

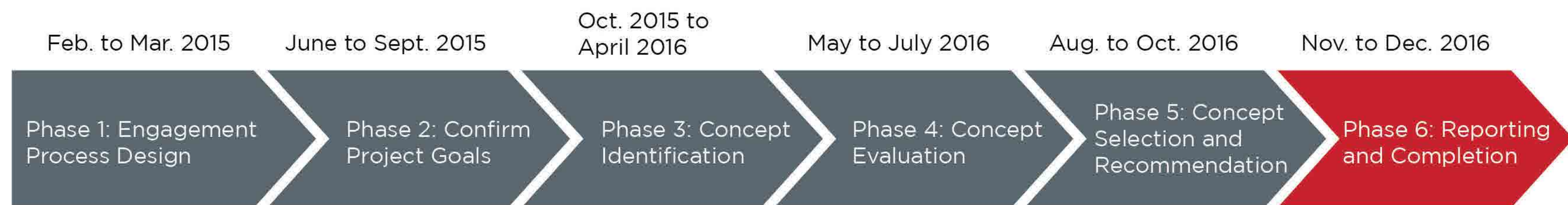
# Welcome to the Crowchild Trail Study Information Session.



During this session you can:

- View the final recommendations and learn how they were refined.
- Provide your input on the engagement process.

We are using your feedback to understand how well Calgarians can see their input used throughout the process to develop the recommendations. We anticipate presenting the final recommendations to Council in early 2017.









↑  
We are here





# What We Heard & What We Did

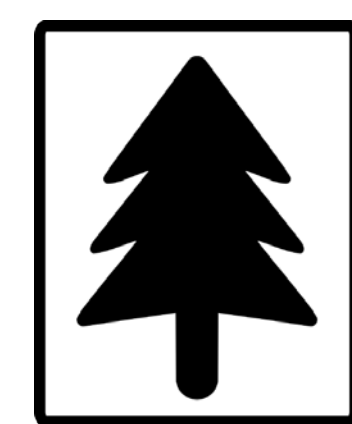
## What we heard from Calgarians in Phase 5

Strengths	Weaknesses
 <ul style="list-style-type: none"> <li>• Property impacts are minimized with Crowchild Tr. improvements.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts to some religious institutions, businesses and homes along Crowchild Tr. remain.</li> </ul>
 <ul style="list-style-type: none"> <li>• Noise impacts reduced in bordering communities by lowering Crowchild Tr. in the Central Section.</li> </ul>	<ul style="list-style-type: none"> <li>• Not enough noise attenuation at the following locations:                             <ul style="list-style-type: none"> <li>- East side of Crowchild Tr. near 5 Ave. N.W.</li> <li>- Between Bow Tr. and 17 Ave. S.W., on both sides of Crowchild Tr.</li> <li>- Along the Bow Tr. exit ramp.</li> </ul> </li> </ul>
 <ul style="list-style-type: none"> <li>• Green spaces are increased and enhanced between Memorial Dr. and 5 Ave. N.W., as well as in the 17 Ave. S.W. area.</li> </ul>	<ul style="list-style-type: none"> <li>• Pathway through Shaganappi Park would impact community skating rink.</li> <li>• Pedestrian overpass south of 17 Ave. S.W. could be realigned to reduce impacts to off-leash dog park.</li> </ul>
 <ul style="list-style-type: none"> <li>• Traffic flow is improved by removing all the lights on Crowchild Tr. within the study area.</li> <li>• Realignment of current left-hand entrances and exits to the right-hand side is an improvement.</li> <li>• Additional lanes on the Bow River Bridge will reduce bottlenecks and weaving.</li> </ul>	<ul style="list-style-type: none"> <li>• Implementing lights on the interchanges across Crowchild Tr. could cause additional bottlenecks.</li> <li>• Reduced access to St. Andrews Heights and 5 Ave. N.W. could increase short-cutting through bordering communities.</li> <li>• No eastbound Bow Tr. to southbound Crowchild Tr. access.</li> </ul>
 <ul style="list-style-type: none"> <li>• Connectivity and safety for people who walk and bike is enhanced both across and along Crowchild Tr.</li> </ul>	<ul style="list-style-type: none"> <li>• Concerns about walkability around Motel Village and McMahon Stadium.</li> <li>• Concerns about safety of underpasses for people who walk and bike.</li> </ul>
 <ul style="list-style-type: none"> <li>• Connections to bus stops are improved.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure bus stops are in safe locations.</li> </ul>

## How the recommendations were refined since Phase 5



- Extended location of the noise wall on the north side of 5 Ave. N.W., on east side of Crowchild Tr. to provide better protection for homes along 6 Ave. N.W.



- Added additional green buffer space at University Dr., on east side of Crowchild Tr.
- Provided additional green buffer space on east side of Crowchild Tr., north of 5 Ave. N.W.



- Added connections to north/south pathway system from Toronto Cres. and 13 Ave. N.W.
- Enhanced plans for shared space at 24 St. N.W.
- Changed crossing of Memorial Dr. to a combination of overpass/underpasses to address concerns about underpasses at this location.
- Added enhanced overpass at Sonora Ave. for a better pedestrian experience.
- Moved the location of the pathway between 14 Ave. S.W. and Bow Tr. to separate it from Shaganappi Park.
- Moved the location of the pedestrian overpass south of 17 Ave. S.W. to miss the dog park on the east side of Crowchild Tr.



- Extended frontage road on east side of Crowchild Tr. at Motel Village to ensure access to all current properties.





# Noise Attenuation

## Proposed Noise Walls



## Recommendations

- Noise walls along all residential properties immediately adjacent to Crowchild Tr. and along the ramps to and from Crowchild Tr.
- Community engagement prior to construction to review wall details including appearance and height.

## Enhancements

- Absorptive materials and cantilevered walls can further mitigate noise.
- Noise walls may provide an opportunity to incorporate Public Art.
- Computer printing techniques allow most patterns or colours to be adopted on wall panels.

## Examples of Noise Walls and Materials

(All photos courtesy of google.ca and project team)



Custom panel wall



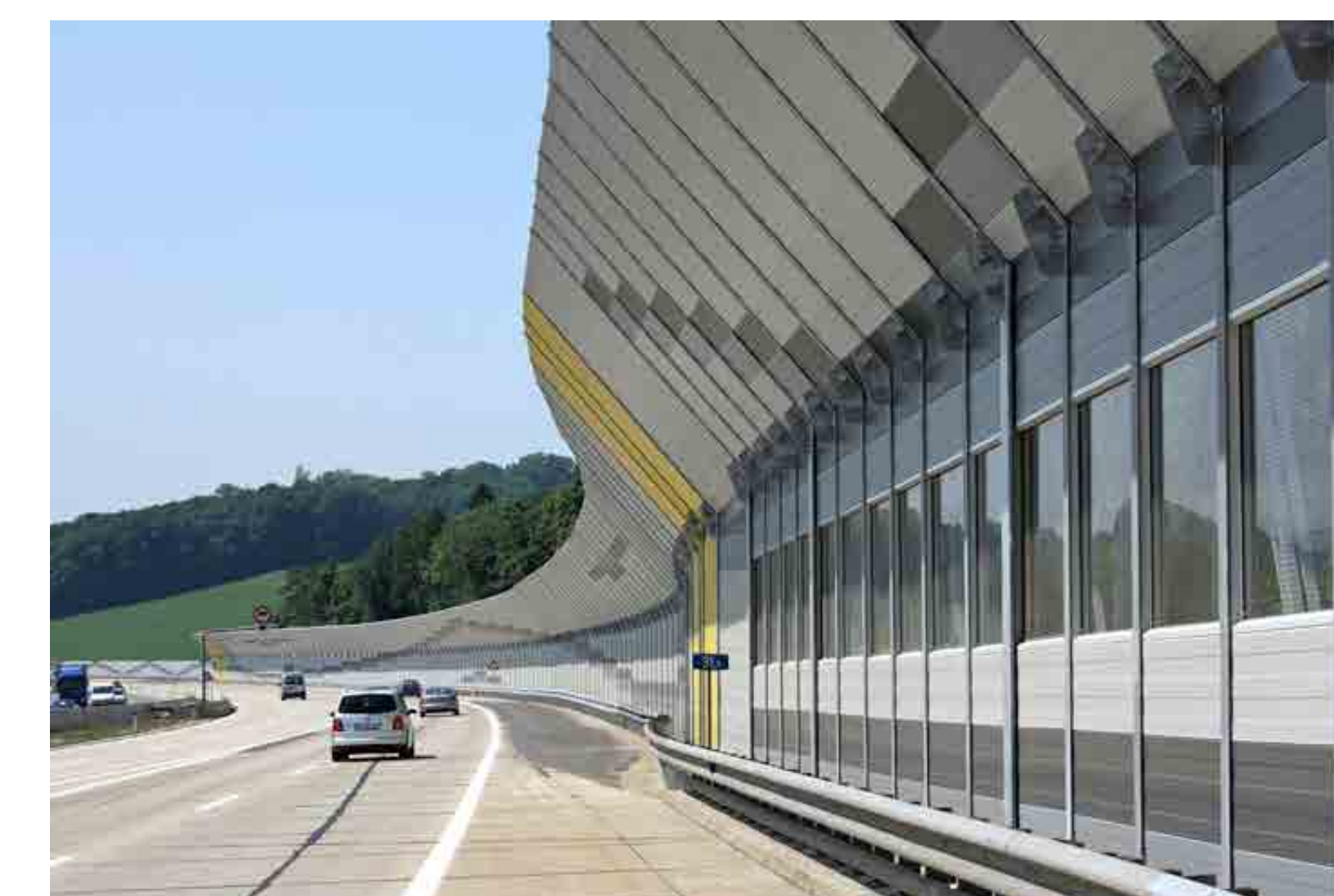
Cantilevered wall



Absorptive material



Custom panel wall



Cantilevered wall



Transparent materials with artistic design



Custom panel wall



Cantilevered wall with solar panel



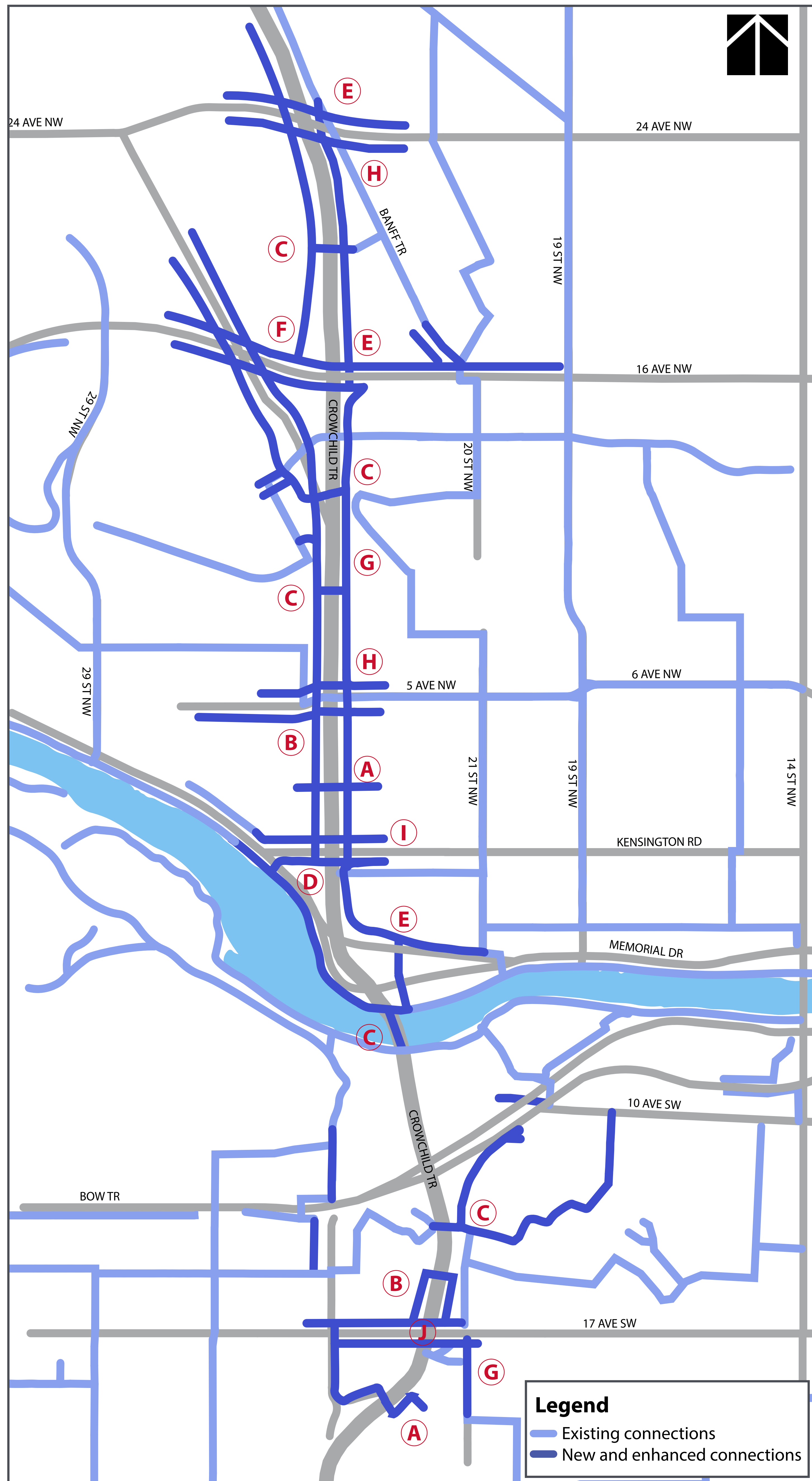
Transparent materials with colour





# Walking and Cycling Connections

## Proposed Walking and Cycling Connections



## Recommendations

- A** New overpasses across Crowchild Tr. at 2 Ave. N.W. and 19 Ave. S.W.
- B** Land bridge-style overpasses across Crowchild Tr. at 5 Ave. N.W. and north of 17 Ave. S.W.
- C** Enhanced, accessible overpasses across Crowchild Tr. at 23 Ave. N.W., 12 Ave. N.W., 9 Ave. N.W., Sonora Ave. and under the Bow River Bridge.
- D** New crossing from the Bow River Pathway across Memorial Dr. tying the Bow River Pathway to continuous north-south pathways on west side of Crowchild Tr.
- E** New and enhanced underpasses across 24 Ave. N.W., 16 Ave. N.W. and Memorial Dr. providing continuous north-south connectivity on the east side of Crowchild Tr.
- F** New connections along 16 Ave. N.W., connecting the Banff Trail LRT Station area with bordering communities and major destinations such as Foothills Medical Centre.
- G** New north-south bike lanes on 24 St. N.W. and Richmond Rd.
- H** New east-west bike lanes on 24 Ave. N.W. and 5 Ave. N.W., connecting bordering communities to the University of Calgary and other destinations.
- I** Enhancements along Kensington Rd. extending the Main Street feel continuously across Crowchild Tr. to Parkdale Blvd.
- J** Enhancements along 17 Ave. S.W. across Crowchild Tr. including construction of new pathway on south side of the street.

## Examples of Pedestrian Crossings and Multi-Use Pathways

(All photos courtesy of google.ca and project team)



Multi-use pathway



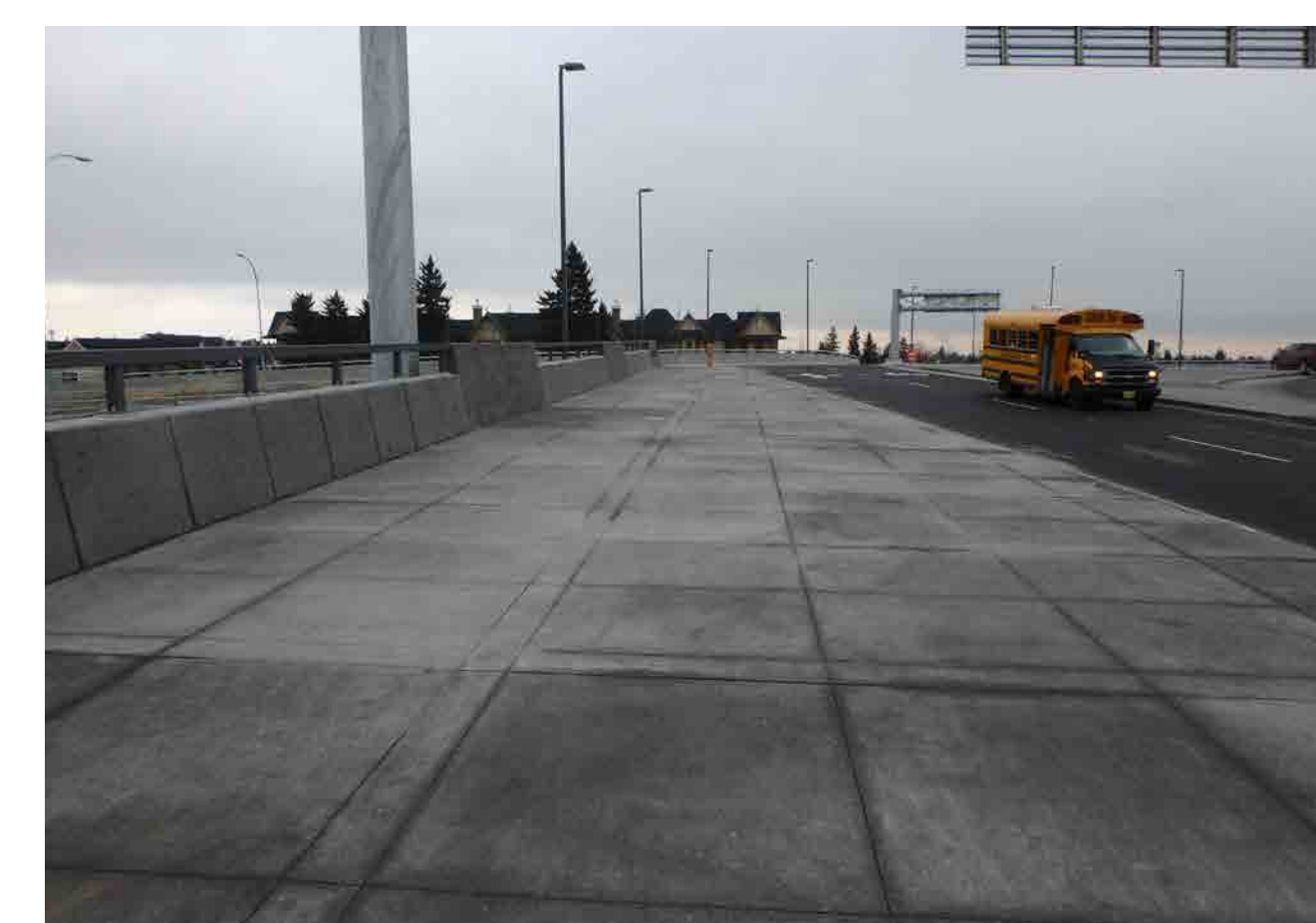
Underpass



Land bridge



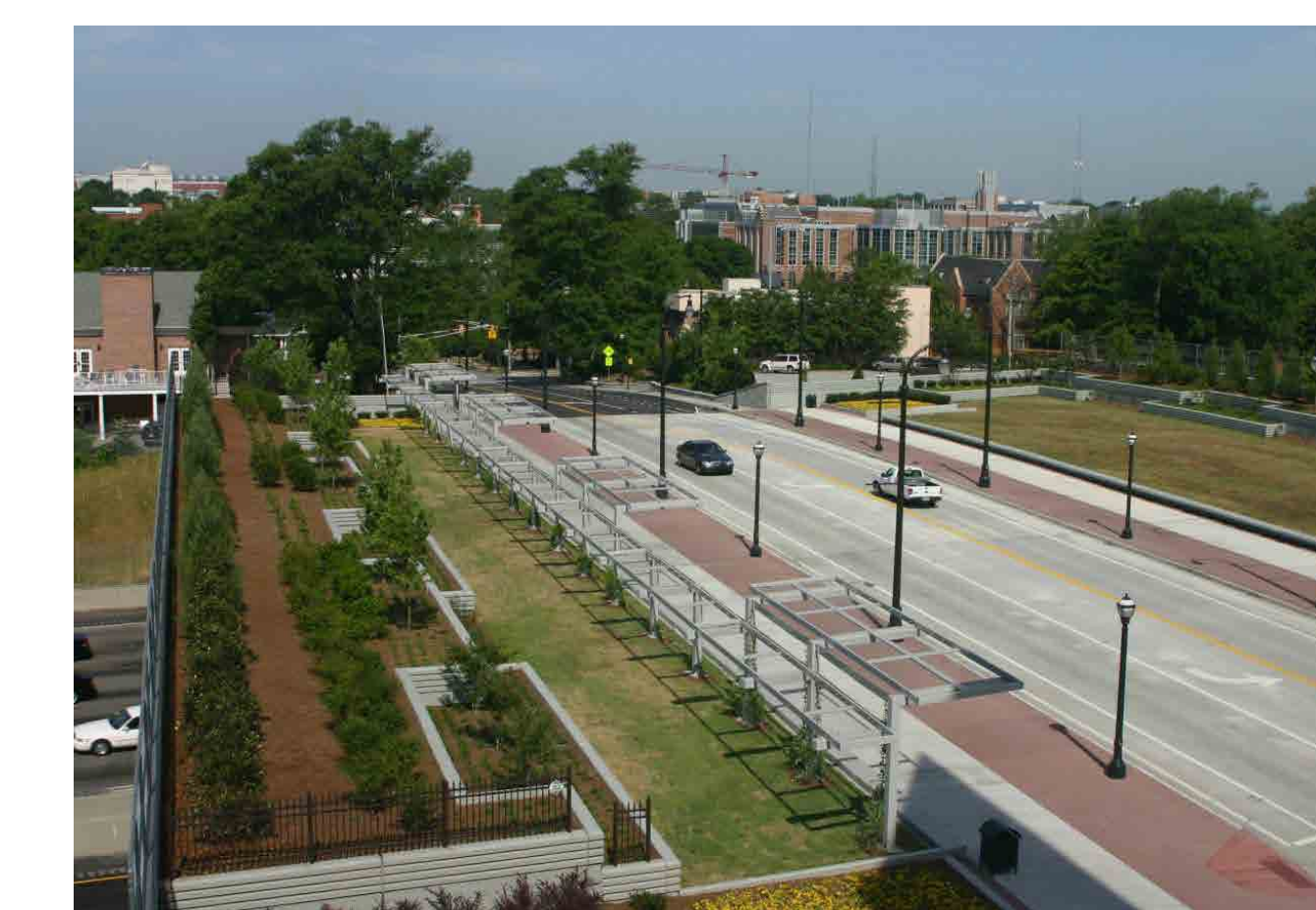
View on land bridge



Overpass



Underpass



Land bridge

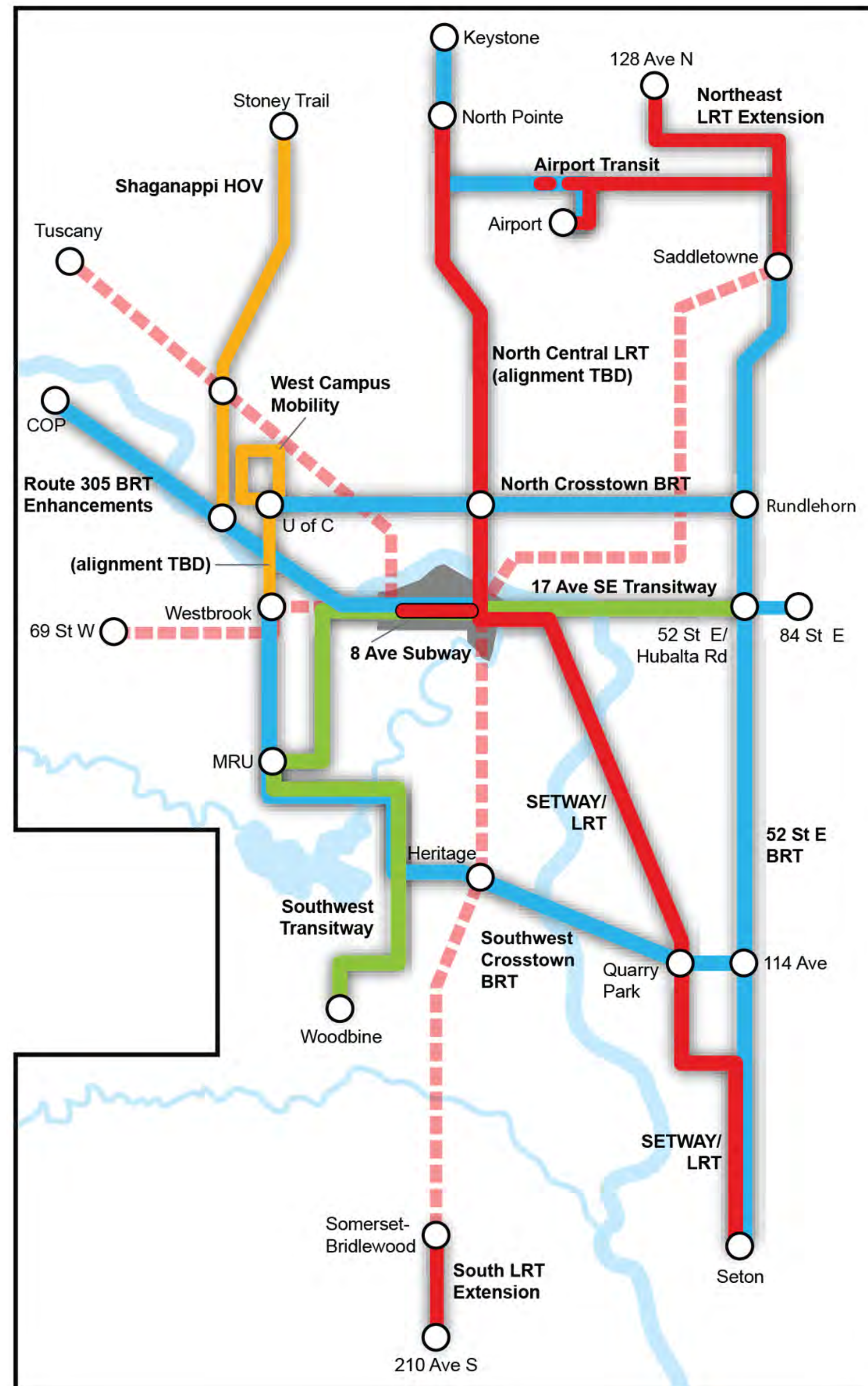


Overpass



## Future Planned Calgary Transit Projects

RouteAhead 10-year Rapid Transit Network  
(includes existing rapid transit network)



### Legend

- Terminus/Connection
- Existing LRT
- Proposed Transitway
- Proposed LRT
- Proposed BRT
- Proposed Rapid Transit (HOV or other)

## Recommendations

- Upgrade and enhance bus stops along Crowchild Tr. to improve accessibility including:
  - Provide new stops on University Dr. for connections to 16 Ave. N.W.
  - Relocate Crowchild Tr. stops to Kensington Rd. interchange ramps.
  - Relocate 17 Ave. S.W. stops further north on Crowchild Tr.
- Accommodate convenient routes for people who walk and bike to transfer between local routes and primary transit services including:
  - Red Line LRT at Banff Trail Station.
  - North Crosstown BRT on 16 Ave. N.W. near Motel Village and University Dr.
  - Southwest BRT on Crowchild Tr. near 17 Ave. S.W.
- Maintain all east-west crossing locations over Crowchild Tr., allowing continuation of east-west transit connections (e.g. 16 Ave. N.W., 5 Ave. N.W., Kensington Rd. and 17 Ave. S.W.).
- Accommodate extended bus-only shoulder lanes in the long-term plan.

## Examples of Stops and Transit Infrastructure

(All photos courtesy of google.ca and project team)



Calgary Transit bus



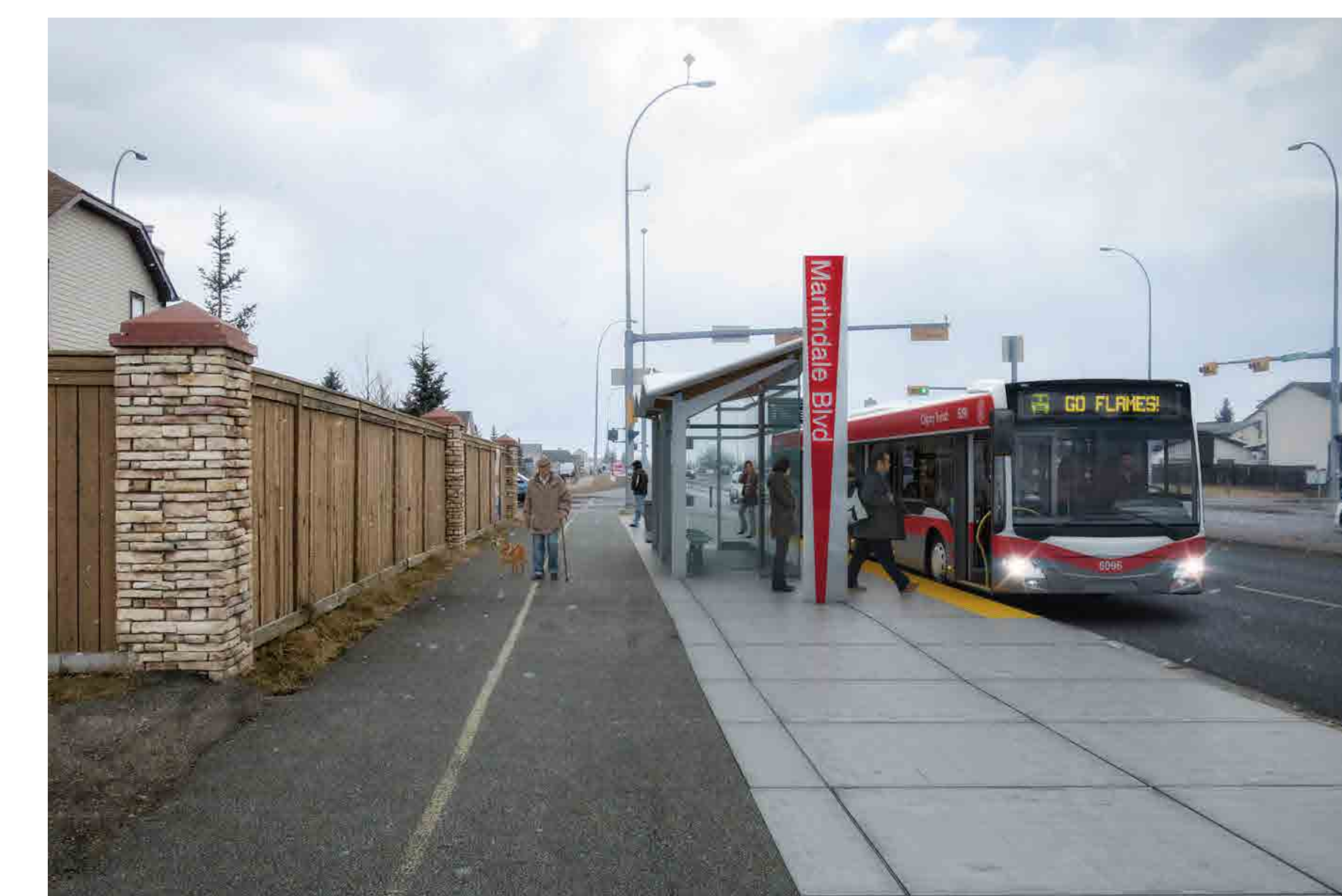
Enhanced bus stops



Banff Trail LRT station



Enhanced bus stops



Enhanced bus stops



Bus-only shoulder lane



## Proposed Green Spaces

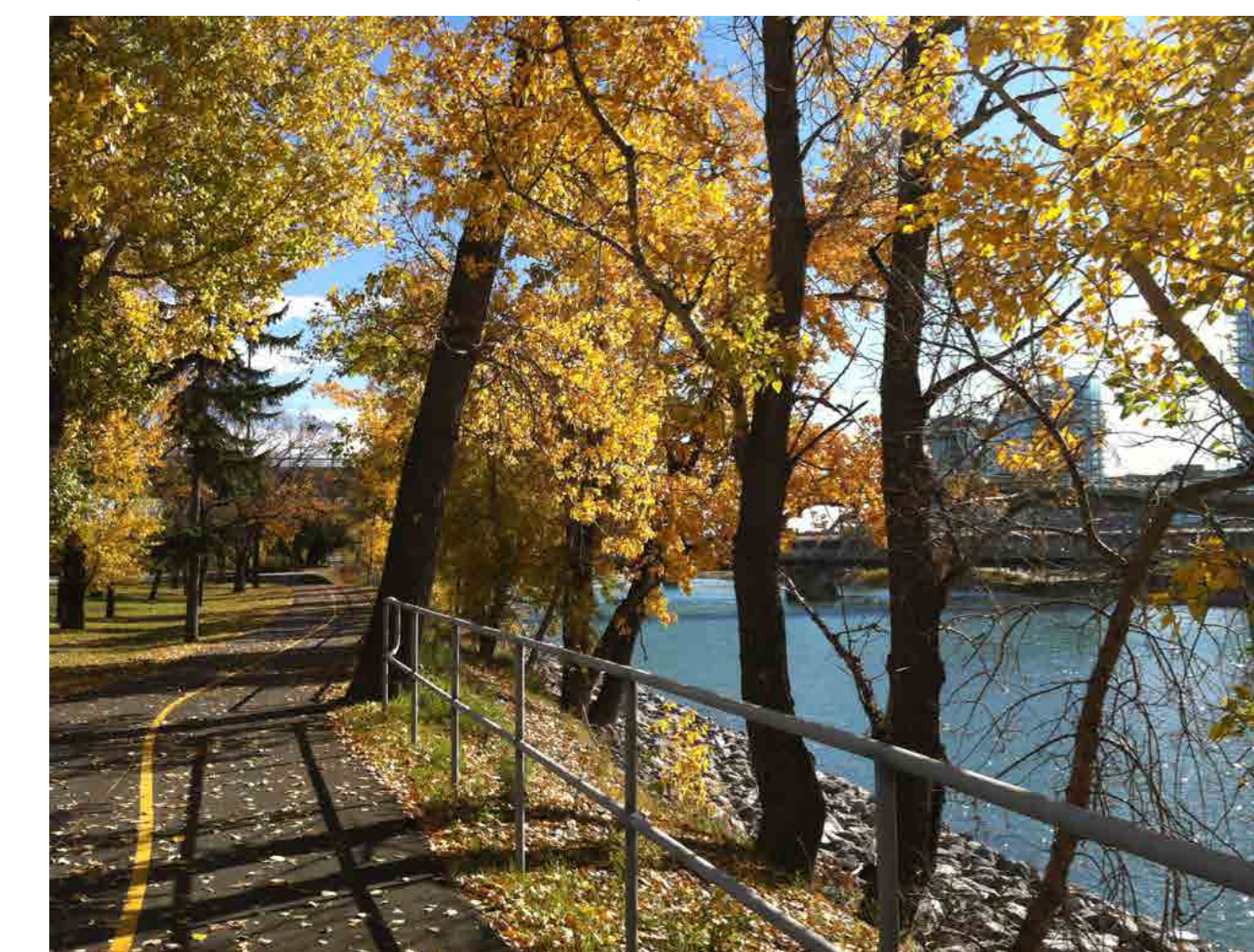


## Recommendations

- A** Redevelop surplus land on east side of 24 Ave. N.W. interchange with enhanced landscaping following construction, providing a green buffer to the bordering community.
- B** Redevelop surplus land on east side of 16 Ave. N.W. interchange with enhanced landscaping following construction, providing a green buffer to the bordering community.
- C** Redevelop surplus land along University Dr. near 13 Ave. N.W. with enhanced landscaping following construction, providing a green buffer to the bordering community.
- D** Redevelop 5 Ave. N.W. with enhanced landscaping and land bridge-style pedestrian overpass across Crowchild Tr.
- E** Provide 10 metre green buffer area, including pathway, along east side of Crowchild Tr. between noise wall and adjacent properties.
- F** Redevelop some City properties between Westmount Rd. and Memorial Dr. as green space following interchange construction, providing a buffer to the bordering community.
- G** Provide additional green space along Bow River as a result of relocation of Memorial Dr. exit ramp.
- H** Enhance and connect existing park spaces north of 17 Ave. S.W. with land bridge-style pedestrian overpass across Crowchild Tr.
- I** Enhance existing green spaces along Crowchild Tr. and 24 St. S.W.

## Examples of Green Spaces, Buffers and Pathways

(All photos courtesy of google.ca and project team)



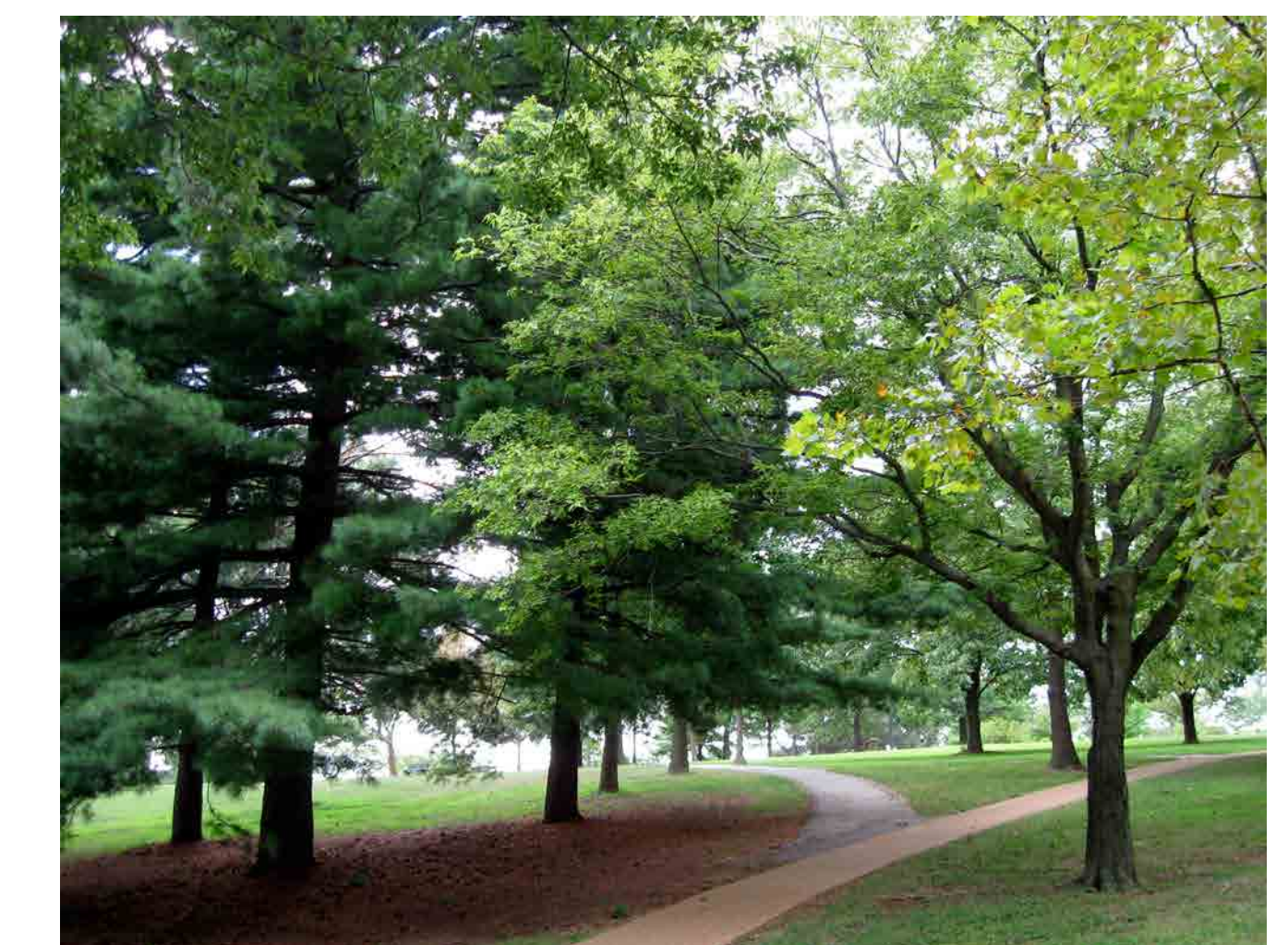
Multi-use pathway within green space



Multi-use pathway within green space



Land bridge



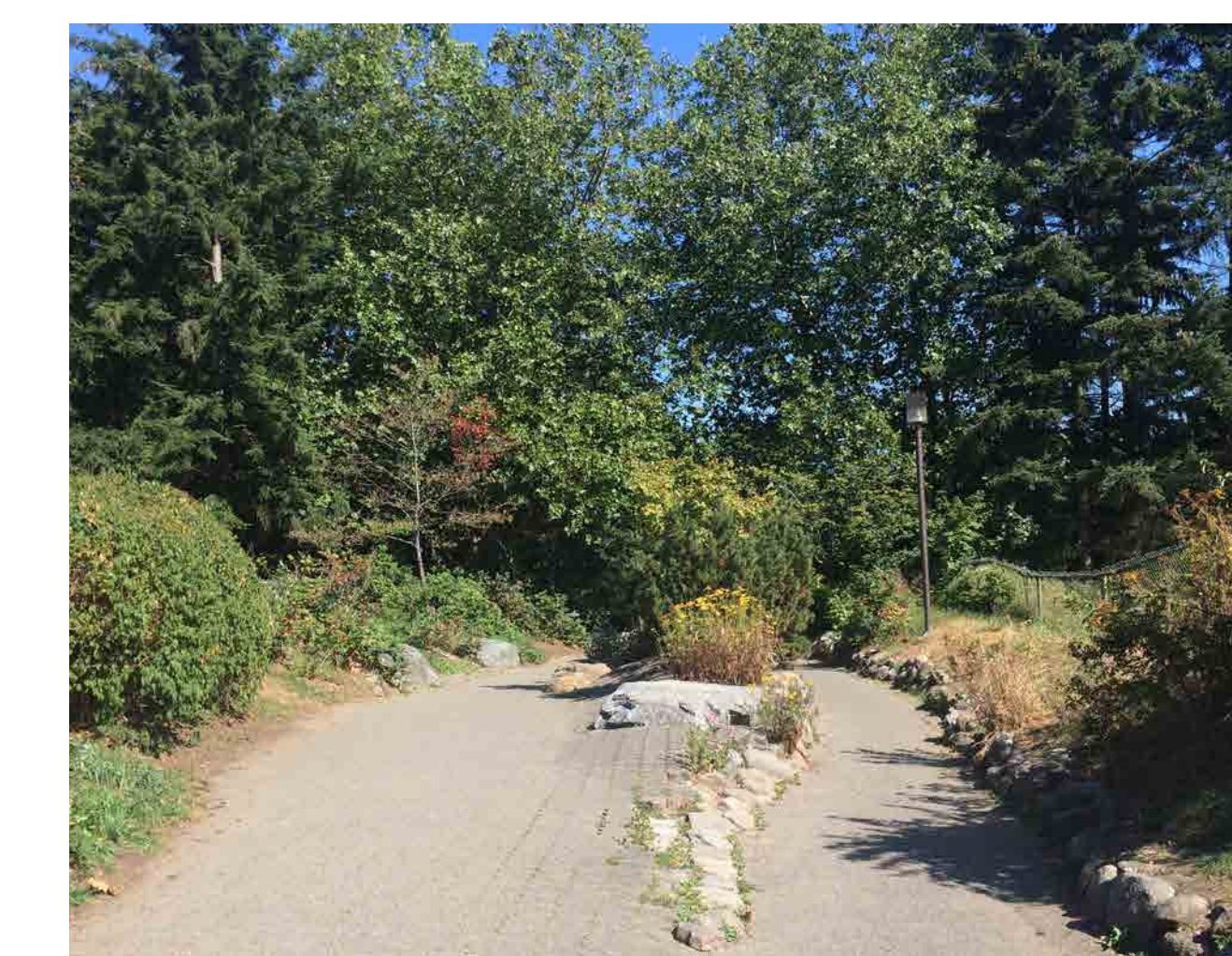
Green space buffer



Multi-use pathway within green space



Land bridge



View on land bridge



Green space buffer





# Transportation Measures

## Recommendations



### Variable speed limits

Consider variable speed limits on Crowchild Tr. if provincial legislation changes in the future. Variable peak-hour speeds would be most effective from 16 Ave. N.W. to 17 Ave. S.W.



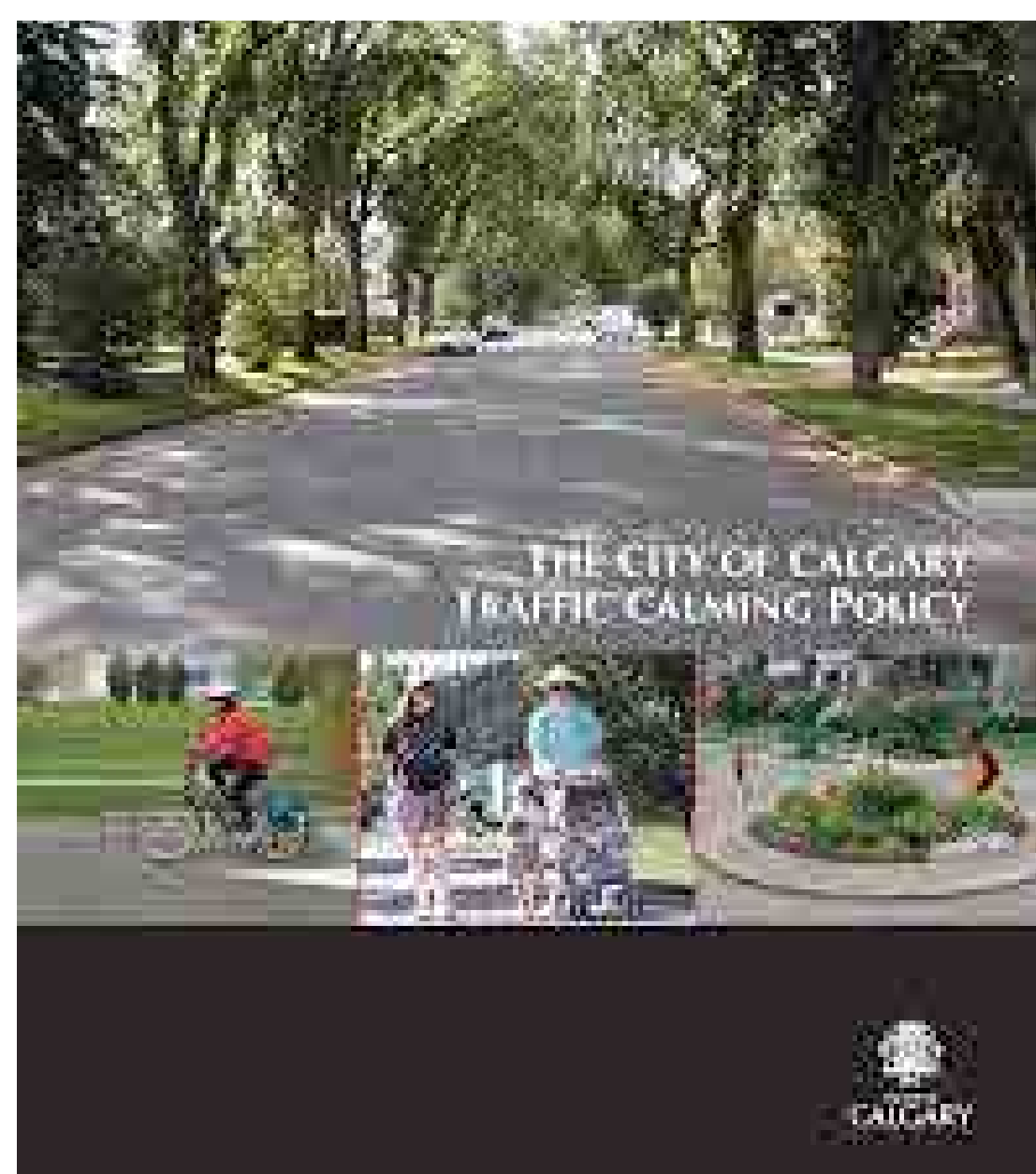
### Reduce speed limits or lane widths

Design Crowchild Tr. from 24 Ave. N.W. to Memorial Dr. to accommodate a 60-80 km/h speed limit. The recommendations maintain standard lane widths of 3.7 m on Crowchild Tr. Consider lane width reduction from to 3.5m at the detailed design stage, if required.



### Bus-only lanes

Accommodate extended bus-only shoulder lanes in the long-term plan.



### Mitigate neighbourhood traffic

When changes to Crowchild Tr. are implemented, work with the bordering communities to address any implications the changes would have to traffic patterns on local streets.

(All photos courtesy of google.ca and project team)



# PHASE 1 - Engagement Process



## Engagement Plan

Phase 1 was about determining how to engage communities and Calgarians throughout all phases of the Crowchild Trail Study.



## We asked:

How do we have the most effective conversation possible about the Crowchild Trail Study?

## What we heard:

Engagement Tool	Response
Online - provide comments	[Green bar]
Online - interactive discussion	[Red bar]
In-person session - with an agenda (e.g. workshop)	[Cyan bar]
In-person session - drop-in	[Orange bar]
Drop-in session - at a non-City event or festival	[Dark blue bar]
Site walks or visits	[Yellow bar]
Other (please specify)	[Green bar]

- Stakeholders told us they would like:
- Accurate, relevant and timely information
  - Information that is easy to understand
  - Demonstration of how their input was used; and if not, why not
  - Productive and informative conversations
  - Sufficient opportunity for input
  - Communication about key project decisions and milestones

## Outcomes:

The Engagement Design Team developed the following 10 Guiding Principles to govern how engagement will be done on the Crowchild Trail Study:

- Provide multiple entry points into the conversation
- Clearly define the focus of engagement based on the needs of the project
- Respectful dialogue
- Use the appropriate tools at appropriate times
- Demonstrate transparency
- Be responsive to stakeholders
- Build trust and show accountability
- Use plain language
- Instill learning into the process
- Follow an open, well-defined process

The Engagement Plan included:

- Open houses/drop-in sessions
- Workshops
- Pop-up events in the community
- Walking tours
- Bus tour
- Online input tools
- Door knockers
- Community idea boards



## We would like to hear from you:

Is it clear how public input was used to determine engagement activities for the study?

Very clear	Place Dots Here
Somewhat clear	Place Dots Here
Not very clear	Place Dots Here
Not clear at all	Place Dots Here

Which engagement activities did you think were most effective or useful throughout the study?

Open Houses/ Information Sessions	Place Dots Here
Workshops	Place Dots Here
Talking to team members at drop-in events in the community	Place Dots Here
Online input tool	Place Dots Here
Walking tours	Place Dots Here
Bus tours	Place Dots Here
Idea boards in the community	Place Dots Here
House visits / information packages from community associations (Phase 2)	Place Dots Here

Which activities could have been improved, and how?

Place Sticker Notes Here



# PHASE 2 - Confirm Project Goals

## Phase 2

## Confirm Project Goals

02

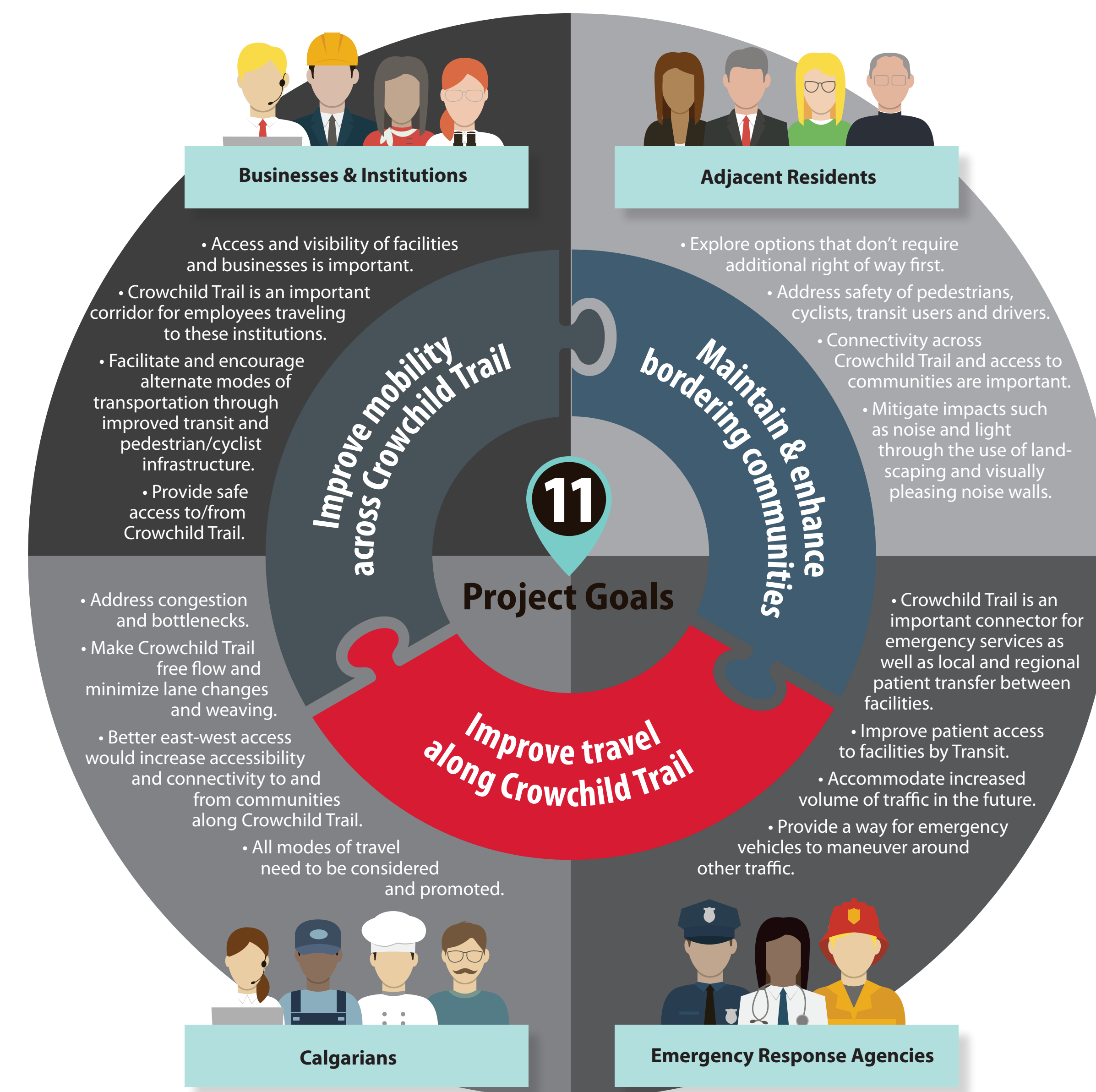
Phase 2 was about understanding what's important to stakeholders when thinking about maintaining and enhancing bordering communities, and improving travel along and across the Crowchild Trail corridor. We asked participants to share their ideas and concerns, then turned that information into project goals.



## We asked:

Participants to share their ideas to develop goals for the study

## What we heard:



## Outcomes:

### 11 Project Goals Developed

#### Key Principle # 1: Maintain and Enhance Bordering Communities

- Prioritize concepts that fit within existing City-owned lands over concepts that require purchasing private property.
- Address how changes to Crowchild Trail affect traffic patterns and safety in bordering communities.
- Recommend current and visually-pleasing ways to reduce traffic noise along Crowchild Trail.
- Enhance green spaces, park spaces and pathways along the Crowchild Trail corridor.

#### Key Principle # 2: Improve Travel Along the Corridor

- Provide continuous pedestrian and cycling routes nearby, but not on, Crowchild Trail to connect major destinations along the corridor.
- Provide for convenient, high capacity, high frequency bus service along Crowchild Trail.
- Enhance the Crowchild Trail corridor to better fulfill its role as a primary route for delivery of emergency response and health services, and for connecting to major destinations.
- Provide for more continuous traffic flow on Crowchild Trail that addresses bottleneck points and traffic weaving.

#### Key Principle # 3: Improve Mobility Across the Corridor

- Enhance the safety and accessibility of transit stops throughout the Crowchild Trail corridor.
- Enhance pedestrian and cycling access across Crowchild Trail, both in the number and quality of crossings.
- Ensure alternate access is provided for bordering communities and businesses if access to Crowchild Trail is removed or changed.

## We would like to hear from you:

Is it clear how public input was used to develop the project goals?

Very clear	Place Dots Here
Somewhat clear	Place Dots Here
Not very clear	Place Dots Here
Not clear at all	Place Dots Here

If it is not clear, what do you think was not addressed?

Place Sticker Notes Here

What do you think was a positive outcome of this phase?

Place Sticker Notes Here



# PHASE 3 - Concept Identification



## Phase 3

### Concept Identification

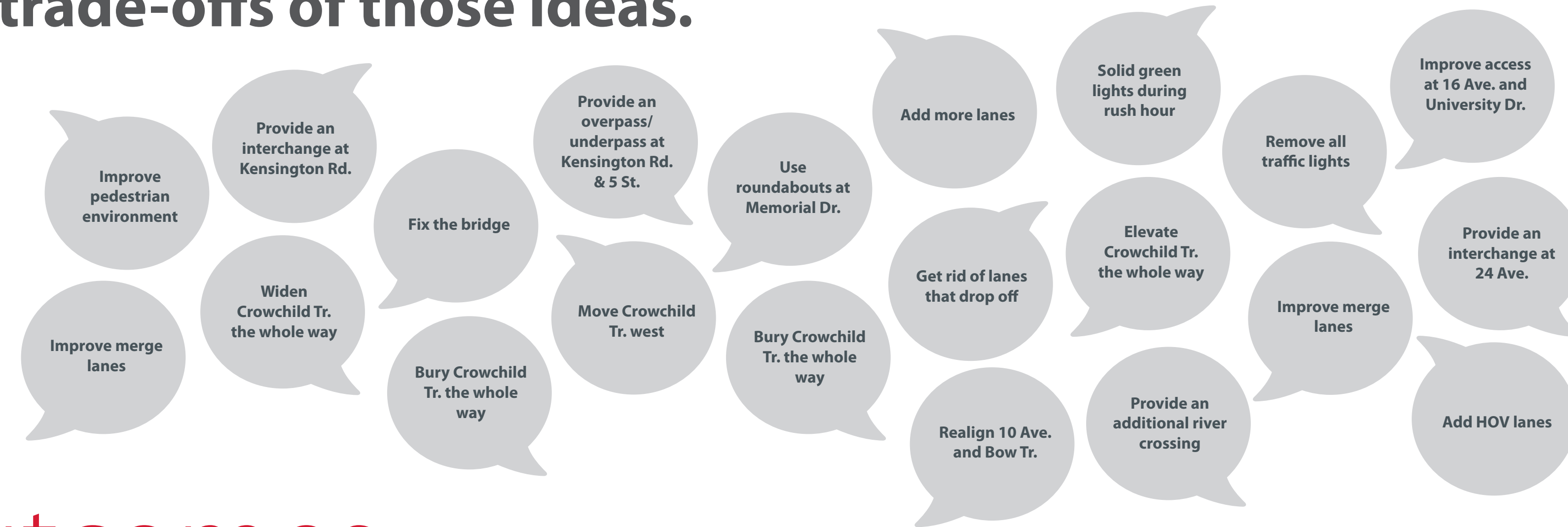
Phase 3 was about identifying and evaluating ideas on possible changes to Crowchild Trail. We asked Calgarians to share their ideas for improvements. From those ideas we came up with 17 groups of ideas which Calgarians helped evaluate in order to identify which ideas would be used to build preliminary concepts.



**GATHER IDEAS**  
OCT-NOV 2015

## We asked:

Calgarians to share their ideas about how to improve Crowchild Tr. and discussed the benefits, impacts, constraints, and trade-offs of those ideas.



## Outcomes

500 unique ideas that came from Calgarians were consolidated into three groups:

- Ideas that did not move forward – for example, replacing traffic lights with stop signs and toll roads
- Ideas to be explored further in Phase 4 – for example, parks and green space, noise attenuation, transit, walking and cycling connections and transportation measures such as reversible and HOV lanes
- Ideas that moved forward for evaluation – these were grouped into 17 ideas, which Calgarians were then asked to evaluate based on how well the ideas met the project three key principles

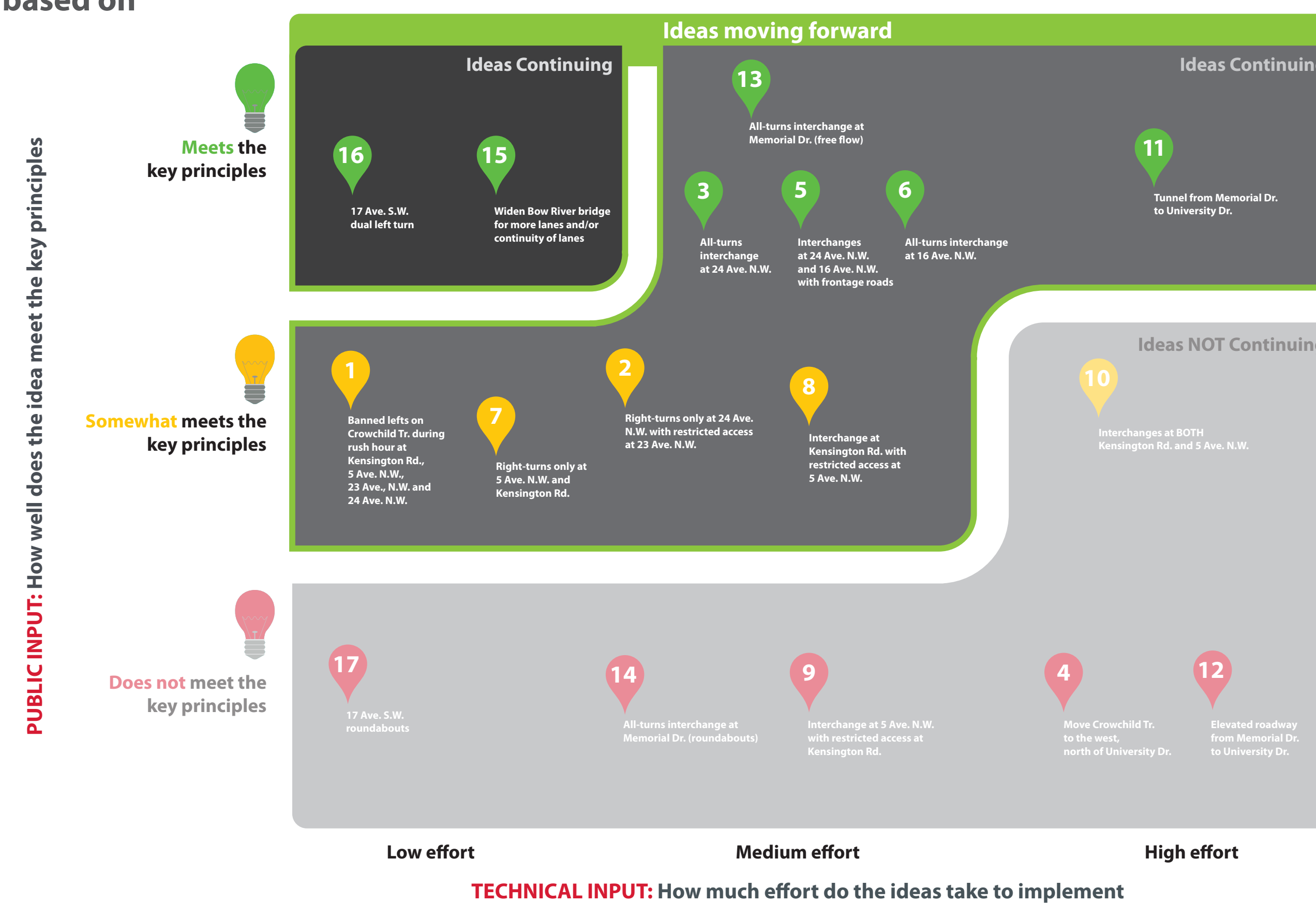
**REFINE IDEAS**  
FEB-MAR 2016

## We asked:

When applied to Crowchild Trail, how well do these ideas meet the 3 Key Principles?

## Outcomes

11 ideas continuing onto Phase 4 based on public and technical input



The above graph represents the combined results of stakeholder and technical team evaluation of the ideas. Ideas that ranked well in this combined analysis were used to develop preliminary concepts for Phase 4: Concept Evaluation.

## We would like to hear from you:

Is it clear how public input was used to develop and evaluate the ideas that moved forward to Phase 4?

Very clear	Place Dots Here
Somewhat clear	Place Dots Here
Not very clear	Place Dots Here
Not clear at all	Place Dots Here

If it is not clear, what do you think was not addressed?

Place Sticker Notes Here

What do you think was a positive outcome of this phase?

Place Sticker Notes Here



# PHASE 4 - Concept Evaluation

## Phase 4 04

### Concept Evaluation

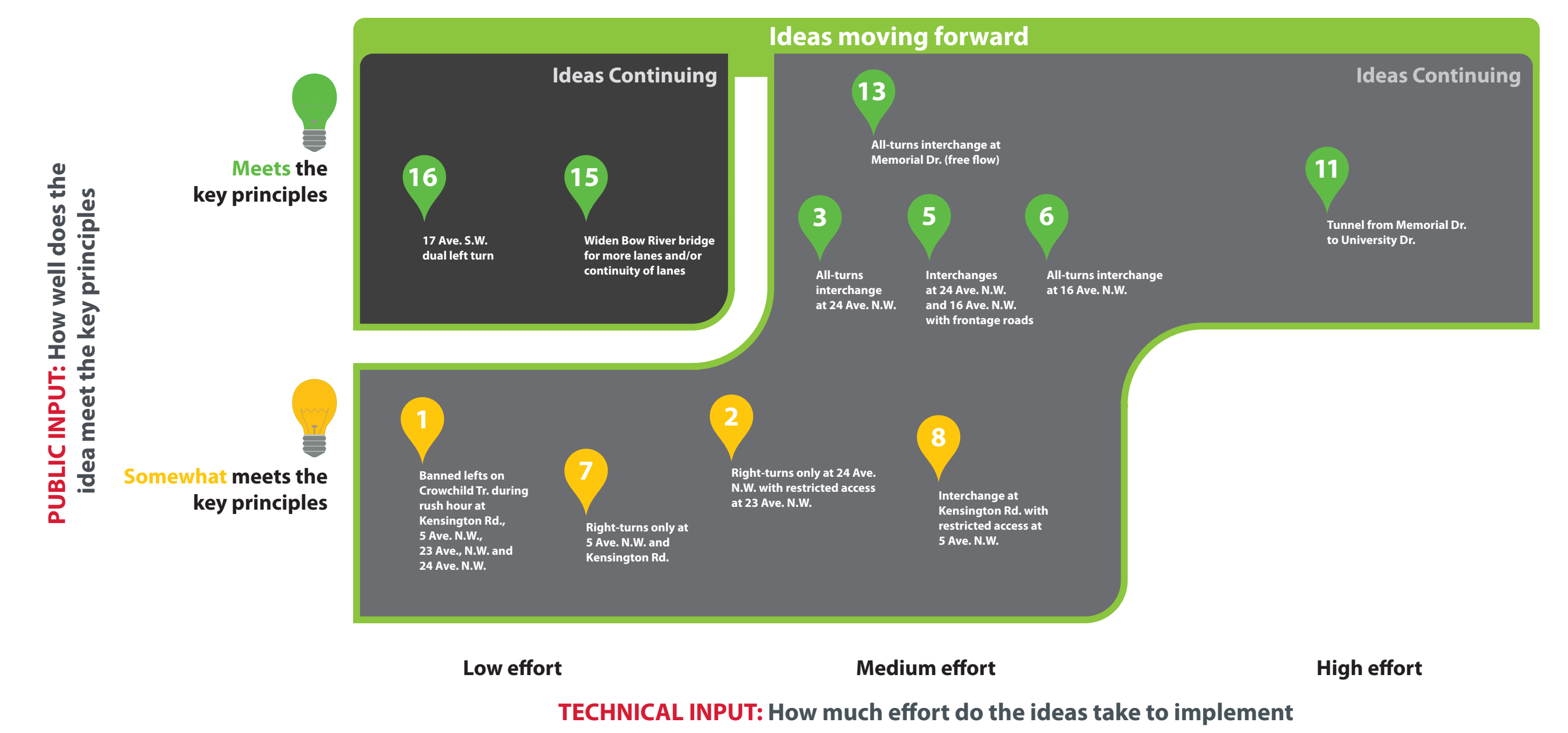
Phase 4 was about evaluating 7 preliminary concepts for Crowchild Trail. Participants were asked to rate how well each concept met the 11 project goals that were developed based on public input in Phase 2.



## We asked:

Calgarians to help us evaluate the 7 preliminary concepts against the project goals

11 Ideas continuing from Phase 3 were grouped into 7 preliminary concepts



CENTRAL SECTION	1. Kensington Interchange	7	8	13
	2. Central Tunnel	11	13	
BOW RIVER BRIDGE SECTION	3. Bow River Crossing	1	15	
NORTH SECTION	4. North Section Optimization	1	2	
	5. 16 Ave. & 24 Ave. Interchanges	2	3	5
SOUTH SECTION	6. 17 Ave. Optimization	16		
	7. Rebuild Crowchild Trail Bridges	15		

## What we heard:

7 preliminary concepts evaluated

Preliminary concepts	Key Principle 1	Key Principle 2	Key Principle 3
1. Kensington Interchange	Green, Yellow, Red	Green, Yellow, Red	Green, Yellow, Red
2. Central Tunnel	Green, Yellow, Red	Green, Yellow, Red	Green, Yellow, Red
3. Bow River Crossing	Green, Yellow, Red	Green, Yellow, Red	Green, Yellow, Red
4. North Section Optimization	Green, Yellow, Red	Green, Yellow, Red	Green, Yellow, Red
5. 16 Ave. & 24 Ave. Interchanges	Green, Yellow, Red	Green, Yellow, Red	Green, Yellow, Red
6. 17 Ave. Optimization	Green, Yellow, Red	Green, Yellow, Red	Green, Yellow, Red
7. Rebuild Crowchild Trail Bridges	Green, Yellow, Red	Green, Yellow, Red	Green, Yellow, Red

Legend:  
■ meets Key Principle well  
■ somewhat meets Key Principle  
■ does not meet Key Principle

## Outcome

Based on the public evaluation of the 7 preliminary concepts above, and further technical review, draft recommendations were developed.

## We would like to hear from you:

Is it clear how public input was used to determine which ideas were used to develop the 7 preliminary concepts?

Very clear	Place Dots Here
Somewhat clear	Place Dots Here
Not very clear	Place Dots Here
Not clear at all	Place Dots Here

If it is not clear, what do you think was not addressed?

Place Sticker Notes Here

What do you think was a positive outcome of this phase?

Place Sticker Notes Here



# PHASE 5 - Concept Selection



## Phase 5 Draft Recommendations

Phase 5 was about presenting the draft recommended short, medium-long term and long-term plans for evaluation. Participants were asked to identify strengths and weaknesses of the plans in order to help the project team refine and finalize them.



**We asked:**  
 We asked the public to review the draft recommendations and identify the strengths and weaknesses in order to help us refine and improve them.

### What we heard:

Common responses regarding strengths of the recommendations	Common responses regarding weaknesses of the recommendations
Balanced plan that meets all three key principles	Need faster implementation
Park enhancements will be good	No need for two pedestrian bridges in the south section / the pathway connection to the Richmond Rd. off-leash park is unnecessary
Right-hand exit to University Dr. will improve traffic flow	No eastbound Bow Trail to southbound Crowchild Trail access
Addition of new bike path and pedestrian connections throughout the corridor	Limited Transit access near 17 Ave.
Improved connectivity and safety for crossings at 5 Avenue N.W.	Short-term plan does not improve pedestrian/cyclist connections or address the lights going northbound
Short-term plan will fix the 10 Ave. S.W. ramp, provide for additional lanes and reduce weaving	Unsure about the ability of traffic circles to manage traffic flow and lack of knowledge about how to use them
Removal of traffic lights will improve traffic flow	More noise attenuation needed in the south section
Lowering Crowchild Trail will reduce noise impacts in the Central section	Concerns about safety of underpasses for people who walk and bike

**Outcomes:**  
 Well balanced plans that meet the 3 Key Principles and 11 goals of the study.

### How the plan was refined:

Walking & Cycling	Green Spaces
Added connections to north/south pathway system from Toronto Cres. and 13 Ave. N.W.	Added additional green buffer space at University Dr., on the east side of Crowchild Tr.
Changed crossing of Memorial Dr. to a combination of overpass/underpasses to address concerns about underpasses at this location	Provided additional green buffer space on east side of Crowchild Tr., north of 5 Ave. N.W.
Added enhanced overpass at Sonora Ave. for a better pedestrian experience	Noise
Moved the location of the pedestrian overpass south of 17 Ave. S.W. to miss the dog park on the east side of Crowchild Tr.	Extended location of the noise wall on the north side of 5 Ave. N.W., on east side of Crowchild Tr. to provide better protection for homes along 6 Ave. N.W.
Moved the location of the pathway between 14 Ave. S.W. and Bow Tr. to separate it from Shaganappi Park.	Access
Enhanced plans for shared space at 24 St. N.W.	Extended frontage road on east side of Crowchild Tr. at Motel Village to ensure access to all current properties

**We would like to hear from you:**  
 Is it clear how public input was used to develop the recommended plan?

Very clear	Place Dots Here
Somewhat clear	Place Dots Here
Not very clear	Place Dots Here
Not clear at all	Place Dots Here

**If it is not clear, what do you think was not addressed?**

Place Sticker Notes Here

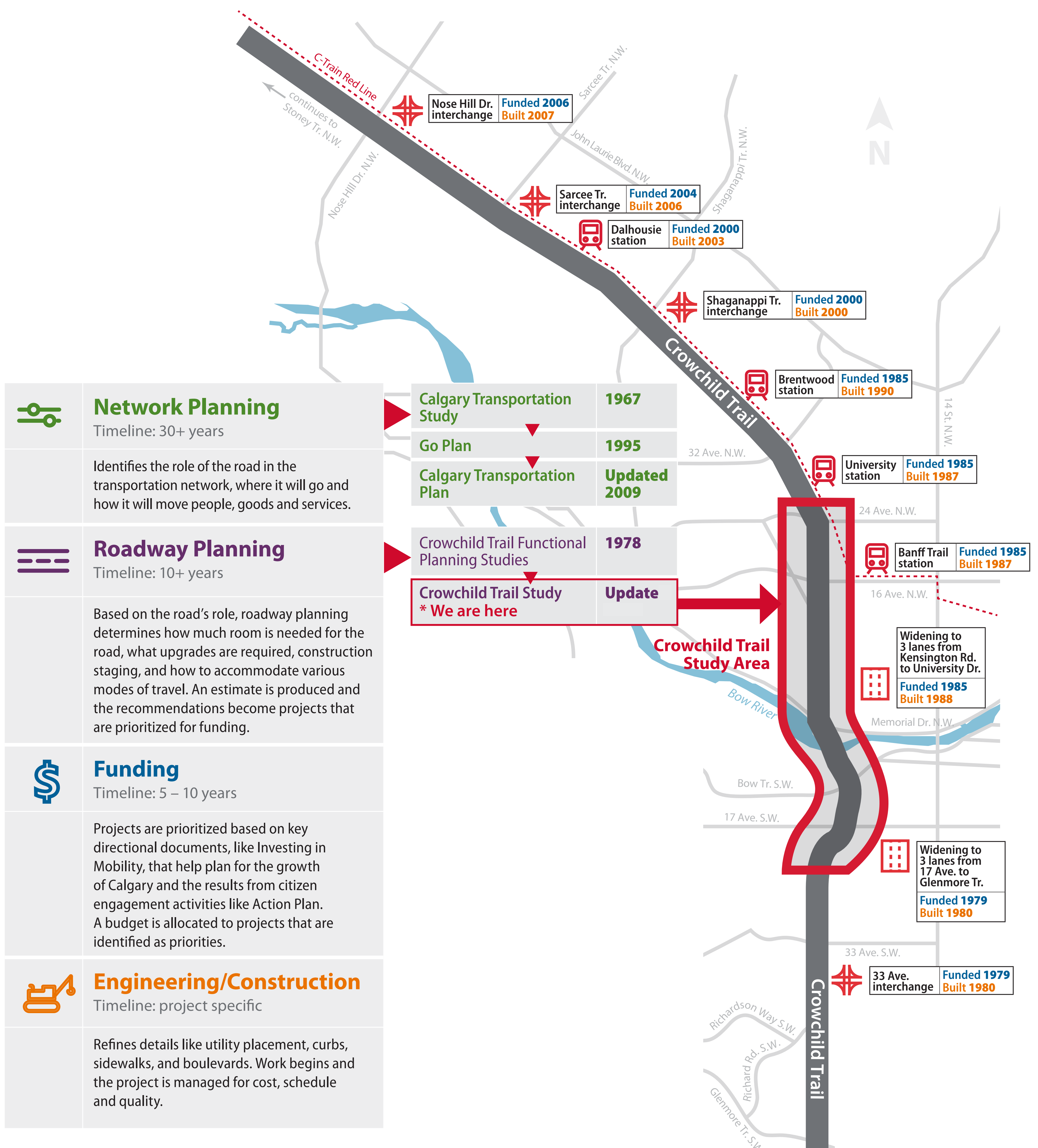
**What do you think was a positive outcome of this phase?**

Place Sticker Notes Here



# Infrastructure Planning Process for Crowchild Tr.

In 1978, an approved roadway planning study recommended upgrades to improve travel along Crowchild Trail. Over the next 30 years, construction of the N.W. Light Rail Transit (LRT) line and most of the recommended upgrades were implemented; however, only a few of the upgrades were made to the road between 24 Ave. N.W. to 17 Ave. S.W. The current Crowchild Trail Study will identify short-, medium- and long-term upgrades to update the recommendations from the 1978 study.





# Short-Term Recommendations

In July 2016, we presented an update to Council’s Standing Policy Committee (SPC) on Transportation and Transit. We recommended that The City advance planning and design of several short-term changes and upgrades to Crowchild Tr. that can be implemented over the next five years.

The estimated cost to implement the short-term recommendations is \$90 million. If funding is confirmed, the projects listed below could move forward with construction and implementation. For future updates on construction of the short-term recommendations visit [calgary.ca/crowchild](http://calgary.ca/crowchild).

## Recommendations

Left-turn restriction during AM and PM peak periods on northbound Crowchild Tr. to westbound 24 Ave. N.W.

### North

Change un-signalized left turns on Crowchild Tr. to right-turns only in select locations.

Construct new ramp to connect westbound 16 Ave. N.W. to northbound Crowchild Tr.

Construct noise walls along Crowchild Tr. in select locations.

Left-turn restriction during AM peak period on northbound Crowchild Tr. to westbound Kensington Rd.

### Central

Signalized pedestrian crossing at Parkdale Blvd. and Kensington Rd. to connect to Bow River Pathway.

Extend pathway along north side of Memorial Dr. from Kensington Rd. to connect to pedestrian overpass at 21 St. N.W.

Provide additional northbound lane from Memorial Dr. to 5 Ave. N.W. within existing road footprint.

Opportunity for future loop ramp from westbound Memorial Dr. to southbound Crowchild Tr., Parkdale Blvd. pedestrian overpass and Memorial Dr. pedestrian overpass.

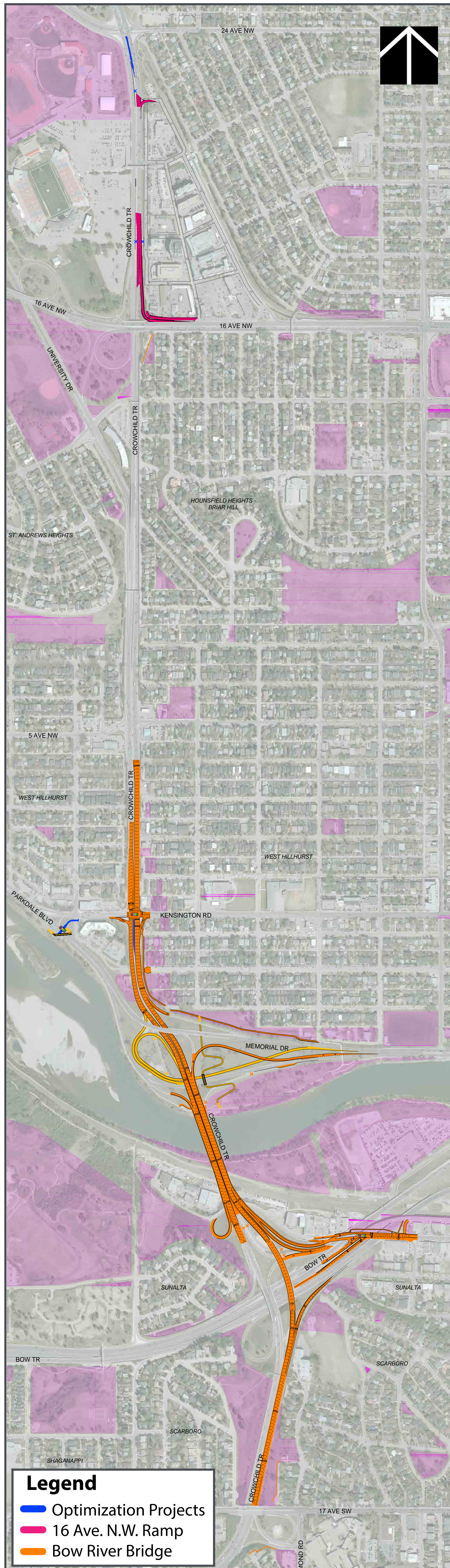
Widen Bow River Bridges to include an additional lane in each direction.

### South

Widen northbound Crowchild Tr. Bridge over Bow Tr. to include an additional lane.

Realign westbound Bow Tr. and 10 Ave. S.W. ramps to right-hand side of Crowchild Tr.

Construct noise walls along Crowchild Tr. in select locations.





# Planning & Funding of Recommendations

The map to the left demonstrates how the medium- and long-term recommendations could be grouped or staged for construction. Implementation of the medium-term recommendations is anticipated beyond 10 years from today. The long-term plan is anticipated beyond 30 years from today.

The cost estimates are inclusive of all elements of the recommended plans: infrastructure, walking and cycling connections, noise attenuation, transit, green spaces, transportation measures and land acquisition.

The estimated cost to implement the medium-term recommendations is \$1.3 billion (\$800 million to \$2.2 billion, Class 4 estimate range in 2016 dollars). The estimated cost to implement the long-term recommendations is \$250 million (\$150 million to \$400 million, Class 4 estimate range in 2016 dollars).

## Medium-Term Recommendations (Beyond 10+ years)

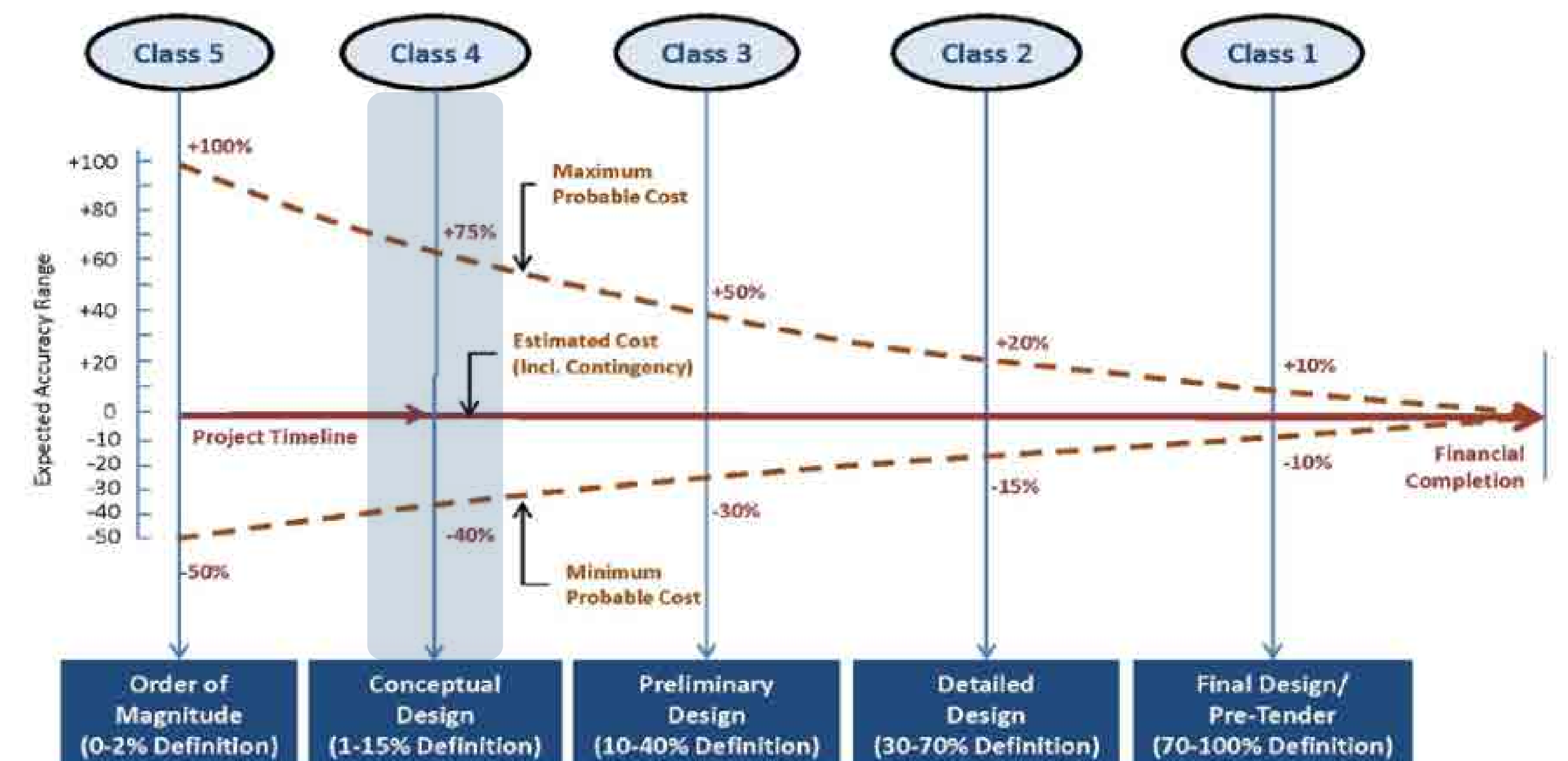
- █ 24 Ave. N.W. Area
- █ 16 Ave. N.W. and University Dr. Area
- █ 5 Ave. N.W., Kensington Rd., and Memorial Dr. Areas
- █ 17 Ave. S.W. Area

## Long-Term Recommendations (Beyond 30+ years)

- █ Bow River Bridge Area

## Project Cost Estimate Hierarchy

Transportation projects follow The City of Calgary Project Management Framework. This is consistent with industry standards and best practices and uses the following five-stage process for estimating and establishing budgets over the entire life of a project.





# Thank you for your participation in this study!

## Next steps

- We are using the feedback from this phase to report to Council on the final recommendations and the public engagement process. In addition, we are compiling the lessons learned to help improve future transportation studies.
- We anticipate presenting the final recommendations to Council in early 2017.

For updates on the recommendations or for more information, please visit [calgary.ca/crowchild](http://calgary.ca/crowchild) or contact **311**.