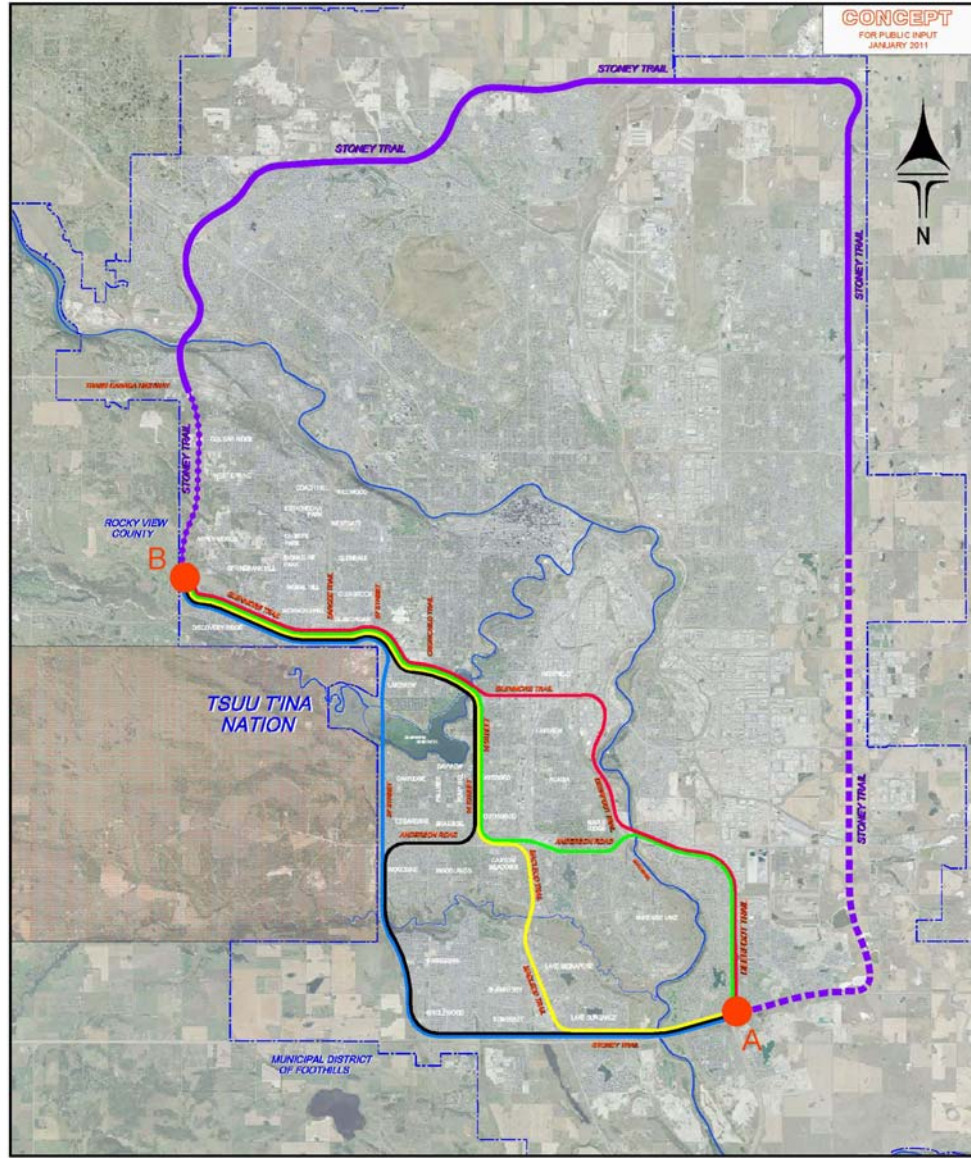
- 10% Glenmore area
- 13% Providence
- 15% Evergreen
- 10% Silverado
- 25% external (Okotoks, Turner Valley, High River, Foothills, etc.)
- 11% southeast (Southeast Industrial, McKenzie, Homesteads, Pine Creek)

# Future Traffic Patterns – Where will the traffic go?



- 1 in 5 trips destined for downtown
- Low truck volumes (7%)
- Of 37 Street northbound traffic crossing the Elbow River during the morning peak hour:
  - 31% destined for Mount Royal University and Westhills area
  - 21% destined for downtown and the Beltline area
  - 14% destined for northwest Calgary
  - 10% destined for University of Calgary and Foothills Hospital
  - 8% destined outside Calgary

**CALGARY SOUTHWEST RING ROAD  
 FUNCTIONAL PLANNING STUDY  
 SOUTHWEST CALGARY -  
 ROUTE LOCATION MAP**



**ROUTE 1**  
 DEERFOOT TRAIL SE -  
 GLENMORE TRAIL

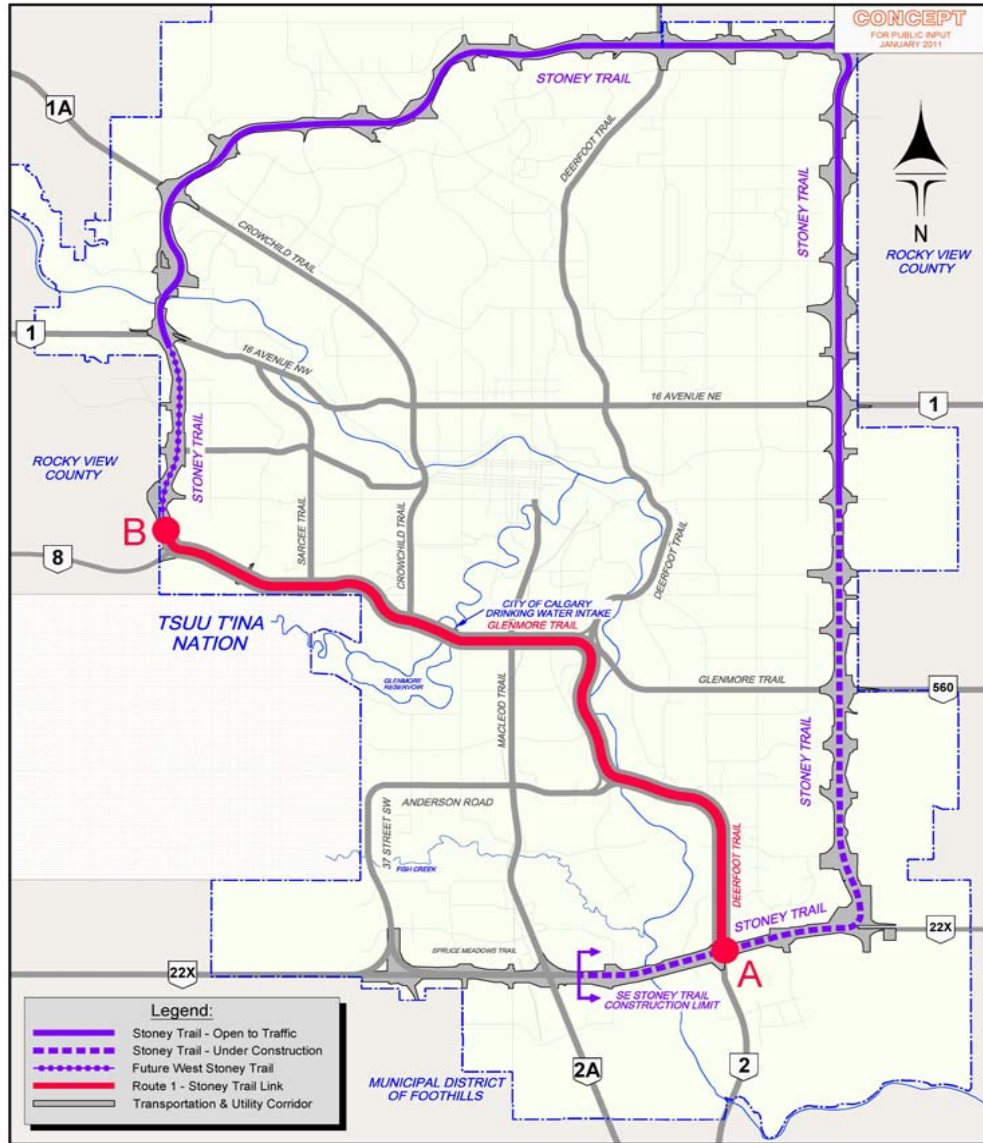
**ROUTE 2**  
 DEERFOOT TRAIL SE -  
 ANDERSON ROAD - 14 STREET SW

**ROUTE 3**  
 MACLEOD TRAIL SE -  
 14 STREET SW

**ROUTE 4**  
 37 STREET SW

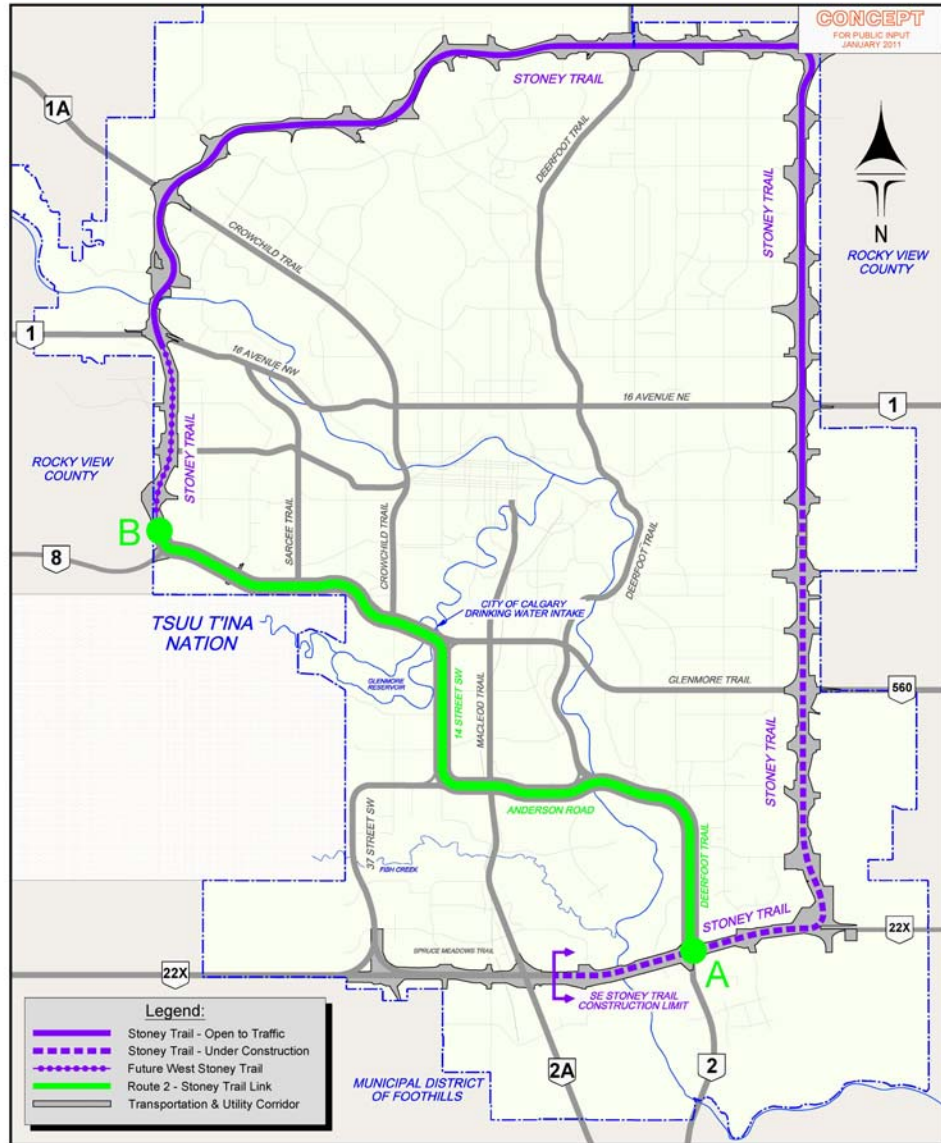
**ROUTE 5**  
 ANDERSON ROAD SW -  
 14 STREET SW

**ROUTE 1**



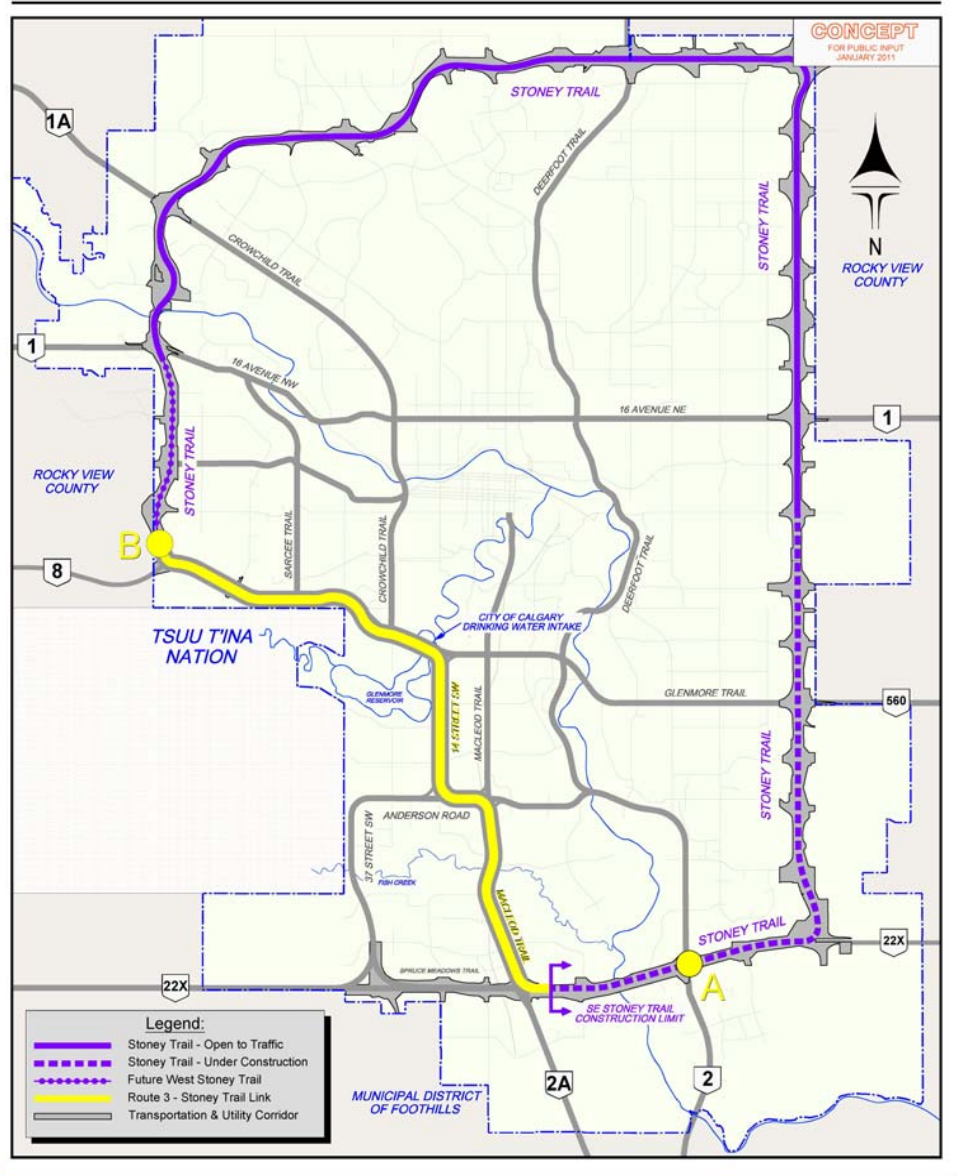
- Partially provides a connection for inter-regional traffic
- Does NOT support the planned growth and the planned transportation network in southwest Calgary
- Partially supports the function of the Calgary Ring Road
  - Less effective connections between perimeter highways
  - Less efficient distribution of city traffic
- Requires significant expansion of the Glenmore causeway bottleneck (up to 8 additional lanes)
- Corridor length is 28 km
- Additional land may be required from 14 residential communities
- Potential short-term and long-term impacts to 21 adjacent communities

**ROUTE 2**



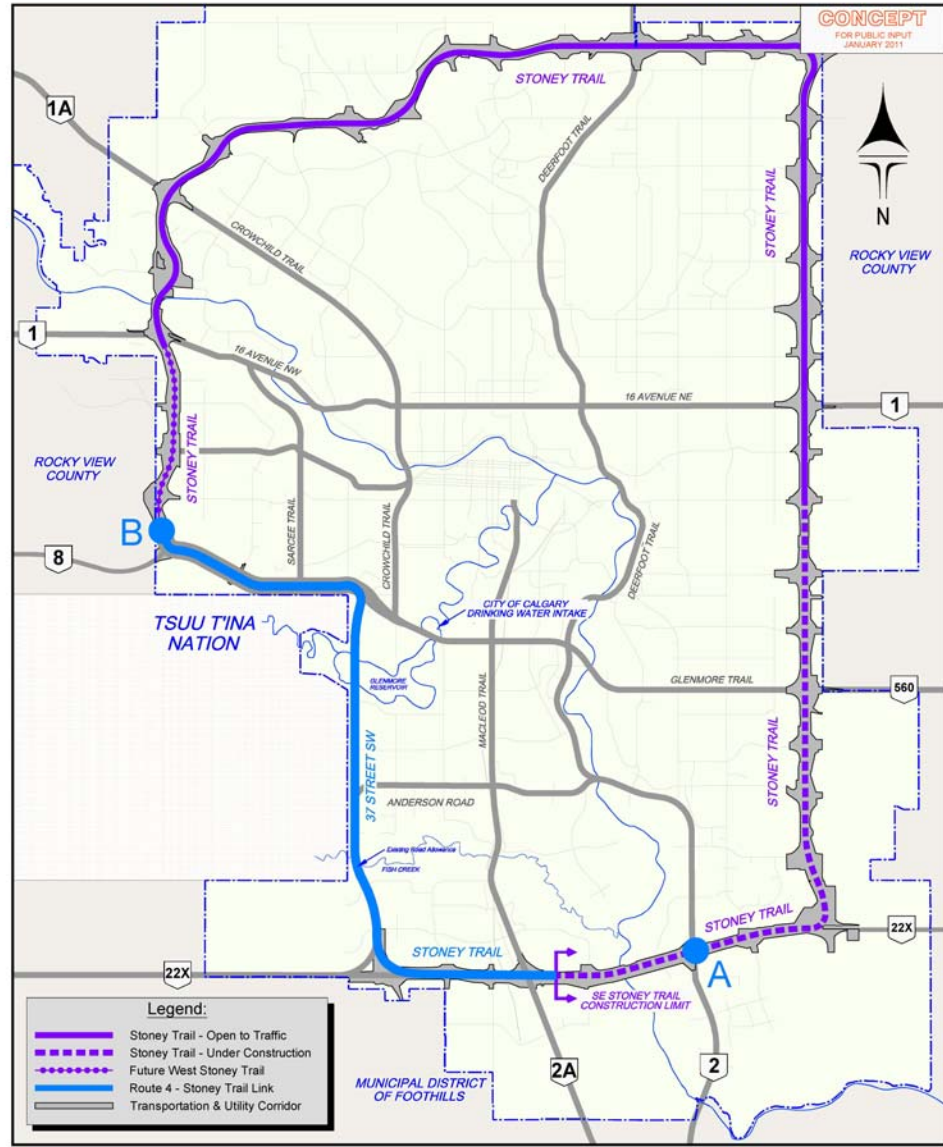
- Partially provides a connection for inter-regional traffic
- Does NOT support the planned growth and the planned transportation network in southwest Calgary
- Partially supports the function of the Calgary Ring Road
  - Less effective connections between perimeter highways
  - Less efficient distribution of city traffic
- Requires significant expansion of the Glenmore causeway bottleneck (up to 8 additional lanes)
- Corridor length is 29 km
- Additional land may be required from 24 residential communities
- Potential short-term and long-term impacts to 29 adjacent communities

**ROUTE 3**



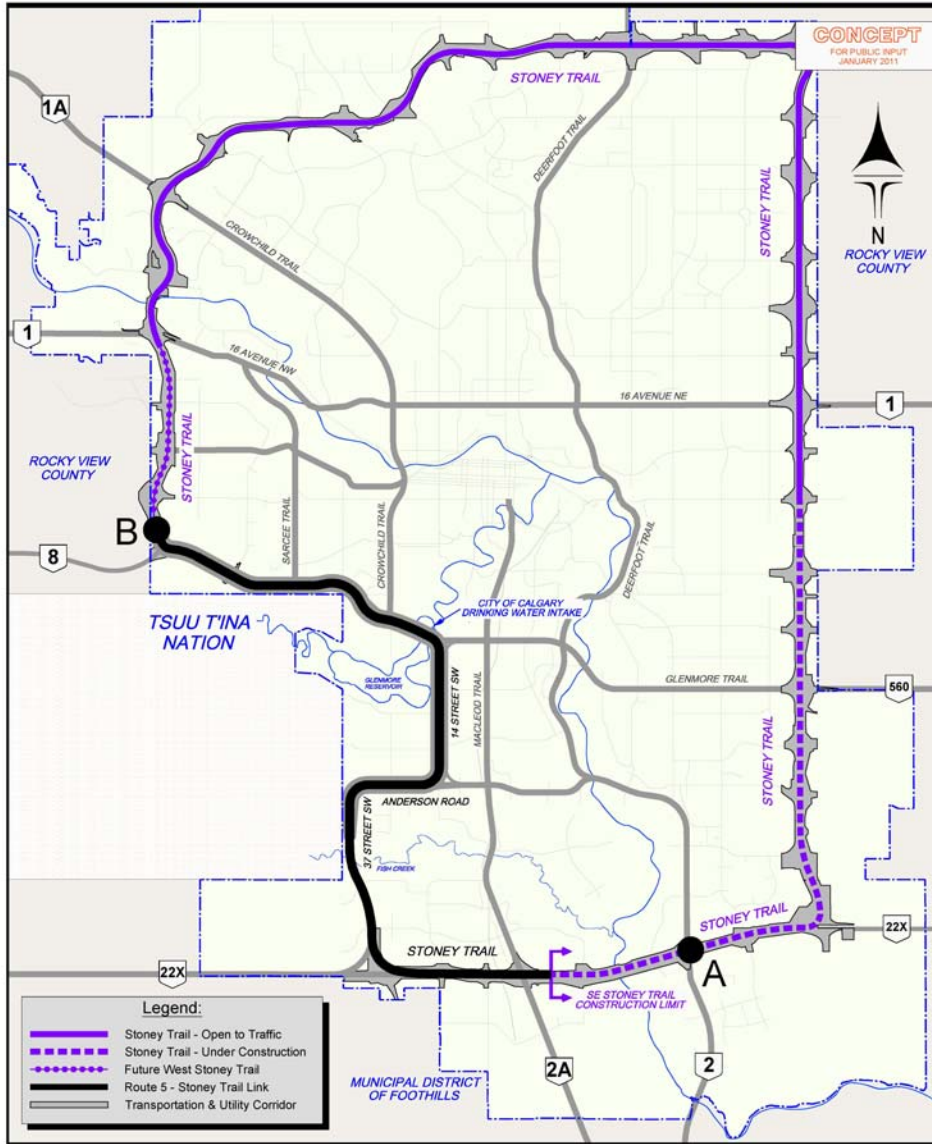
- Provides a connection for inter-regional traffic
- Does NOT support the planned growth and the planned transportation network in southwest Calgary
- Partially supports the function of the Calgary Ring Road
  - Less effective connections between perimeter highways
  - Less efficient distribution of city traffic
- Requires significant expansion of the Glenmore causeway bottleneck (up to 8 additional lanes)
- Corridor length is 29 km
- Additional land may be required from 18 residential communities
- Potential short-term and long-term impacts to 26 adjacent communities

**ROUTE 4**



- Provides a connection for inter-regional traffic
- Supports the planned growth and the planned transportation network in southwest Calgary
- Supports the function of the Calgary Ring Road
  - Effective connections between perimeter highways
  - Efficient distribution of city traffic
- Avoids the Glenmore causeway bottleneck – needs another reservoir crossing
- Corridor length is 30 km
- Additional land may be required from 6 residential communities
- Potential short-term and long-term impacts to 11 adjacent communities

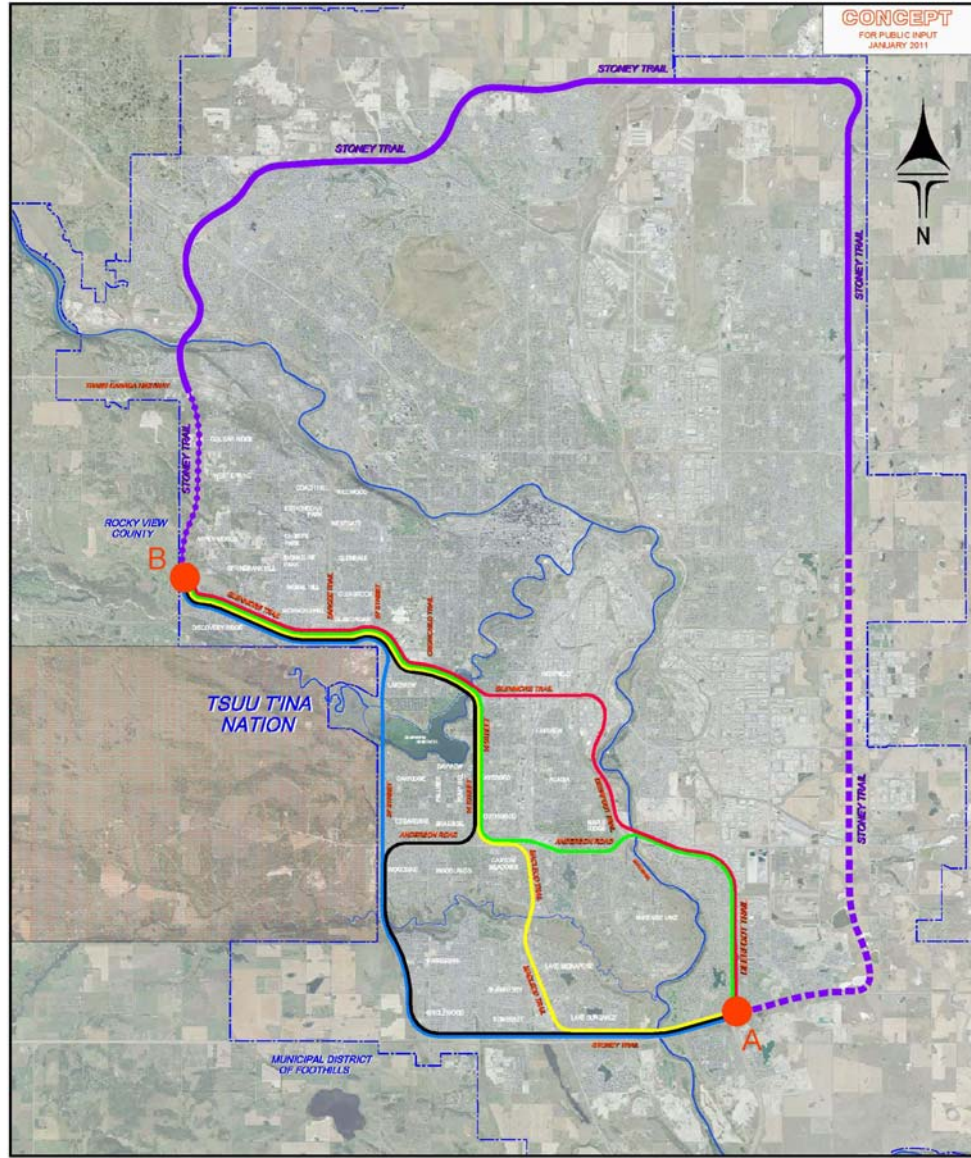
**ROUTE 5**



- Provides a connection for inter-regional traffic
- Supports the planned growth and the planned transportation network in southwest Calgary
- Somewhat supports the function of the Calgary Ring Road
  - Less effective connections between perimeter highways
  - Less efficient distribution of city traffic
- Requires significant expansion of the Glenmore causeway bottleneck (up to 8 additional lanes)
- Corridor length is 36 km
- Additional land may be required from 17 residential communities
- Potential short-term and long-term impacts to 22 adjacent communities



**CALGARY SOUTHWEST RING ROAD  
 FUNCTIONAL PLANNING STUDY  
 SOUTHWEST CALGARY -  
 ROUTE LOCATION MAP**



**ROUTE 1**  
 DEERFOOT TRAIL SE -  
 GLENMORE TRAIL






**ROUTE 2**  
 DEERFOOT TRAIL SE -  
 ANDERSON ROAD - 14 STREET SW

**ROUTE 3**  
 MACLEOD TRAIL SE -  
 14 STREET SW

**ROUTE 4**  
 37 STREET SW

**ROUTE 5**  
 ANDERSON ROAD SW -  
 14 STREET SW

# Preliminary Evaluation Matrix

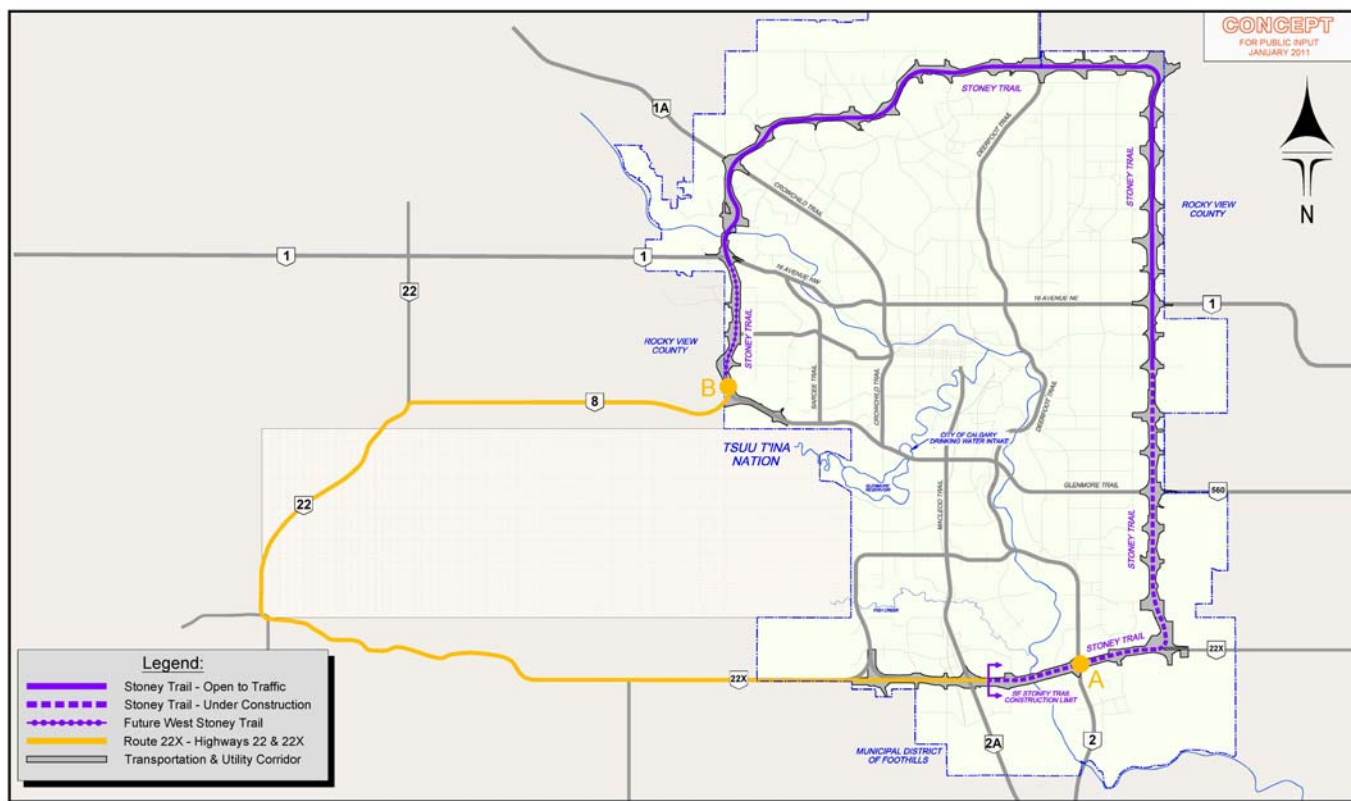
ROUTE OPTION	ROUTE 1	ROUTE 2	ROUTE 3	ROUTE 4	ROUTE 5
					
Main Feature	Freeway Shares Right-of-Way with Deerfoot Trail and Glenmore Trail	Freeway Shares Right-of-Way with Deerfoot Trail, Anderson Road, 14 Street SW and Glenmore Trail	Freeway Shares Right-of-Way with Macleod Trail SE, 14 Street SW and Glenmore Trail	Freeway Built Along the 37 Street SW Corridor	Freeway Shares Right-of-Way with 37 Street SW, Anderson Road, 14 Street SW and Glenmore Trail
Supports the planned growth and the planned transportation network in southwest Calgary					
Supports the function of the Calgary Ring Road					
Potential environmental impact					
Proximity to drinking water intake					
Corridor length * (Measured A to B)	28 km	29 km	29 km	30 km	36 km
Number of residential communities where land may be required	14	24	18	6	17
Number of impacted communities**	21	29	26	11	22
RELATIVE COST	\$\$\$\$\$	\$\$\$\$\$	\$\$\$\$	\$	\$\$\$

\* Corridor length measured from Deerfoot Trail - Highway 22X (A) to Stoney Trail / Highway 8 (B)

\*\* Additional data collection and engineering required to confirm property impacts.

Favourable
  Less Favourable
  Least Favourable

**WHY NOT USE HIGHWAY 22X?**



JANUARY 2011

- Partially provides a connection for inter-regional traffic
- Does NOT support the planned growth and the planned transportation network in southwest Calgary
- Does NOT support the function of the Calgary Ring Road
- Corridor length is 74 km
- Additional land may be required from adjacent land owners
- Potential short-term and long-term impacts to 2 adjacent communities

# Options for the Ring Road

Surface: Typical Ring Road (rural)  
Freeway like Stoney Trail



Cut & Cover Tunnel



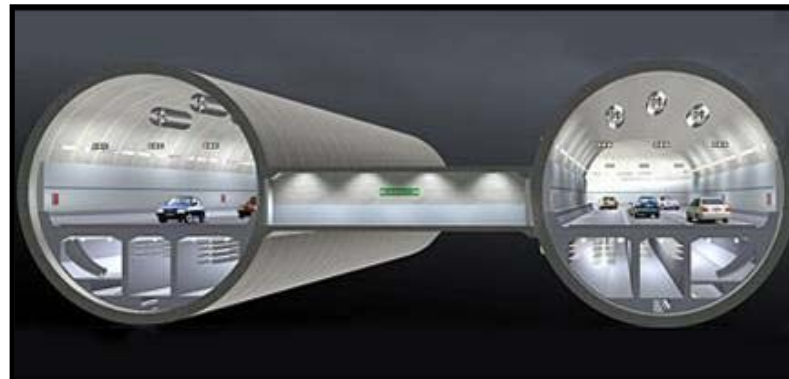
Aerial Structures



Surface: Urban Freeway like Deerfoot Trail



Bored Tunnel



# Surface Roadway - Facts

- Deerfoot Trail style freeway
- Can be posted at 100 km/hr
- 4 lanes each way
- Needs 60-85 m right-of-way
- Similar to many urban freeways in Canada
- Noise mitigation possible using noise walls or berms

Deerfoot Trail



# Aerial Structures - Facts

**Local Road Underneath**



- Freeway on long bridges / overpasses
- 30 ft above existing ground and homes
- 4 lanes each way
- Still requires property
- Difficult construction

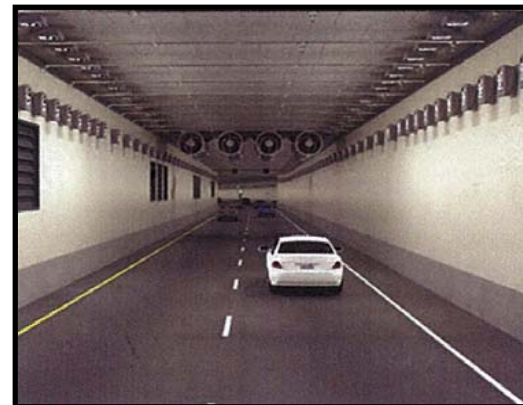
**Ring Road on Top**



- Issues with noise, safety of operations
- Winter operations and maintenance
- Potentially severe implications on community development

# Tunnels – General Facts

- **Dangerous goods not permitted in tunnels in Alberta**
  - Needs a strategy for handling dangerous goods
- **Safety concerns in case of collisions, fire, hazardous material spills, etc.**
- **Needs emergency escape and emergency access, ventilation shafts**
- **Requires a fully staffed 24-hr operations and control centre, including a dedicated and specialized emergency response team → Long term costs**
- **A tunnel option will affect ability to connect to city of Calgary roadways**



# Bored Tunnel - Facts

- **Boring Machine**
  - Largest diameter tunnel in the world
  - Purpose built for Calgary – need two
  - About 60 m below ground
- Can only have 3 lanes each way – 2 tunnels
- Needs 65-75 m easement
- Will take several years to construct
- Needs 25-acre staging area + settling ponds
- Closure of some city roads for long periods
- Disposal of significant excavation material
- Safety risks during construction





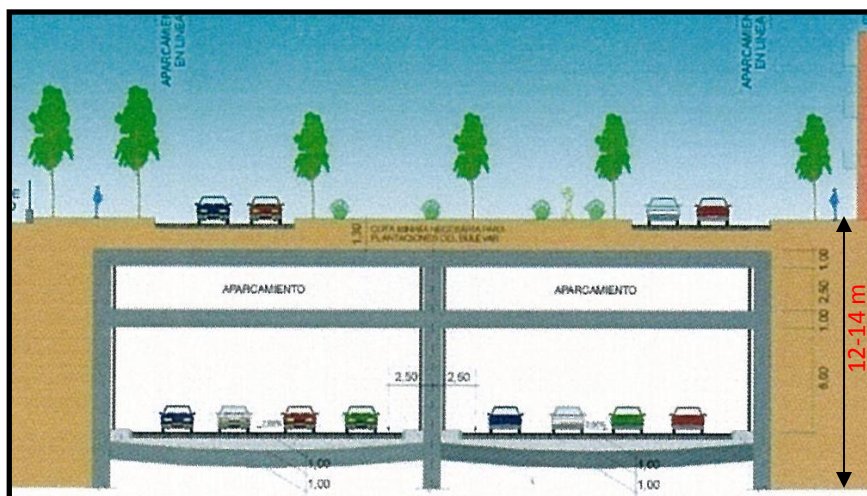
# Cut & Cover Tunnel - Facts

- Shallow tunnel
- 4 lanes each way possible
- Needs about 75 m right-of-way
- Significant construction impacts
- Quality of life issues

Linear Parkway



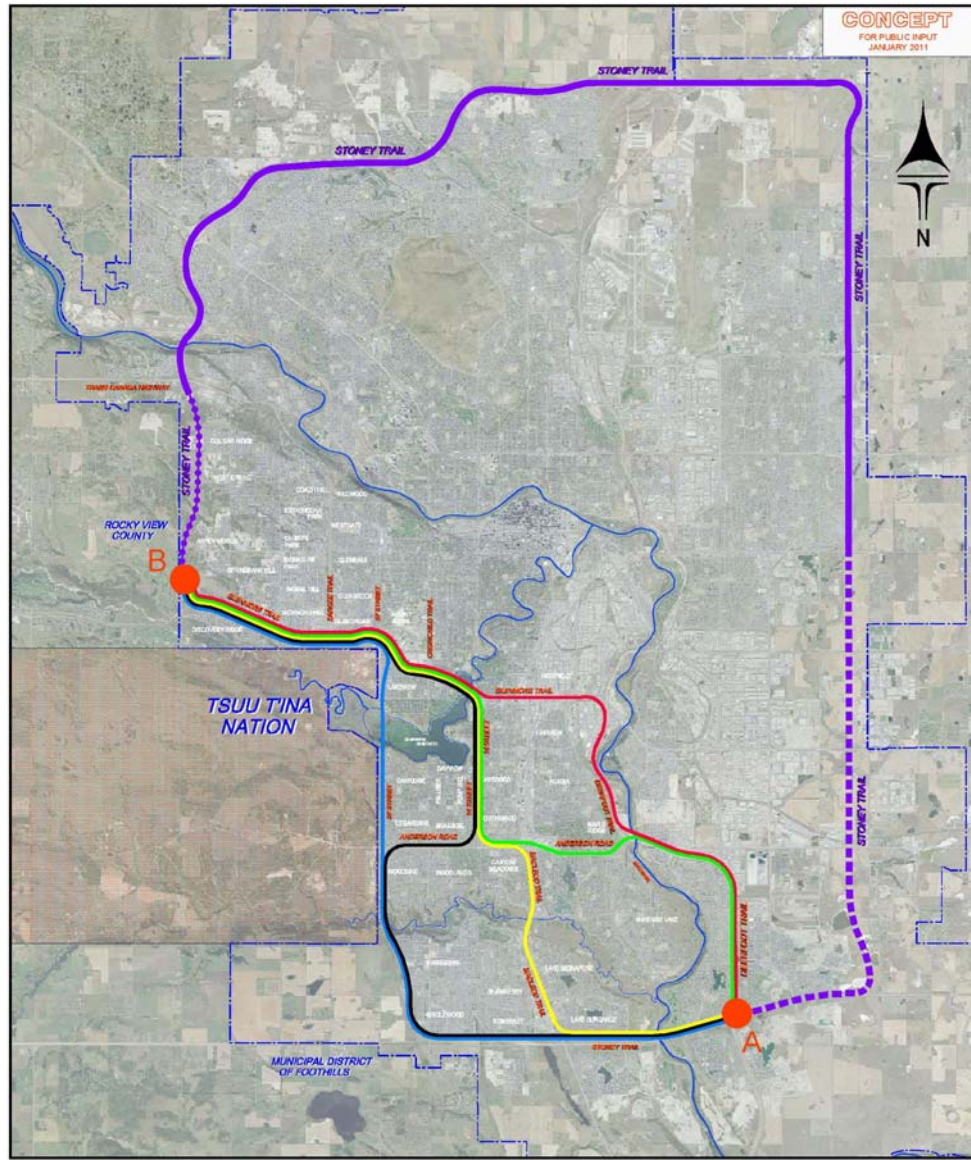
Cut & Cover Schematic



# Next Steps

- **Receive community input today**
- **Public open houses – late February 2011**
- **Ongoing consultation with communities and stakeholders, and public open houses**
- **Determine the best route for the ring road in south Calgary**
- **Continue to collect information and develop a recommended plan for the ring road in south Calgary**

# CALGARY SOUTHWEST RING ROAD FUNCTIONAL PLANNING STUDY SOUTHWEST CALGARY - ROUTE LOCATION MAP



# Thank You