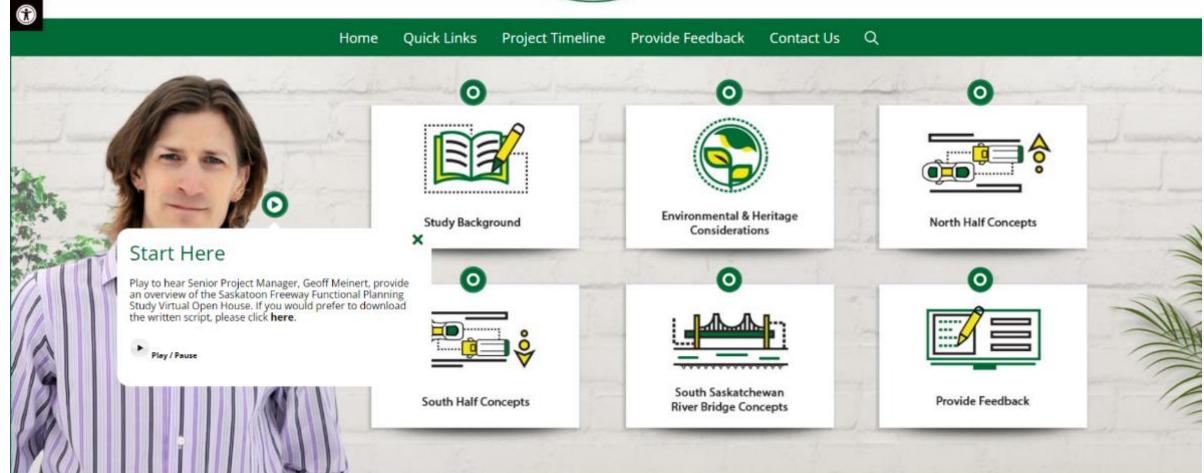
Saskatoon Freeway VOH https://voh.saskatoonfreeway.org





Start Here

Play to hear Senior Project Manager, Geoff Meinert, provide an overview of the Saskatoon Freeway Functional Planning Study Virtual Open House. If you would prefer to download the written script, please click here. Hello and welcome to the Virtual Information Session for the Functional Planning Study of the Saskatoon Freeway Project. My name is Geoff Meinert and I work with the Saskatchewan Ministry of Highways.

We are in the midst of a three-year study to determine how the Saskatoon Freeway will look and operate. When it is built, the freeway is expected to be a 55-kilometre stretch of divided highway that begins at Highway 11 south of Saskatoon and connects with Highway 7 west of the city.

During this study, we'll determine the location and configuration of at least 17 interchanges, five railway overpasses, and 1 major bridge.

It's important to note that the Ministry does not expect construction for another 15 years.

We've split the plans for Phase 2 into two areas:

- The north section which runs from the South Saskatchewan River to Highway 5.
- The south section which runs from south of Highway 5 to Highway 11 south.

You can learn more about both sections in dedicated rooms we've created. In other rooms, you can learn how we're managing environmental and heritage considerations - including concepts for crossing the swales – and concepts for a bridge over the South Saskatchewan River.

Click on any flashing green icon to learn more and see detailed maps. If you are visiting on a mobile device, please rotate it horizontally or view in landscape mode.

During certain times, we're also offering a LiveChat where you can talk to a member of our project team. Check for our available LiveChat hours here in the lobby.

We're sharing a lot of information. Feel free to visit this website multiple times. The Information Session will be running until March 2nd.

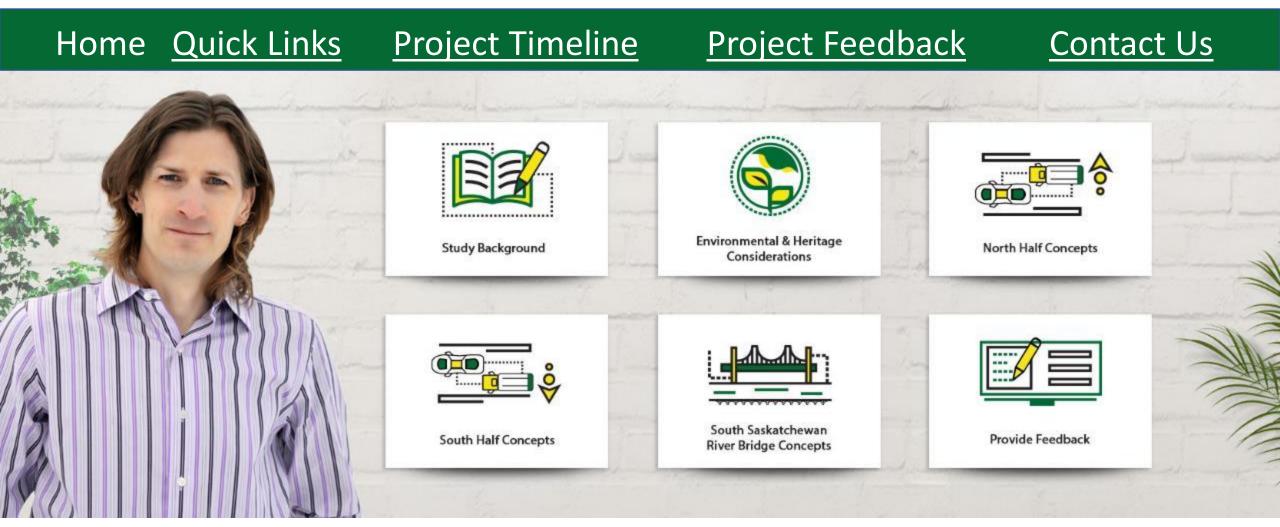
We welcome your feedback and questions on anything you see. You can also reach out to the Project Team by clicking the 'contact us' button. Click the 'subscribe' button to sign-up for Project updates.

We'll consider all your feedback as we prepare a concept that will be shared at another virtual session later this spring.

I hope you enjoy your visit ... and thank you.

Click here to return to the Saskatoon Freeway Virtual Open House





Lobby Study Background Environment & Heritage North Half Concepts South Half Concepts River Bridge Concepts

Welcome to the public online consultation for the Ministry of Highways' functional planning study on the Saskatoon Freeway, which runs from February 16 to March 2, 2021. We invite you to review the information, ask questions and provide feedback.

The Saskatoon Freeway is expected to be a 55-kilometre divided highway, with a minimum of four lanes, that begins at Highway 11 south of Saskatoon and connects with Highway 7 west of the city. Construction is not expected for at least 15 years.

We've divided this public consultation into five rooms, each with a specific focus:

1.<u>STUDY BACKGROUND</u>: Learn about the purpose of the study and what the design team must consider.
 2.<u>ENVIRONMENTAL AND HERITAGE CONSIDERATIONS</u>: Discover how we're managing environmental considerations, especially where the freeway will cross the sensitive swales area.

3.<u>NORTH HALF CONCEPTS</u>: Consider concepts for the northern section of Phase 2, between Highway 5 and the South Saskatchewan River.

4.<u>SOUTH HALF CONCEPTS</u>: Consider concepts for the southern section of Phase 2, between Highway 11 South and 8th Street.

5.<u>SOUTH SASKATCHEWAN RIVER BRIDGE CONCEPTS</u>: Learn about concepts for a bridge across the South Saskatchewan River.

Your feedback will help us prepare a preferred route for Phase 2. Later this year, we'll ask you again for additional feedback.

Contact Us

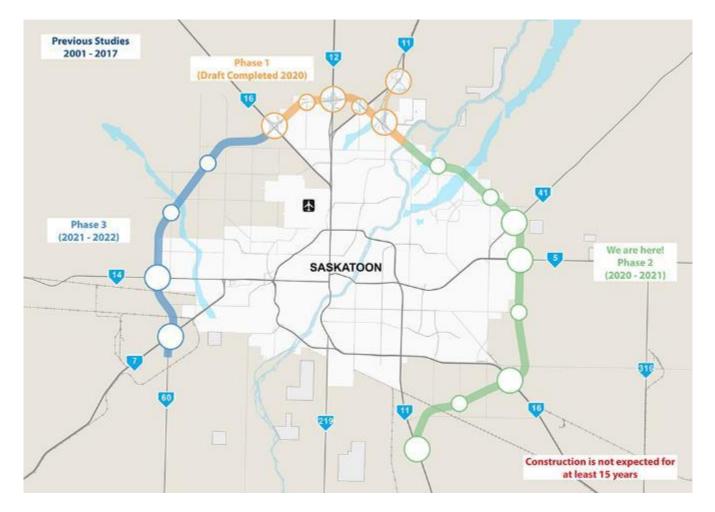
Provide Feedback

Quick Links

Study Background

- <u>Why the Freeway is Needed;</u> <u>What Is a Functional Planning</u> <u>Study</u>
- <u>Functional Planning Study Area</u> and Schedule
- <u>Results from Phase 1</u>
 - <u>Functional Planning Study -</u> <u>Phase 2</u>
- Design Factors
- Technical Considerations
- Method to Evaluate Concepts
- Public Engagement





If you have questions, please use the **Contact Us** button that appears on every page.

Environmental & Heritage Considerations

- Environmental and Heritage Studies in Phase 2 Area
- Focus Groups and Workshop Feedback
- Bridge and Causeway Concepts for Crossing the Northeast Swale
- Wildlife Crossings and Fencing Concepts
- <u>Swales Crossing Concept 1</u>
- <u>Swales Crossing Concept 2</u>
- <u>Swales Crossing Concept 3</u>
- <u>Multi-Use Paths</u>

•North Half Concepts

- North Half Study Limits
- North Half Concept Overview
- North Half Concepts Highway 41 Existing Alignment
- North Half Concepts Highway 41 Realignment
- <u>Central Avenue Interchange Concepts</u>
- Highway 41 Interchange Concepts with Current
 Alignment
- Highway 41 Interchange Concepts with Realigned
 Highway
- Highway 5 Interchange Concepts

South Half Concepts

- South Half Study Limits
- <u>8th Street Interchange Concepts</u>
- Highway 16 Interchange Concepts
- Floral Road Interchange Concepts
- Grasswood/Floral Road Interchange Concept
- Highway 11 Interchange Concepts

South Saskatchewan River Bridge Concepts

- Bridge Concepts
- <u>Cable-Stayed Bridge Concept</u>
- Steel Plate Girder Bridge Concept
- Pros and Cons of each Concept
- Environmental Considerations

Sign-Up For Updates

Quick Links Study Background

- Why the Freeway is Needed; What Is a Functional Planning Study
- Functional Planning Study Area and Schedule
- <u>Results from Phase 1</u>
- <u>Functional Planning Study Phase 2</u>
- Design Factors
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- Highway 11 Interchange Concepts

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- <u>Cable-Stayed Bridge Concept</u>
- Steel Plate Girder Bridge Concept
- Pros and Cons of each Concept
- Environmental Considerations

Live Chat Schedule

February 16 - 17, 2021 Daily 1:00pm – 5:00pm

February 18, 2021 1:00pm – 9:00pm

February 19, 2021 1:00pm – 5:00pm

February 20, 2021 5:00pm – 9:00pm

February 22, 2021 Daily 1:00pm – 5:00pm

February 25, 2021 1:00pm – 9:00pm

February 26, 2021 1:00pm – 5:00pm

February 27, 2021 5:00pm – 9:00pm

March 1 - 2, 2021 1:00pm – 5:00pm

Contact Us

Provide Feedback

Project Timeline – Saskatoon Freeway VOH

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Project Timeline

2001 - 2017 Previous Studies

2018 - 2020 Functional Planning Study Phase 1 Draft Phase 1 Draft Functional Plan undergoing review for approval

2020 - 2021 Functional Planning Study Phase 2 We Are Here **2020** Functional Planning Study Phase 2 Kick-off in Q2 2020 **2021** Functional Planning Study Public Information Session 1 in Q1 2021

2021 - 2022 Functional Planning Study Phase 3 Phase 3 will begin in Q2 2021, following the completion of Phase 2 Draft Functional Plan

Construction Construction of the Saskatoon Freeway is beyond 15 years

Contact Us

Provide Feedback



Provide Feedback

Thank you for visiting the public online consultation for the Ministry of Highways' functional planning study on the Saskatoon Freeway. We appreciate the time you've spent learning about this important project. If you haven't already provided your feedback while reviewing the materials, we invite you to do so now. Below you will find all the surveys embedded throughout the five virtual rooms.

Please take some time to tell us what you think of our draft concept options. Your feedback will help us prepare a preferred route for Phase 2. Later this year, we'll ask you again for additional feedback.

Contact Us

Whether you have a question, comment, or concern about the Saskatoon Freeway functional planning study, we want to hear from you. Use the fields below to provide us with your input and contact information. Our project team will work to reach out to you as soon as possible.

Surveys

1.<u>Contact Us</u>

2.Environmental & Heritage Considerations

3.North Half Concepts – Central Avenue Interchange Concepts

4.North Half Concepts – Highway 41 Interchange Concepts with Current Alignment

5.North Half Concepts – Highway 41 Interchange Concepts with Realigned Highway

6.North Half Concepts – Highway 5 Interchange Concepts

7.South Half Concepts – 8th Street Interchange Concepts

8.South Half Concepts – Highway 16 Interchange Concepts

9.South Half Concepts – Floral Roads Interchange Concepts

10.South Half Concepts – Grasswood/Floral Road Interchange Concept

11.South Half Concepts – Highway 11 Interchange Concepts

12.South Saskatchewan River Bridge Concepts – Pros and Cons of Each Concept

13. Closing Questions

Contact Us

Provide Feedback

Contact Us – Saskatoon Freeway VOH



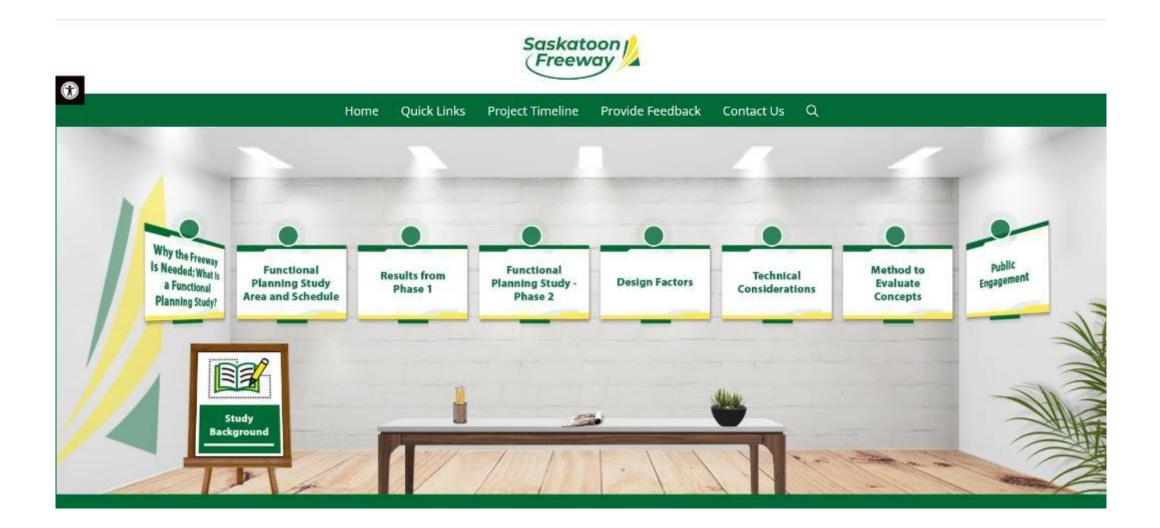
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Study Background – Saskatoon Freeway VOH





Learn about the study's objectives, why the Saskatoon Freeway is needed, timeline for construction, work done on Phase 1, and key considerations during Phase 2.

Why the Freeway is Needed; What is a Functional Planning Study?

The Saskatoon Freeway will:

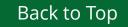
- Address higher traffic volumes resulting from population growth. Since 2008, Saskatoon's population has increased at an annual rate of about 2.3 per cent. The city now exceeds 270,000 people. Surrounding communities have also seen significant growth.
- Improve safety by removing highway traffic from local roads.
- Reduce congestion by diverting large trucks from city roads. This will improve efficiency for producers, shippers, and truckers moving goods to markets.
- Reduce greenhouse gas emissions by improving traffic flow around Saskatoon.

Construction of the Saskatoon Freeway is not expected for at least 15 years.

The Functional Planning Study began in 2019. When completed in 2022, it will identify the preferred route around Saskatoon, including concepts for interchanges and service roads. Our team is using topographic, drainage, geotechnical, environmental and heritage information inside and adjacent to the 500m wide General Location Corridor that was set in 2005. We are also using regional development plans to help predict future traffic volumes and patterns.

Phase 1 of the functional planning study began in 2019 and finished in 2020. Phase 2 will be completed in 2021. Phase 3 will start later in 2021 and finish in 2022.

When all three phases are complete, we will have more accurately identified the land required for the freeway's eventual construction, so some temporary land restrictions will be lifted. Residents and businesses along the existing 500m wide General Location Corridor will also get a better understanding of where and how they may be impacted.



Functional Planning Study Area and Schedule

This map shows the areas being studied in each phase.



Phase 1 was completed in 2020. Phase 2 will be completed in 2021. Phase 3 will start later in 2021 and finish in 2022.





Results from Phase 1

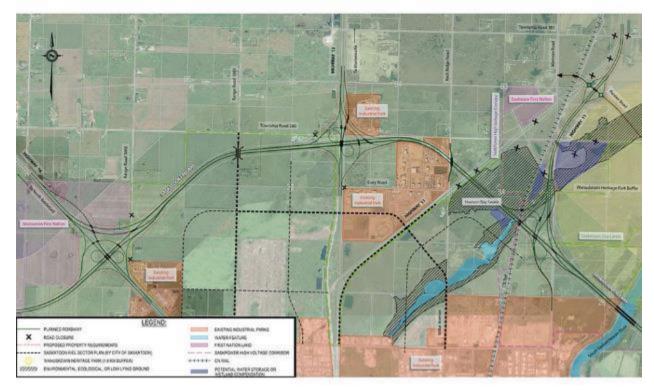
This map shows the areas being studied in each phase.

Phase 1 public consultation began in the spring of 2019 and was completed in February 2020. Phase 1 included:

- Highways 11, 12, and 16
- Wanuskewin Road
- Penner Road
- Rock Ridge Road/Range Road 3053
- CN rail line

A key milestone in Phase 1 was a two-day June 2019 workshop. Technical experts and select stakeholders evaluated four distinct freeway options for the north part of Saskatoon that were designed to address the following:

- Highway to highway connectivity
- Numerous access points to municipal roadways
- Access to Wanuskewin Heritage Park
- Optimum interchange spacing
- Environmental impact on the Wanuskewin Heritage Park buffer area and the Hudson Bay Swale



All options incorporated the City of Saskatoon's plans for the north end of the city.

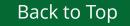
From this workshop, a conceptual set of alignment and interchange configurations was developed for:

- Highway 11, Wanuskewin Road, and Penner Road
- Highway 12
- Highway 16

These concepts were shared at two come-and-go information sessions in Saskatoon in November 2019. Based on feedback from those events, as well as an online survey, a preferred alignment for Phase 1 was developed, including interchange concepts. This was shared at a second come-and-go session in February 2020.

The information from the Phase 1 public information sessions is on the Saskatoon Freeway project website.

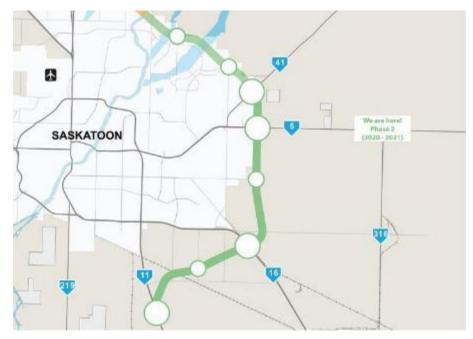
The preferred alignment for Phase 1 has been submitted to the Ministry of Highways for approval.





Functional Planning Study - Phase 2

Phase 2 is the longest of three segments in the functional study. It includes two high-speed connection points - Highway 11 and Highway 16 - that are both part of the National Highway System.



Through this online public consultation, we're sharing freeway concepts that tackle some big challenges, including:

- An interchange where Highway 16 East meets the Saskatoon Freeway
- · How drivers on the east side of Saskatoon will access the freeway
- Interchanges at Highway 5, Highway 41, and Blackley Road that allow for smooth traffic flow
- How the freeway will cross the swales in an ecologically sensitive way
- The type of bridge used to cross the South Saskatchewan River

In the summer and fall of 2020, technical experts and stakeholders were joined by members of the public for three focus group sessions and a workshop on crossing the swales. That work is included in the <u>Environmental and Heritage Considerations Room</u> as well as the <u>North Half Concepts Room</u>.

Your feedback will help us prepare a preferred route for Phase 2. Later this year, we'll ask you again for additional feedback.





Design Factors

The team considered the following design factors. All concepts must:

- Avoid, reduce, or minimize environmental impact, especially in the Small Swale and Northeast Swale
- Include walking and bicycling options for City of Saskatoon and RM roads crossing the freeway, as well as plans for paths along the river and near the swales
- Maintain existing drainage patterns and minimize intrusion into wetlands and other land
- Ensure safe and efficient access to the freeway for residents and businesses
- Accommodate existing railway lines and their future expansion plans



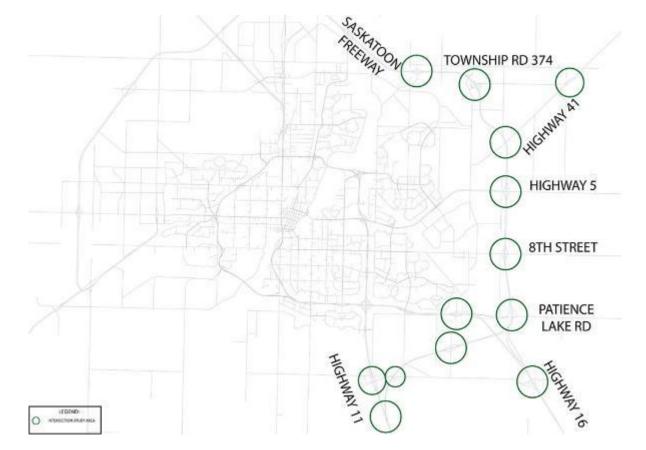
Technical Considerations

The study team had to balance a wide range of technical requirements as they developed concepts for Phase 2 of the freeway. Some of the most important are listed here:

 National Highway System (NHS) - the design must account for Canada's NHS, which supports interprovincial and international trade and travel. The Saskatoon Freeway includes Highways 11, 16 and 7, which are all part of the NHS, and form a key part of the province's core highway system which carries approximately 70 per cent of all provincial highway travel



- Geometric design the design team uses established geometric design standards to guide how they position physical elements of the roadway
- Interchange standards the design team's work must meet established technical standards for interchanges
- Speed the design for the freeway must allow for a maximum legal speed of 110 km/hr
- Travel Demand Model the Travel Demand Model (TDM) considers future area development and any resulting increases in traffic, ensuring that the freeway is designed to account for future traffic volumes



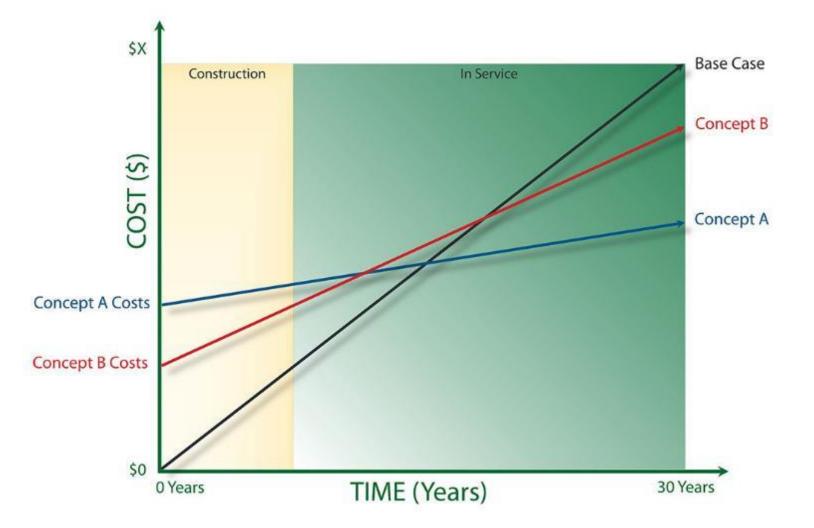
• Level of Service (LOS) - the team must ensure any designs result in minimal congestion on the freeway over the course of its design life (up until 2063), even though the freeway may have a total operating life that extends up to 100 years





Method to Evaluate Concepts

The design team considers a wide range of factors as they evaluated which concepts to include in this public online consultation. These factors are weighted because not all are equivalent in importance. This type of evaluation often reveals that the lowest construction cost may not be the lowest long-term cost or yield the greatest benefits (i.e., return for money spent).



The following list includes the evaluation factors used by the design team:

Financial:

- Capital cost
- Operating cost through to 2063
- Maintenance cost through to 2063

Driver:

- Travel time costs
- Vehicle operating costs
- Safety costs

Environmental:

- Greenhouse Gas (GHG) costs (construction/operation)
- Landscape (native habitat/grasslands)
- Impact to ecologically sensitive areas
- Impact to other wetlands (outside of the swales)
- Impact to breeding and migratory birds
- Impact to species of conservation concern
- Impact to species at risk
- Impact to wildlife movement/connectivity (to existing wildlife crossings)
- Impact resulting from habitat fragmentation
- Lighting illumination impact
- Traffic noise impact
- Surface runoff/water quality
- Impact to heritage resources

Heritage:

- Wanuskewin Heritage Park
- Other heritage sites

Social:

- Public input
- Alignment to municipal development plans
- Active transportation (walking and cycling)

Economic:

- Employment during construction
- Business development/access

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Public Engagement

Since the functional planning study started in 2019, engaging with a wide range of stakeholders - and answering their questions - has been a big part of our work.

We reached out to and met with numerous individuals, families and businesses that own land within and near the 500m wide General Location Corridor. Correspondence with landowners included mail-outs for project updates and consultation notices. The Ministry also met one-on-one with individual landowners.

We met with the following Indigenous organizations:

- Saskatoon Tribal Council
- Metis Nation Saskatchewan
- Moosomin First Nation
- Little Pine First Nation
- Saulteaux First Nation
- Cowessess First Nation
- English River (Des Nedhe Corp.)
- Muskoday First Nation
- Beardy's & Okemasis Cree Nation

Our engagement with environmental/heritage stakeholders includes ongoing discussions with:

- Wanuskewin Heritage Park
- Meewasin Valley Authority
- Saskatoon Nature Society
- Northeast Swale Watchers

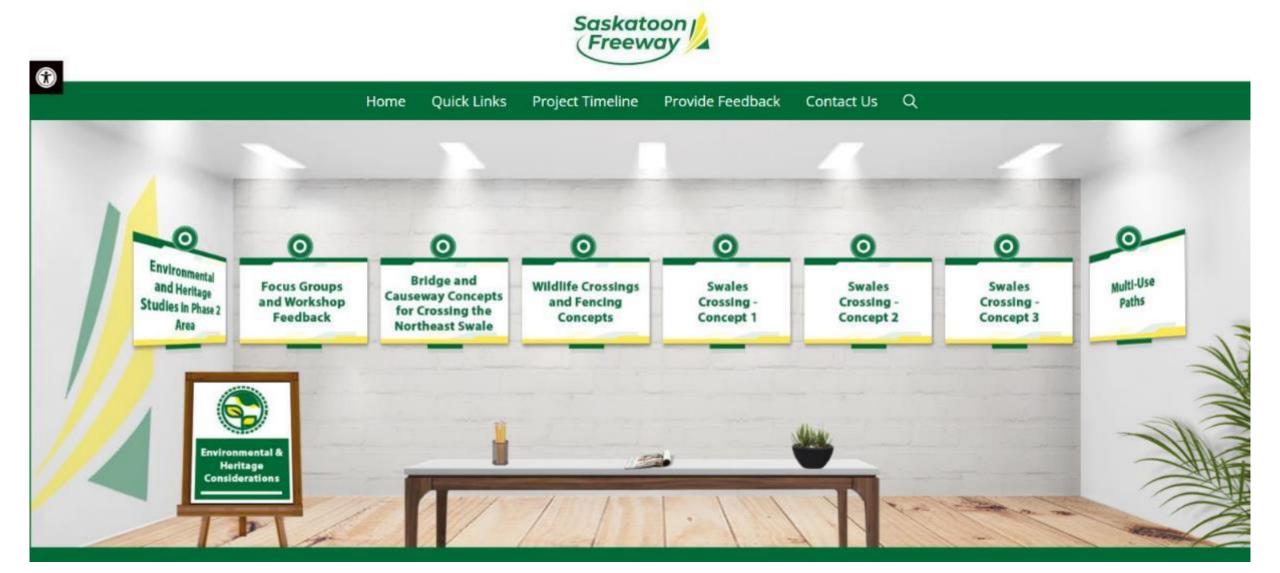
Industry and RM/community stakeholder engagement efforts included meetings with:

- RM of Corman Park
- Saskatoon North Partnership for Growth (P4G)
- City of Saskatoon
- Various business organizations in the Saskatoon area





Environment – Saskatoon Freeway VOH





Environmental & Heritage Considerations

Learn about how we're reducing the impact the Saskatoon Freeway will have on the Northeast and Small Swales.

Your feedback will help us prepare a preferred route for Phase 2. Later this year, we'll ask you again for additional feedback.

Environmental and Heritage Studies in Phase 2 Area

The range of environmental surveys we've completed for the area covered by Phase 2 includes:

- Rapid assessment surveys to identify potential habitat for plants and wildlife, and which trigger more specific surveys if needed
- Surveys in the Northeast and Small Swales focusing on yellow rail, sharp tailed grouse, common nighthawk, and northern leopard frogs
- Wildlife snow tracking in the Northeast/Small Swales and South Saskatchewan River valley
- Vegetation surveys

The Northeast and Small Swales support a diverse range of animals, including sharp tailed grouse, common nighthawks, and northern leopard frogs. We have confirmed this area contains three sharp tailed grouse leks; these are important areas where the male birds perform courtship displays.

We have developed a mitigation strategy to reduce the freeway's impact in the Northeast and Small Swales that includes:

- Recommending freeway lighting that follows Parks Canada's dark sky standards
- Scheduling high-impact construction activities outside of important breeding bird and fish spawning seasons whenever possible
- Using fencing and dedicated animal crossings (either underpasses or overpasses) to stop wildlife from crossing on the freeway

Other key actions resulting from these studies and our ongoing stakeholder engagement include:

- Developing an interchange concept for Central Avenue in an already disturbed/cultivated area that avoids the Small Swale
- Including a bridge concept for crossing the Northeast and Small Swales that minimizes disruptions to wildlife and water
- Developing a plan to rehabilitate previously disturbed land that would offset wetland and other habitat impacted by the Saskatoon Freeway







Focus Groups and Workshop Feedback

Three focus groups held in July 2020 gave the design team insights into the top environmental concerns of stakeholders and residents. Details on these focus groups are on the Saskatoon Freeway project <u>website</u>.

We incorporated these insights into a workshop that focused on developing concepts for the Saskatoon Freeway to pass through the Northeast and Small Swales with the least environmental impact. The workshop included environmental and technical experts and stakeholders. The environmental criteria used to assess concepts can be found in the <u>Study Background</u> room under Method to Evaluate Concepts.

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Next Board

Bridge and Causeway Concepts for Crossing the Northeast Swale

Based on what we learned through studies and stakeholder feedback, it became apparent any crossing of the Northeast Swale had to allow for movement of water, wildlife, pedestrians, and cyclists, while also preserving as much wildlife habitat as possible.

As a result, the design team has developed both a bridge and a causeway concept for crossing the swales.



A bridge is less intrusive than a causeway, but also more expensive (estimated to cost 10-to 20-times more). Both options can accommodate wildlife, pedestrians and cyclists while maintaining water flow and quality.



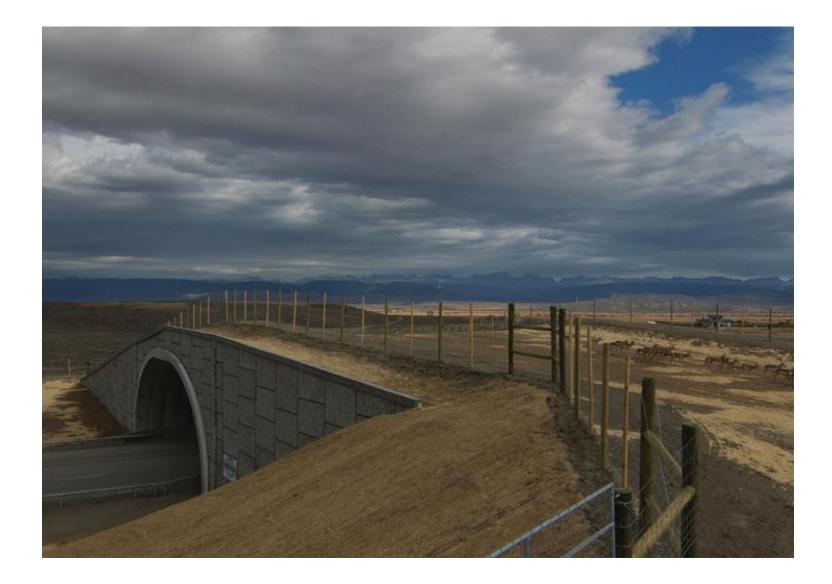




Wildlife Crossings and Fencing Concepts

Two wildlife crossings would be used in the Northeast and Small Swales so wildlife can move safely around the freeway. Multiple culverts will provide safe crossing areas for small mammals.









Through our studies, we learned most wildlife in the area prefer overpasses. Underpasses remain a viable option but would need to be built so natural light gets into the crossing; this would require skylights or breaks between the freeway's eastbound and westbound lanes.

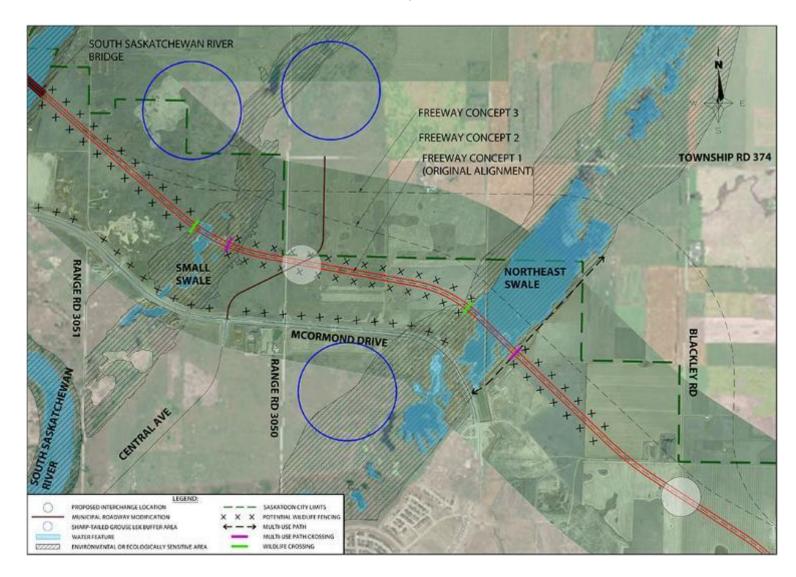
Fencing will be used to direct wildlife to these safe crossing locations.





Swales Crossing - Concept 1

In this concept (red double line on the map), the freeway remains in the middle of the established 500m wide General Location Corridor (2005) and would use wildlife underpasses.



<u>Pros</u>

- · Minimizes crossing over open water
- Preserves the maximum habitat by pushing the freeway closer to McOrmond Drive
- Maximizes the freeway's distance from the location of known sharp tailed grouse leks (important areas where the male birds perform courtship displays)

<u>Cons</u>

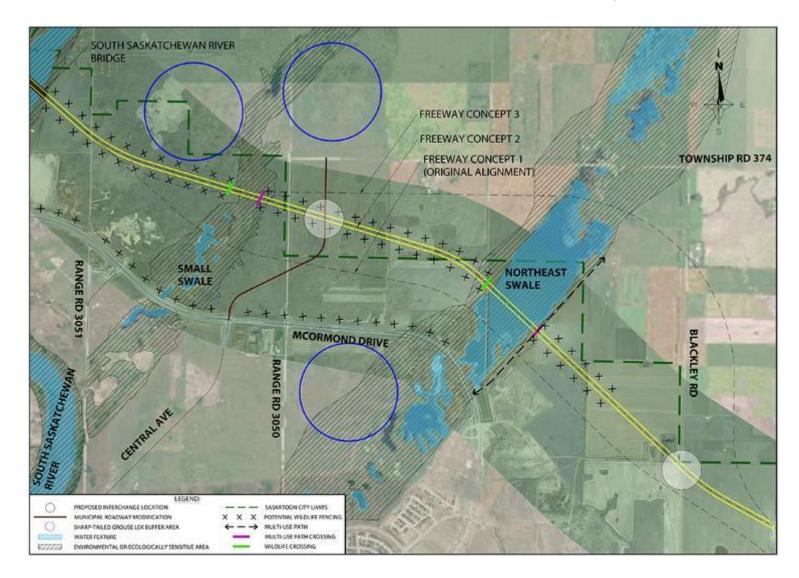
- Crosses a significant portion of Small Swale and has a high impact on native prairie and riparian areas at the south end of the Northeast Swale
- Leaves a small fragment of habitat between the freeway and McOrmond Drive; it can be hard for wildlife to thrive in small fragments
- · Crosses land currently under development
- Impacts an area where common nighthawks were seen
- Impacts amphibian habitat

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Swales Crossing - Concept 2

In this second concept (yellow double line on the map), the freeway has been shifted to the northern edge of the established 500m wide General Location Corridor (2005) and would use wildlife underpasses.



<u>Pros</u>

- Minimizes disturbance to native prairie and riparian areas at the south end of the Northeast Swale
- Requires a narrower overall crossing of the Small Swale in an area that has previously been disturbed
- Increases the distance from the Aspen Ridge neighbourhood
- Avoids a location where common nighthawks were seen

<u>Cons</u>

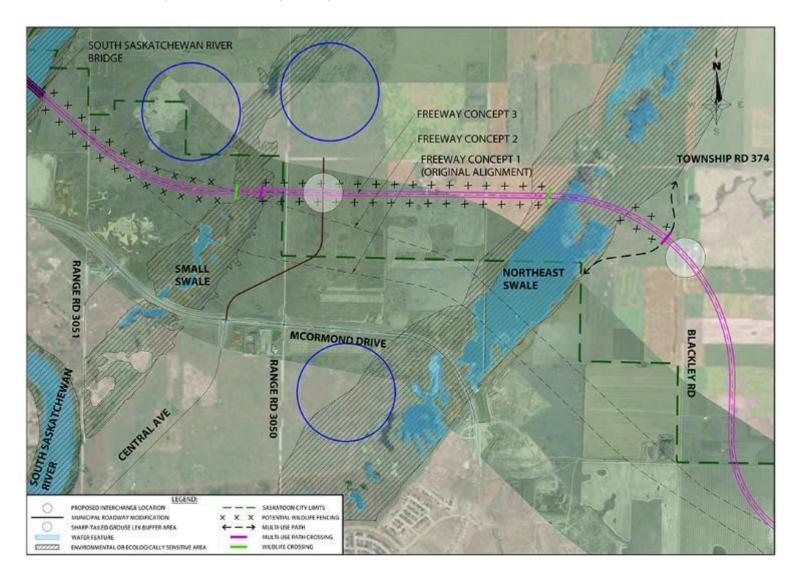
- Requires a longer open water crossing in the Northeast Swale
- Leaves a small fragment of habitat between the freeway and McOrmond Drive; it can be hard for wildlife to thrive in small fragments
- Topography poses a challenge for an underpass wildlife crossing
- Would require environmental mitigation or restoration because of impact to amphibian habitat in the Northeast Swale

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Next Board

Swales Crossing - Concept 3

In this third concept for crossing the swales (purple double line on the map), the freeway has been shifted even further north. Both overpass and underpass options would be used for wildlife.



<u>Pros</u>

- · Minimizes open water crossing
- Crosses the Small Swale in a previously disturbed area
- Reduces disturbance in the Northeast Swale by routing the freeway through an already disturbed area
- Results in a narrower crossing of the Small Swale
- Of the three concepts, this is the furthest away from the Aspen Ridge neighbourhood
- Leaves a larger habitat area between McOrmond Drive and the freeway, which is better for wildlife
- Crosses primarily cultivated lands
- Avoids a site where common nighthawks were seen

<u>Cons</u>

- Adds 1.2km to the freeway compared to the other concepts
- Impacts more nearby residents
- Requires further environmental study, as it is outside the original 500m wide General Location Corridor. Studies will be completed in 2021

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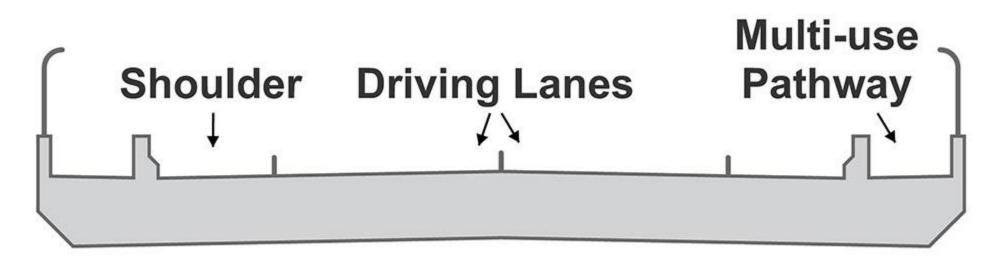
Multi-Use Paths

Walking, running and cycling paths will cross the freeway at multiple locations, including at the South Saskatchewan River. Paths would align with Meewasin Valley Authority's long-term trail network plans and Master Plan for the Swales.

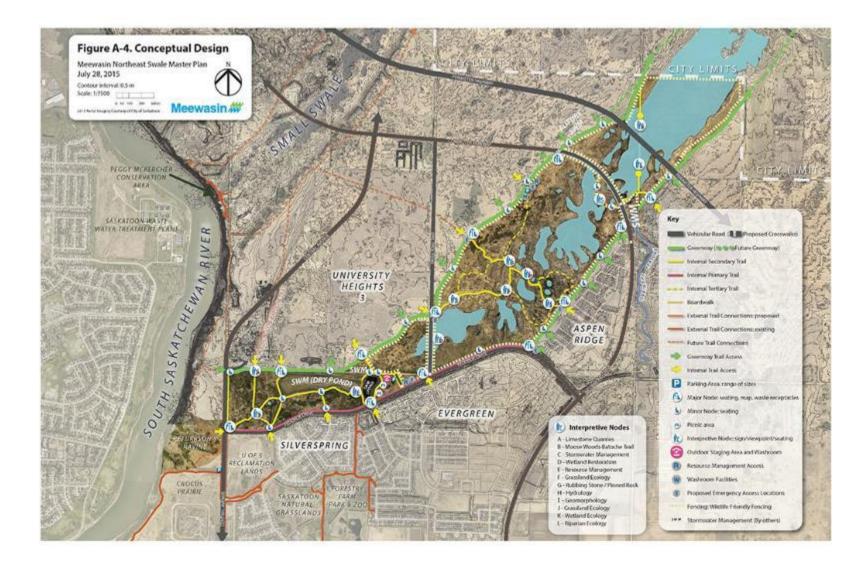




CN RAIL OVERPASS CROSS-SECTION

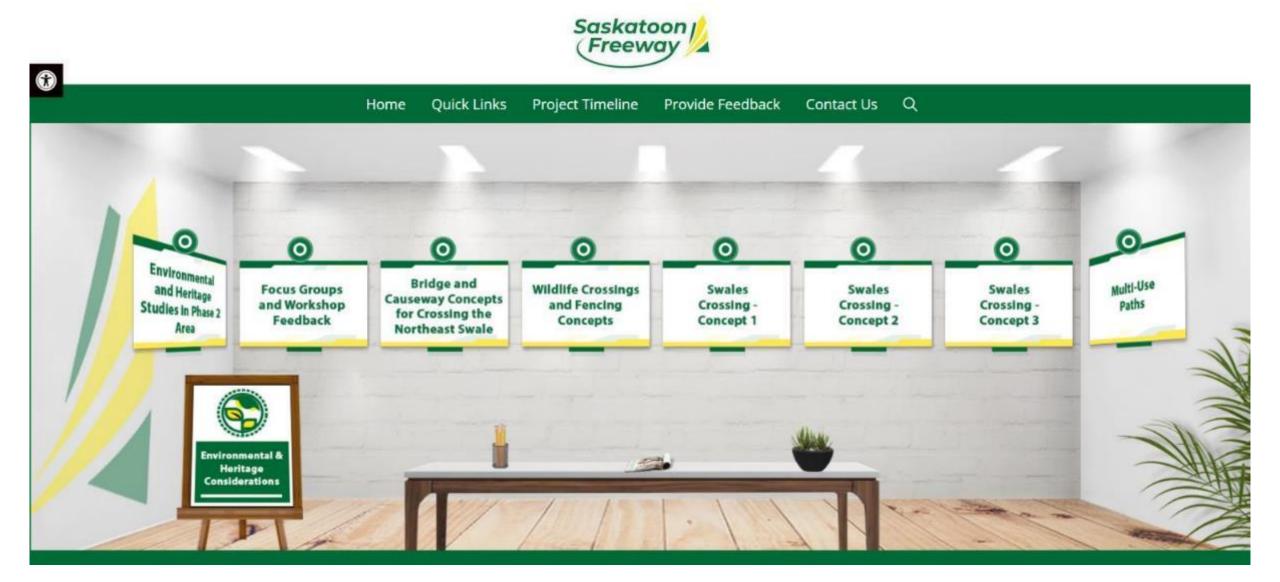


FLYOVER CROSS-SECTION



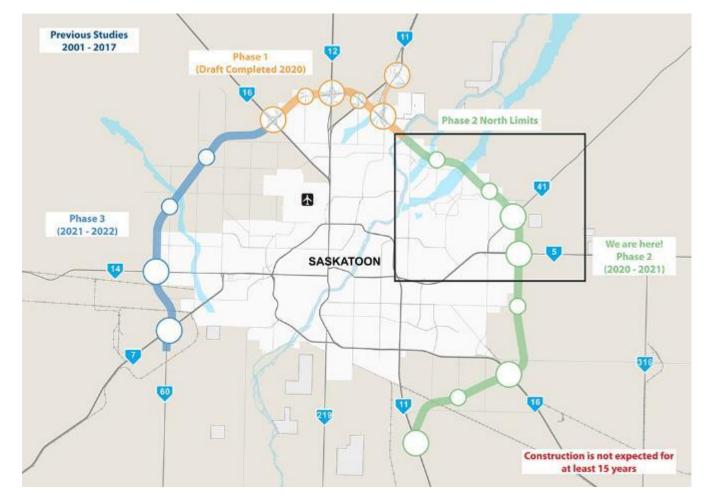
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North Half Concepts – Saskatoon Freeway VOH





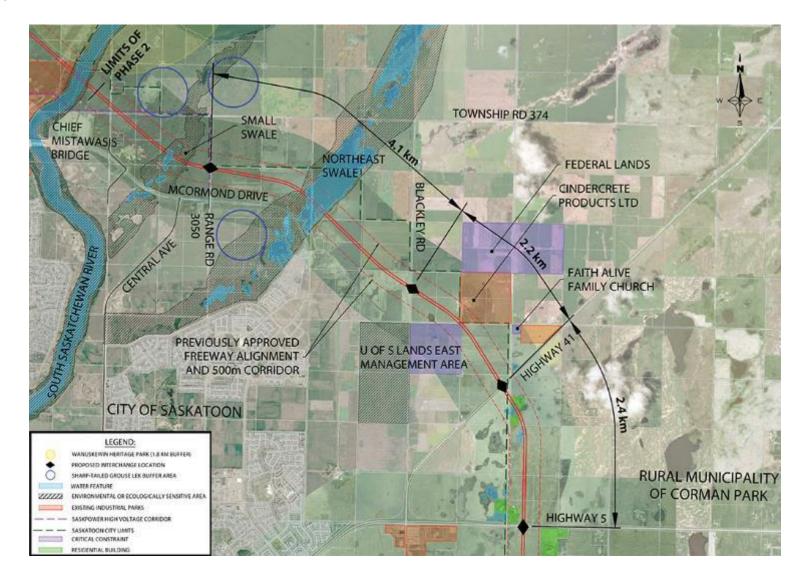
Learn about the various concepts for the part of the Saskatoon Freeway that runs from Highway 5 to the South Saskatchewan River.



Your feedback will help us prepare a preferred route for Phase 2. Later this year, we'll ask you again for additional feedback.

North Half Study Limits

The north half concepts cover the part of Saskatoon Freeway that runs from the South Saskatchewan River to Highway 5.



The red dashed lines show the 500m wide General Location Corridor established in 2005. The solid red line shows the location of the freeway within the corridor.

All north half concepts considered interchanges at Central Avenue, Blackley Rd, Highway 41 and Highway 5.

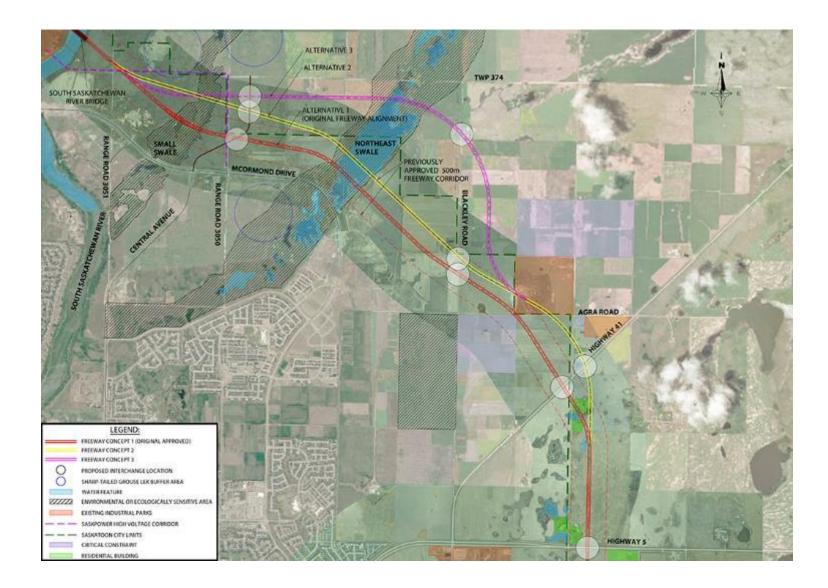
A big challenge for the design team was crossing the Small Swale and Northeast Swale. Learn more about this work in the <u>Environmental and Heritage Considerations Room</u>. The design team also had to work around research lands belonging to the University of Saskatchewan, Government of Canada, and other existing land uses.





North Half Concept Overview

The design team has developed multiple concepts for the northern half of Phase 2.



The red line shows a concept with interchanges at Central Avenue, Blackley Road, and Highway 41 and Highway 5.

The other two concepts have less impact on the swales:

- The yellow line shows the freeway shifted about 250m north to avoid the most sensitive areas of the Small and Northeast Swales.
- The purple line shows the freeway shifted even further north to reduce the water crossing in the swales, although it goes outside original 500m wide General Location Corridor (red dashed line). This concept will require additional environmental studies (learn more in the <u>Environmental and Heritage Considerations</u> <u>Room</u>)

Other boards in this room show how the design team's concepts for a realignment of Highway 41 would allow for combining interchanges and improved traffic flow.

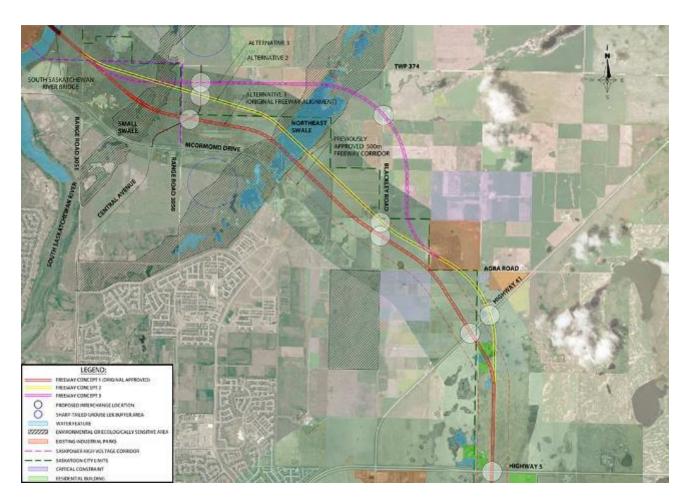
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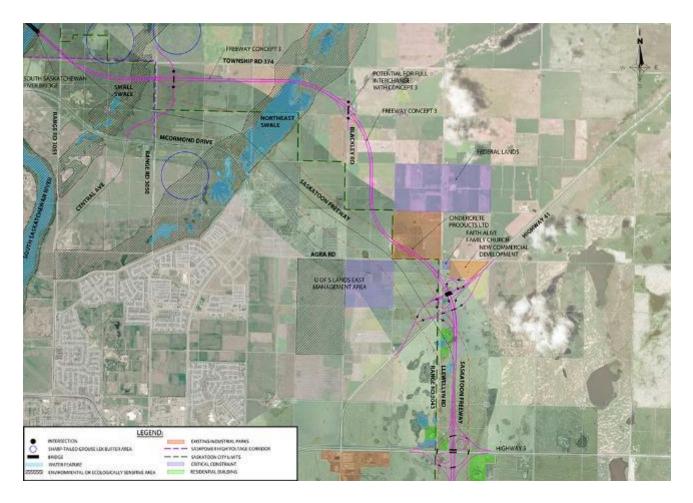
North Half Concepts – Highway 41 Existing Alignment

Both concepts provide access to the freeway without changing Highway 41. Some traffic will have to use the Blackley Road interchange. Both interchange concepts go slightly outside the freeway's original 500m wide General Location Corridor, meaning additional environmental studies will be needed.

Concept 1



The yellow line shows how this concept includes full interchanges at Central Avenue, Highway 41, and Highway 5; Blackley Road would have a partial interchange meaning not all turns are accommodated.



The purple line shows how this concept includes full interchanges at Central Avenue, Highway 41, and Highway 5. A full interchange would be located at Blackley Road meaning all turns are accommodated.

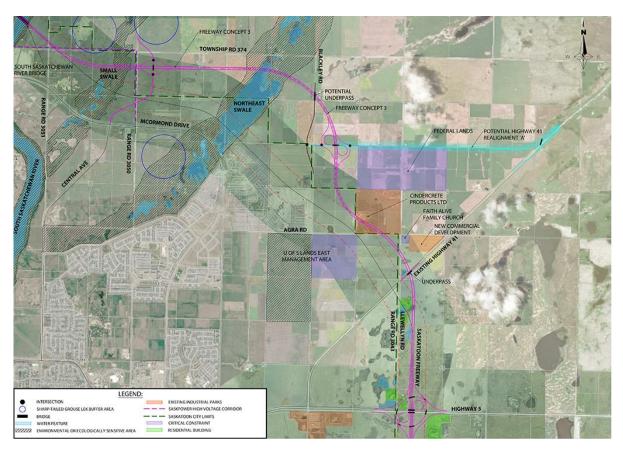




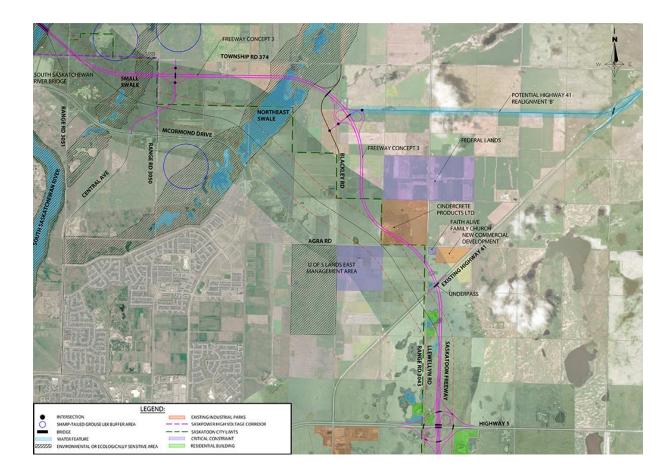
North Half Concepts – Highway 41 Realignment

To create more space between interchanges and improve traffic flow, the design team developed two concepts that would require a realignment of Highway 41. Both concepts go outside the 500m wide General Location Corridor (2005) and will require additional environmental surveys.

Concept 3



The turquoise line shows Highway 41 realigned so the Saskatoon Freeway can include full interchanges (all turns accommodated) at Central Avenue, Highway 41, and Highway 5. Access from Blackley Road would be through an intersection on the realigned Highway 41. This concept includes a flyover, meaning there would be no access to the freeway at the existing Highway 41 location. The remaining parts of the existing Highway 41 would become an arterial road, resulting in lower speed limits.



The light blue line shows Highway 41 realigned to allow the freeway to include full interchanges at Central Avenue and Highway 5. Blackley Road and the realigned Highway 41 would be combined into one interchange. This concept includes a flyover, meaning there would be no access to the freeway at the existing Highway 41 location. The remaining parts of the existing Highway 41 would become an arterial road, resulting in lower speed limits.

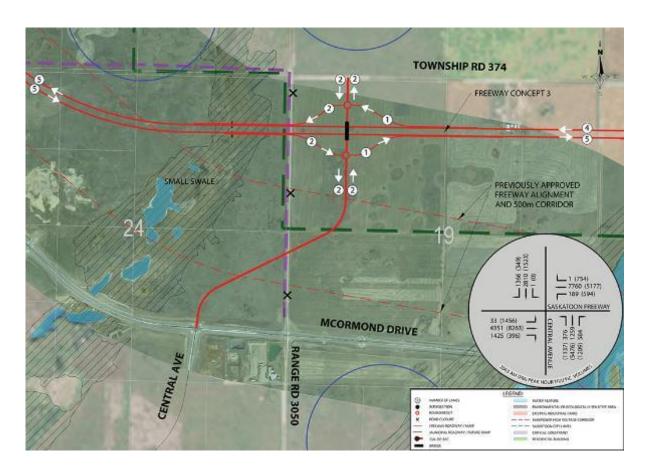




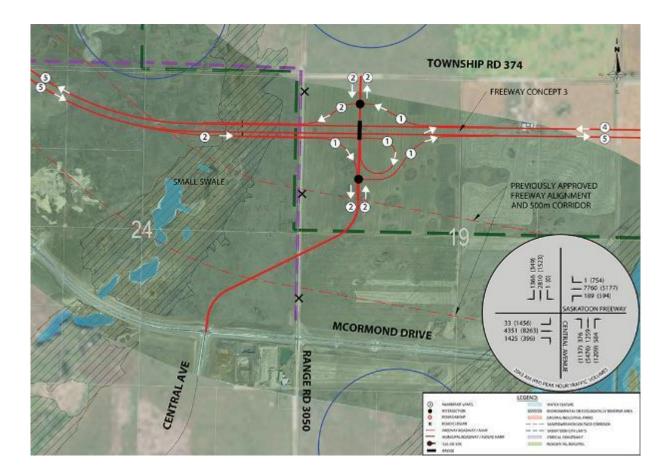
Central Avenue Interchange Concepts

Central Avenue becomes a primary access/crossing for the freeway which will accommodate development north of the freeway. Range Road 3050 north of McOrmond Drive would be closed. Both concepts consider roundabouts on Central Avenue to move traffic as it leaves/enters the freeway. Both concepts reduce the freeway's impact on the Small Swale.

Concept 1



This concept proposes a diamond interchange at Central Avenue.



This concept proposes a diamond interchange on the north side with a loop ramp and off ramp on the south side.

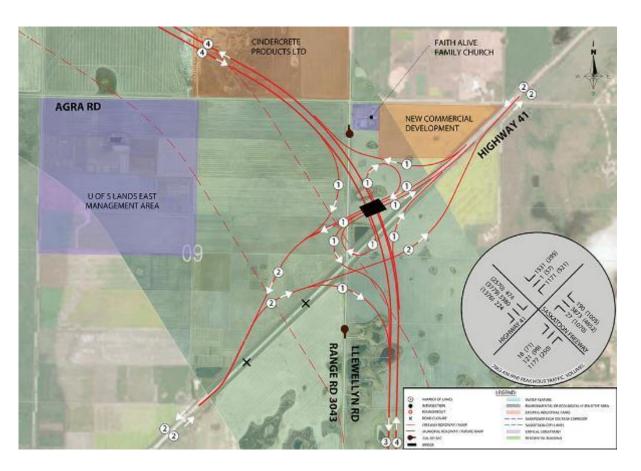




Highway 41 Interchange Concepts with Current Alignment

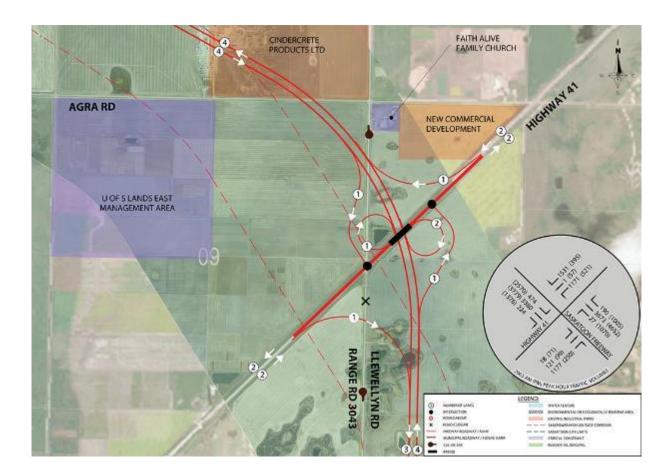
Two concepts have been developed where the freeway meets Highway 41. Neither concept allows for traffic movement (turns) in all directions because of their proximity to the Highway 5 interchange.

Concept 1

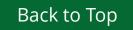


This concept includes a partial cloverleaf interchange. The movement of northbound to westbound traffic is accommodated at a partial interchange (not all turns accommodated) at Blackley Road.

Does not include intersections along Highway 41, which allows for free flow of traffic.



This concept includes a partial cloverleaf interchange (not all turns accommodated) at existing Highway 41. Traffic signals will be used at two intersections along Highway 41. This concept includes a two-lane loop ramp to accommodate the high volume of traffic travelling northbound (Highway 41) to westbound (Saskatoon Freeway) whereas Concept 1 accommodates this movement at Blackley Road.

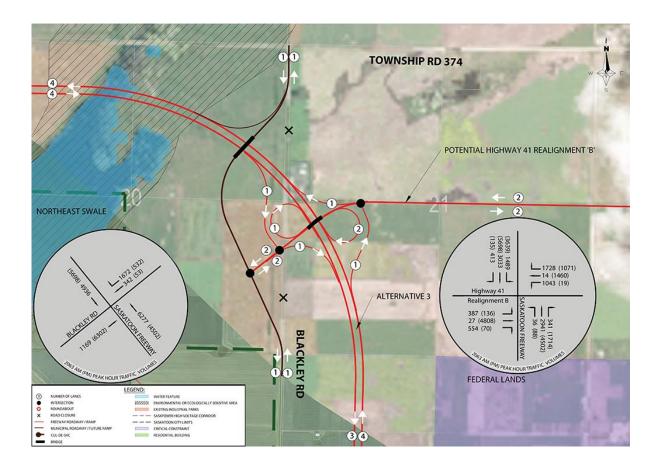




Highway 41 Interchange Concepts with Realigned Highway

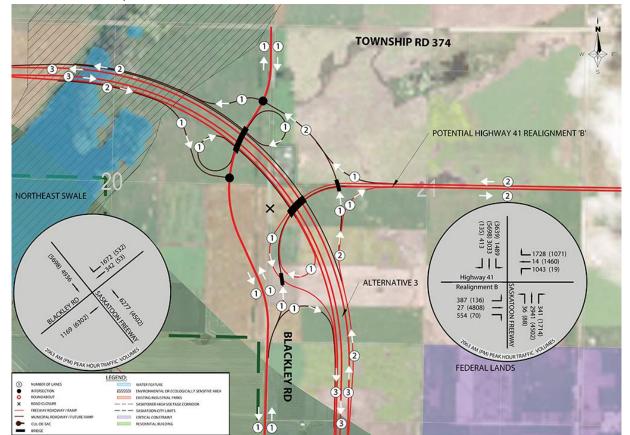
In both concepts relying on the realignment of Highway 41, Blackley Road is shifted west.

Concept 1



This concept includes a partial cloverleaf interchange that allows traffic movement on and off the freeway at the re-aligned location. Traffic signals will be used where the two ramps exit. All turning movements are provided but some from Blackley Road are through an intersection with the Highway 41 extension.

Press play to hear a description of this concept.



Play/Pause

This concept combines Blackley Road and Highway 41 into a single interchange that allows traffic movement in all directions, except southbound on Blackley to eastbound onto Highway 41. This could be added in the future if required. This interchange is designed for more free flowing traffic movement and uses traffic signals only on lower speed arterial roads.

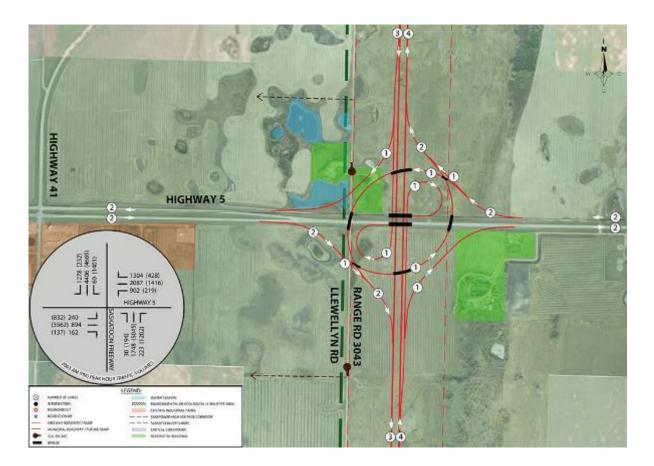




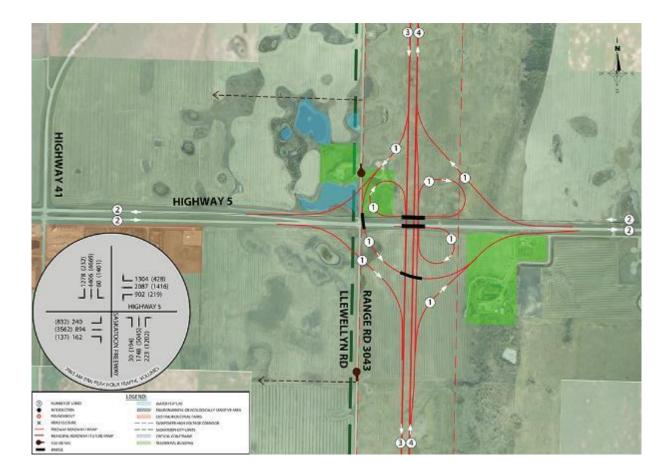
Highway 5 Interchange Concepts

The design team developed two interchange concepts that consider the twinning of Highway 5. Both concepts would change access to Llewellyn Road between Highway 5 and Highway 41.

Concept 1



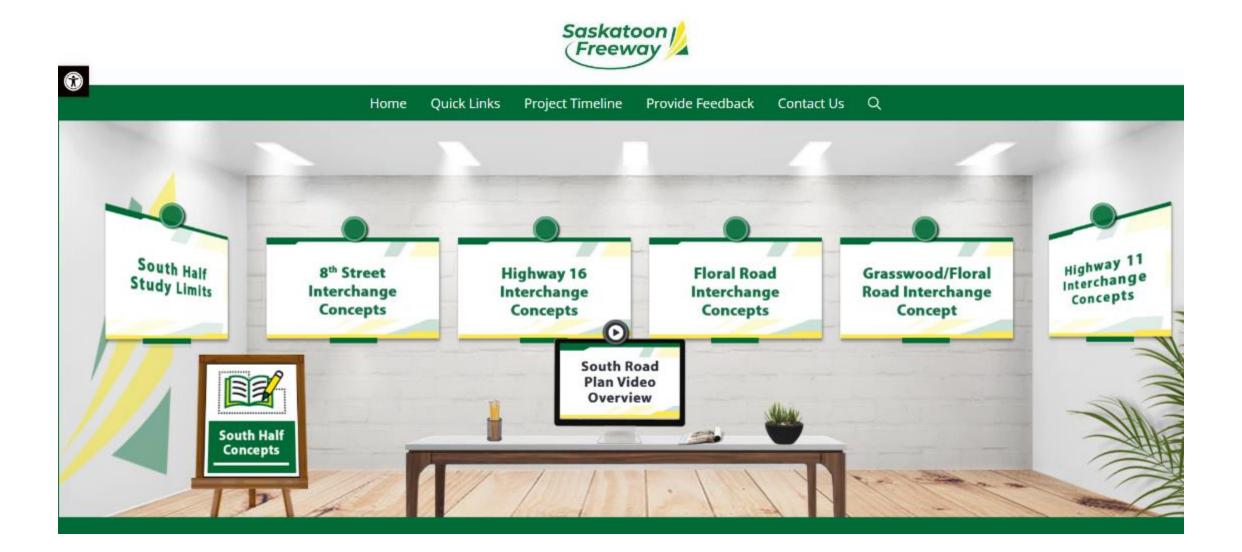
This concept allows traffic movement in all directions between Highway 5 and the Saskatoon Freeway and uses higher speed ramps.



This concept allows traffic movement between the Saskatoon Freeway and Highway 5 in all directions and maintains higher speed ramps between Highway 5 and the freeway. Lower-speed ramps associated with the cloverleaf interchange require side collector roads to improve merging and overall traffic flow.



South Half Concepts – Saskatoon Freeway VOH





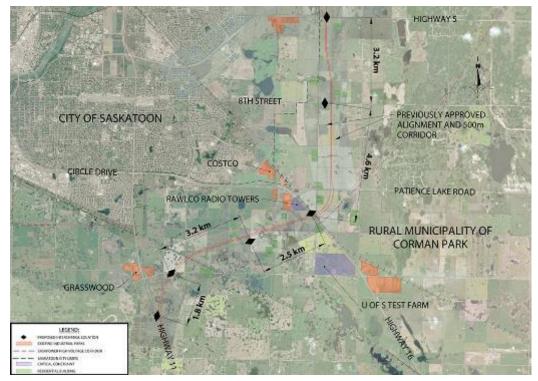
Learn about the concepts for the part of the Saskatoon Freeway that runs from 8th Street to Highway 11 south.



Your feedback will help us prepare a preferred route for Phase 2. Later this year, we'll ask you again for additional feedback.

South Half Study Limits

The south half concepts cover the part of the Saskatoon Freeway that runs from just north of 8th Street to Highway 11 just south of Grasswood.



The red dashed line shows the original 500m wide corridor set in 2017, while the solid red line marks the location of the freeway. In a couple of locations, the freeway has been shifted to avoid wetlands.

All south half concepts include interchanges at 8th Street, Highway 16, Zimmerman Road (which is anticipated to be extended to the freeway), Floral Road/Grasswood, and Highway 11.

The design team had to work around constraints caused by CP and CN railway tracks, Rawlco Radio transmission towers, and a large area belonging to the University of Saskatchewan.

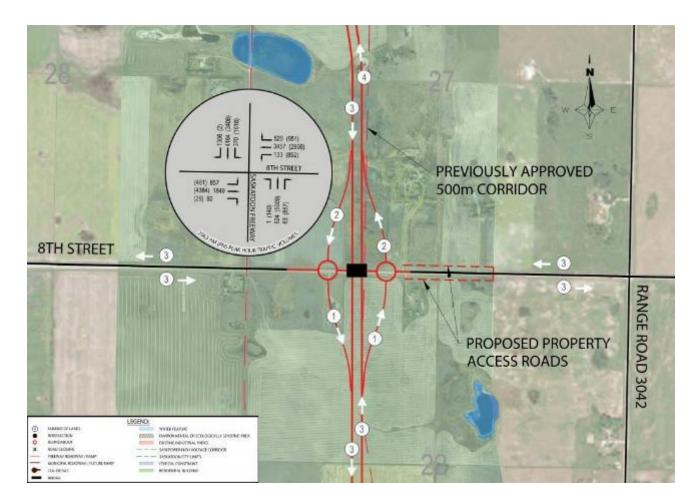




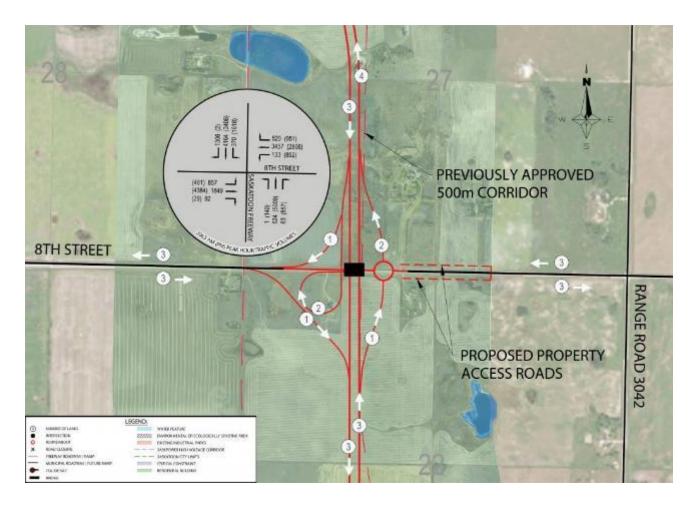
8th Street Interchange Concepts

Both concepts account for projected growth in traffic volume and allow traffic movement in all directions. Roundabouts will be initially considered at ramp intersections with 8th Street. As traffic volumes increase, intersections with traffic signals will be required.

Concept 1



This concept includes a diamond interchange with a roundabout east of the freeway. In this concept, all through traffic on 8th Street would pass through roundabouts or conventional intersections; a final recommendation will be made after more traffic analysis.



This concept uses a loop to handle the high traffic volumes moving southbound to eastbound by providing free flow traffic movement. A loop design requires more land.





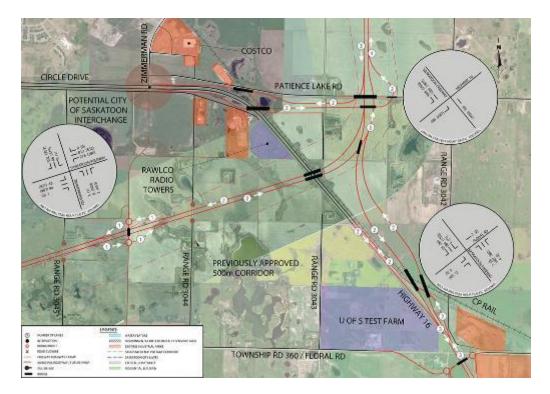
Highway 16 Interchange Concepts

The freeway connects via interchanges and intersections at Floral Road and Zimmerman Road. The freeway route shifted northward and just outside of the General Location Corridor near the Zimmerman Road interchange to avoid wetlands. There will be no direct access from Patience Lake Road, Range Road 3044, or Range Road 3045.

Concept 1

Press play to hear a description of this concept.

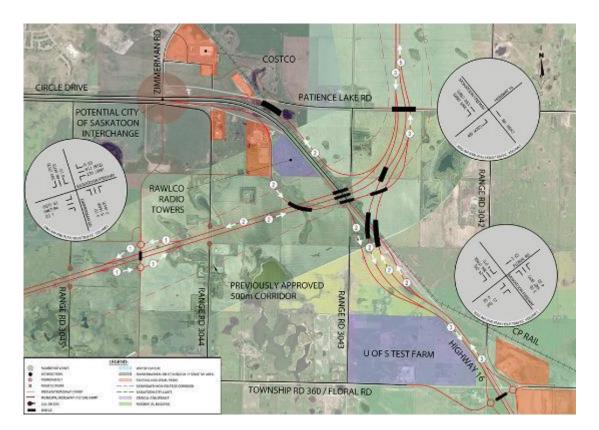
Link to audio file



In this concept, Highway 16's crossing of the CP Rail tracks has been shifted further southeast to allow easier travel over the tracks. Traffic coming into Saskatoon on Highway 16 will exit under the new CP Rail overpass and continue onto Circle Drive.

Press play to hear a description of this concept.

Link to audio file.



This concept realigns Highway 16 to the west so it curves over the tracks further to the northwest. This concept has a greater number of bridges, clustered together. That will require higher road and bridge embankments.

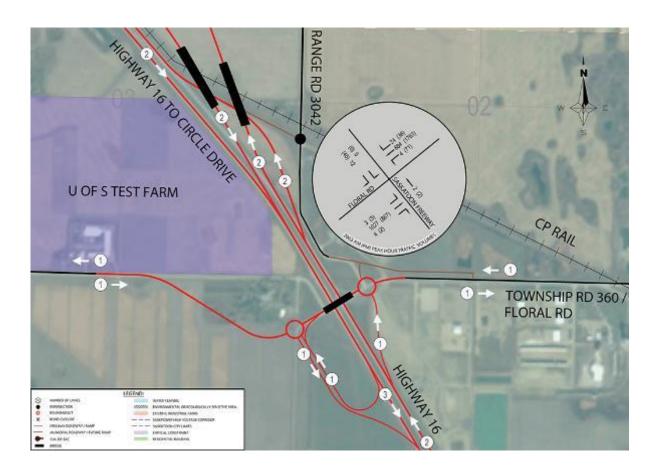




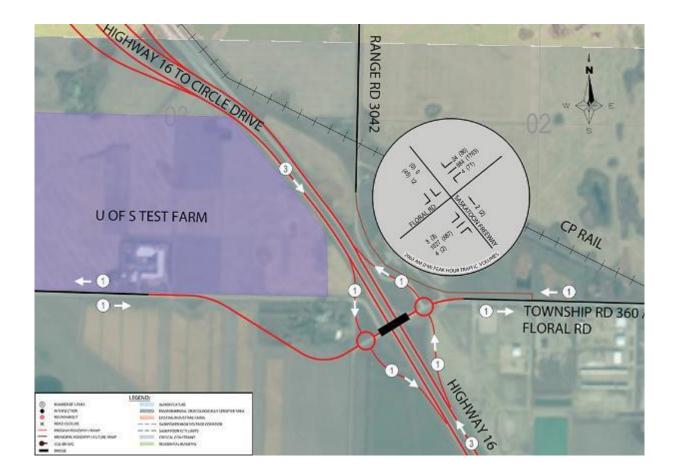
Floral Road Interchange Concepts

These two concepts accompany the Highway 16 Interchange Concepts shown earlier in this room (Board 3). Both concepts allow traffic movement (turns) in all directions.

Concept 1



A loop moves the Floral Road exit point further from where Circle Drive and Highway 16 converge. Intersections would be controlled by roundabouts or traffic signals; a recommendation will be made after further traffic analysis. Vehicles coming into Saskatoon from Floral Road would connect to Circle Drive from Range Road 3042.



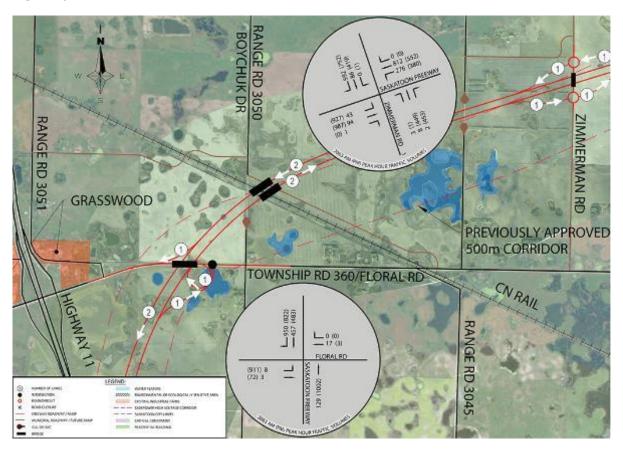
This concept includes a diamond interchange. Roundabouts are being considered for the ramp intersections with Floral Road, pending further traffic analysis.





Grasswood/Floral Road Interchange Concept

A partial interchange (not all turns accommodated) at Floral Road with three major traffic movements would support existing and future traffic movement to and from the Grasswood area. All other traffic would be directed to the Floral Road/Highway 11 intersection.



The area in between the Saskatoon Freeway, Highway 11 and Highway 16 is also being studied as part of the South East Concept Plan, which is jointly managed by the R.M. of Corman Park and the City of Saskatoon. For additional information visit <u>http://rmcormanpark.ca/306/South-East-Concept-Plan</u>.

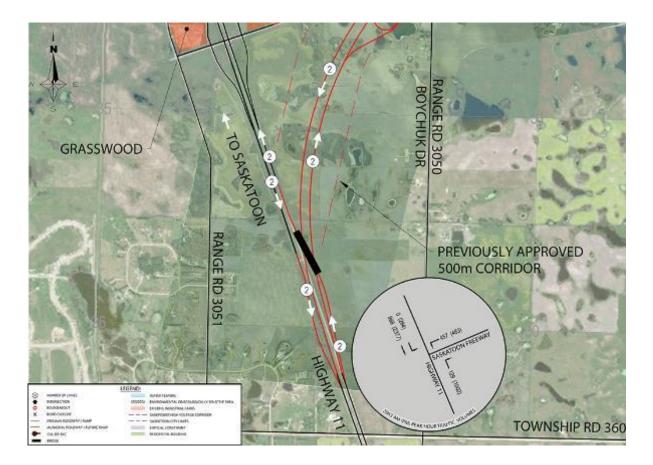




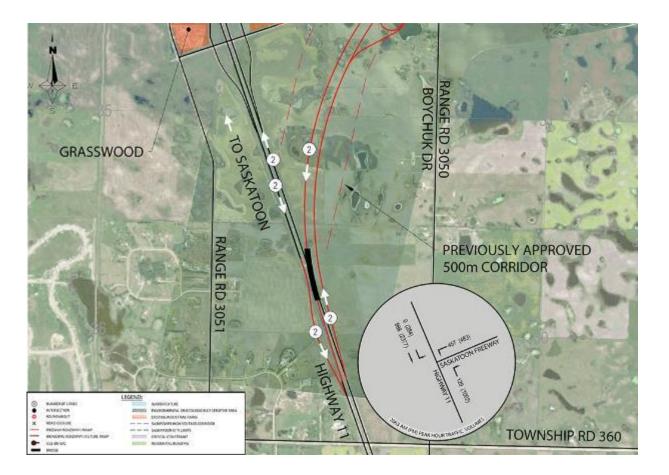
Highway 11 Interchange Concepts

The design team developed two concepts for an interchange at the southern end of the Saskatoon Freeway.

Concept 1



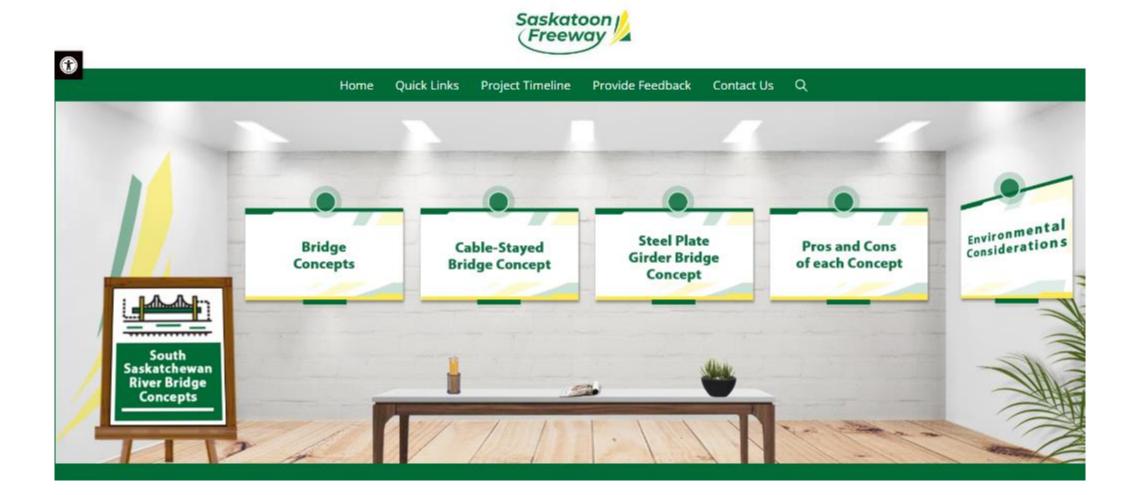
Northbound Highway 11 traffic travelling into Saskatoon via Circle Drive will exit and pass over the Saskatoon Freeway. Highway 11 will be aligned with traffic continuing straight onto the freeway. Route continuity of Highway 11 from south to north (up to Wanuskewin Road) is maintained.



Northbound traffic going into Saskatoon stays in the left lanes and continues into the city. Traffic continuing onto Saskatoon Freeway will use the right lanes and exit to the right. Southbound traffic from Saskatoon Freeway will pass over northbound traffic.



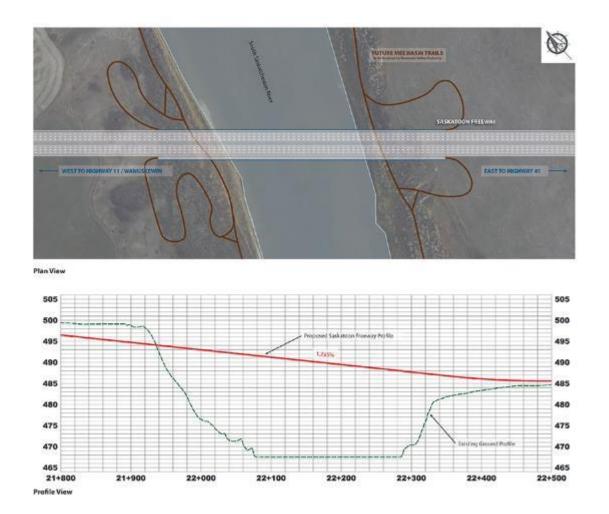
Bridge Concepts – Saskatoon Freeway VOH





Learn about the two bridge concepts to cross the South Saskatchewan River.





Your feedback will help us prepare a preferred route for Phase 2. Later this year, we'll ask you again for additional feedback.

Bridge Concepts

The team started with 15 possible bridge types. Options were assessed against a range of criteria, including construction and maintenance costs, aesthetics, and their impact on a unique grove of green ash trees on the riverbank.

Two bridge concepts emerged as the best fit:

- A steel plate girder bridge with a concrete deck, similar to the Chief Mistawasis Bridge.
- An asymmetrical cable-stayed bridge with a concrete deck.

Both bridges have similar costs over their operating life; a detailed review of these cost estimates is underway.

For details on this evaluation process that led to two bridge concepts, visit the Saskatoon Freeway project website <u>River Crossing</u>.

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Cable-Stayed Bridge Concept

A cable-stayed bridge for the Saskatoon Freeway would have three spans, two towers, and a concrete deck. The bridge would be constructed so it could be twinned as traffic increases.

Cable Stayed Bridge – First Stage



Cable Stayed Bridge Twinned – Second Stage



The three spans would use high-strength cable steel cables. The northwest tower would be approximately 60m above the driving surface, while the southeast tower would be 40m above the roadway. Each tower would be cast-in-place concrete with a potential steel portion above the deck. Once the functional design is complete, the preferred concept (steel or concrete) will be determined.

A path for cyclists and pedestrians would hang underneath the bridge and tie into the river valley path system.

If towers are placed in the river, they must be oriented square to the roadway; this can cause water turbulence and lead to scouring of the riverbed. Environmental studies will be completed to assess potential riverbed impact and any mitigation requirements.





Steel Plate Girder Bridge Concept

The steel plate girder bridge would have six spans; three piers would be located in the river and two piers on either riverbank. The bridge would have a concrete driving surface. The bridge would be constructed so it could be widened as traffic increases.

Steel Plate Girder Bridge – Stage 1





A path for cyclists and pedestrians would hang underneath the bridge deck and tie into the river valley path system.

The three piers in the river will be skewed to the roadway by approximately 15 degrees to match the river's flow, reducing the chance of riverbed scouring.





Pros and Cons of each Concept

Each bridge concept has unique advantages and disadvantages:

- The steel plate girder bridge can be more easily expanded as traffic increases.
- The cable-stayed bridge does not require piers in the middle of the river, making construction faster with less environmental impact to the river.
- The steel plate girder bridge requires a pier part way up the riverbank, which will mean a greater impact on the green ash forest. The pier will also have to be built to withstand potential landslides.

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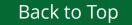
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Environmental Considerations

To reduce the impact either bridge will have on fish and fish habitat, the design team identified the following goals:

- Limit the size and number of piers or towers in the water
- Select pier or tower locations that avoid critical fish spawning habitat
- Schedule construction to avoid spawning
- Reinforce riverbanks with rocks to reduce erosion around piers or towers
- · Find ways to stop bridge runoff going directly into the river
- Rigorous monitoring to ensure water quality is maintained during construction

Design and construction of any bridge will include a commitment to minimize impacts on wildlife habitat and allow continued free movement of wildlife.



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