

Preliminary Design for  
**Valley Line (SE to West) Light Rail Transit**

June 19, 2013 - Areas 3 and 4: Argyll Road to Centre West



Welcome

The City has undertaken a naming exercise for the existing and future LRT lines. The SE to West LRT, as the project has been called to date, is now called the Valley Line.

We are here to present the final recommended preliminary design of the Valley Line to you, and to answer any questions you may have.



## Meeting Purpose

- To provide an update on project progress
- To present the **recommended preliminary design** and other key components, built upon previous public input
- To receive feedback on the **recommended preliminary design**
- To respond to your questions

There are number of things we plan to achieve at this meeting – all of it in support of determining how best to fit the LRT into your neighbourhood.

We have taken the information provided to us in 2012, have incorporated this information where possible and now present to you the recommended preliminary design.

There will be a Capstone Meeting in November 2013, displaying highlights of the entire 27 km project.

## Tonight's Agenda

- Valley Line Overview
- Project Schedule
- Public Involvement
- Preliminary Design—Areas 3 and 4
- Next Steps
- Question and Answer

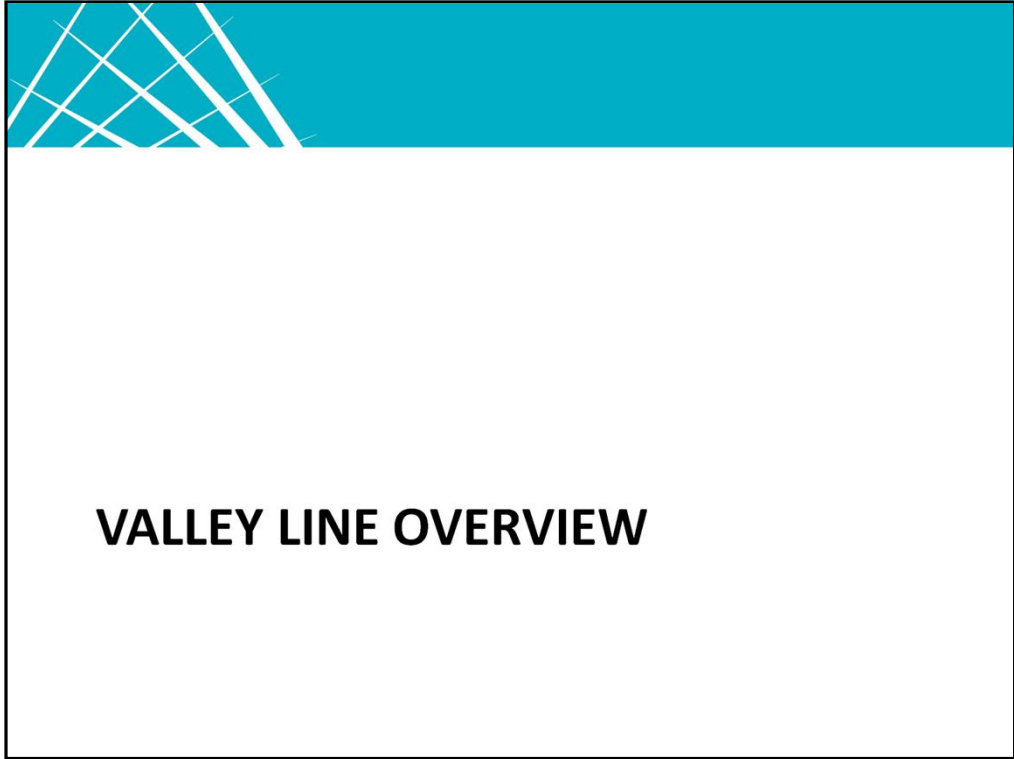


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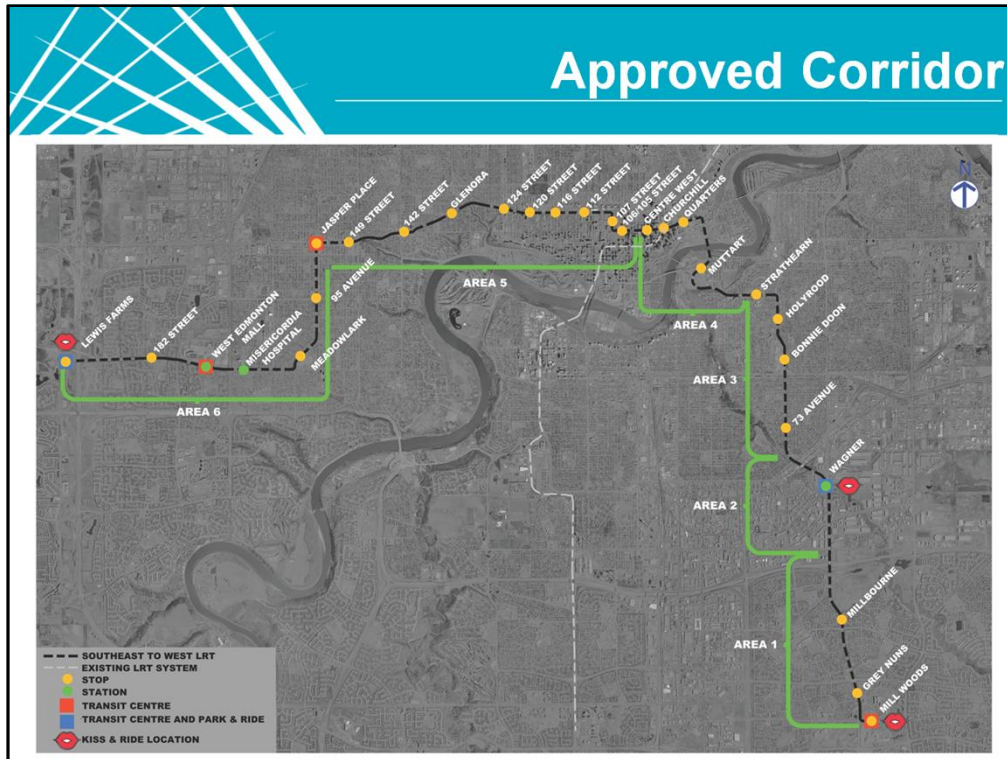
Our agenda will include these items – some as background information for any new attendees and some as new information to update you as to where we are and what we have undertaken since we last met in 2012.

We will bring to your attention what the next steps are.

There will be an opportunity for questions and answers at the end of the presentation.



# **VALLEY LINE OVERVIEW**



This is the Council approved Corridor.

Fixed elements include:

- Corridor and Alignment
- Low floor urban style
- Stop and Station locations

These elements are not up for discussion in our meeting. Decisions around these have already been made. What we can take away from you tonight is have we provided information to you showing how the LRT will be integrated into your neighbourhood.

## Valley Line Facts

- 27 km route – Mill Woods to Lewis Farms
  - 3 stations – elevated
  - 25 stops – at street level
  - Integrated with 5 transit centres
  - 2 Park 'N' Ride sites (Wagner, Lewis Farms)
  - Kiss 'N' Ride drop-off sites



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These are some of the basic facts of the Valley Line.

Stops are at the similar level or grade as the sidewalk – the platform is not raised as we have now in some of the other lines in the City.

Stations are elevated above the road where major conflict points exist, like the CP and CN rail lines.

Transit Centres in the south east include: Mill Woods Stop and Wagner Station.

Kiss'N'Ride drop off sites, usually two or three parallel parking stalls near a stop, are used to drop off or pick up passengers.

## Valley Line Facts

- Vertical connection to existing LRT at Churchill Station
- Low floor technology – curb access, less intrusive
- “Edmonton” urban style
- Trains run on 5 minute intervals in peak hours
- Trains share traffic signals



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Here are some more facts about the Valley Line (SE to West LRT) that describe the project.

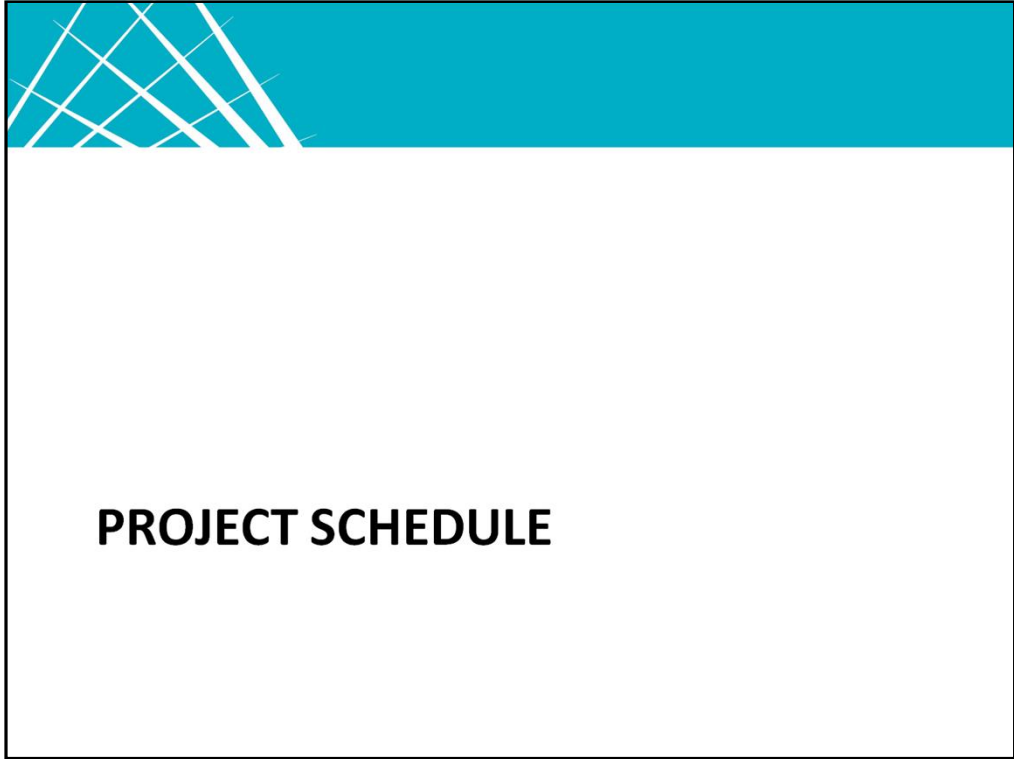
A vertical connection is made with stairs, elevators and/or escalators – this will occur at Churchill, West Edmonton Mall Station, Misericordia Station and Wagner Station.

Low floor technology is where the floor of the LRT vehicle is approximately 1 foot (300mm) above the road, not 3 feet (1 metre) above the ground like on the existing system. This is made possible by choosing vehicles that have the mechanical components on top of the vehicle rather than underneath as we have in our current LRT system.

Edmonton is developing an urban style system that is unique to our City and addresses items such as snow clearing.

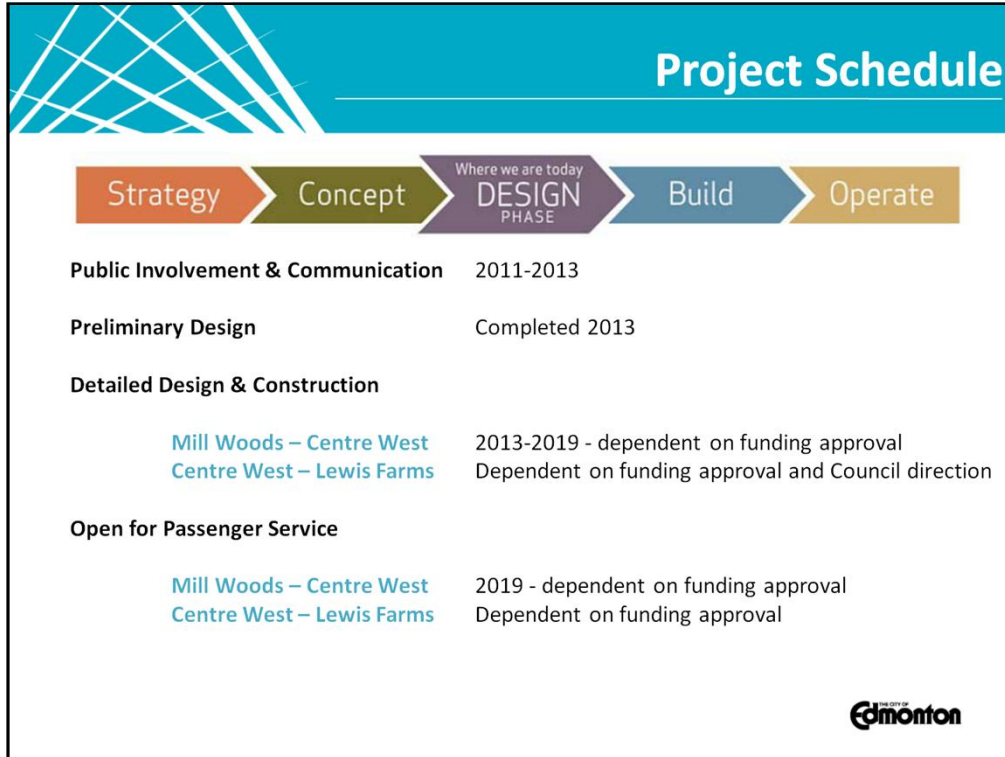
The anticipated peak hours timing between trains will be 5 minutes.

Trains will share the same traffic signals as other road vehicles, but it operates within its own right-of-way so that it does not compete for space with car traffic.



**PROJECT SCHEDULE**





We are at preliminary design stage of the Valley Line (SE to West) LRT project - This includes confirming and building on the approved concept plan as well as fine tuning the approved concept plan to prepare for construction

We are also at Stage 5 of Public Involvement – we have received lots of great input to date and thank you for that.

Public input is one of many sources of information we use to develop the design – and therefore it is important to note that not all of what we heard has been incorporated – your input is considered along with other elements

Tonight you will see the recommended preliminary engineering design.

These other dates are estimates and are dependent on funding approval and Council direction.



## Public Involvement Process

### Preliminary Design:

Stage 1 – Pre-Consultation – February 2012

Stage 2 – Initiation – March – May 2012

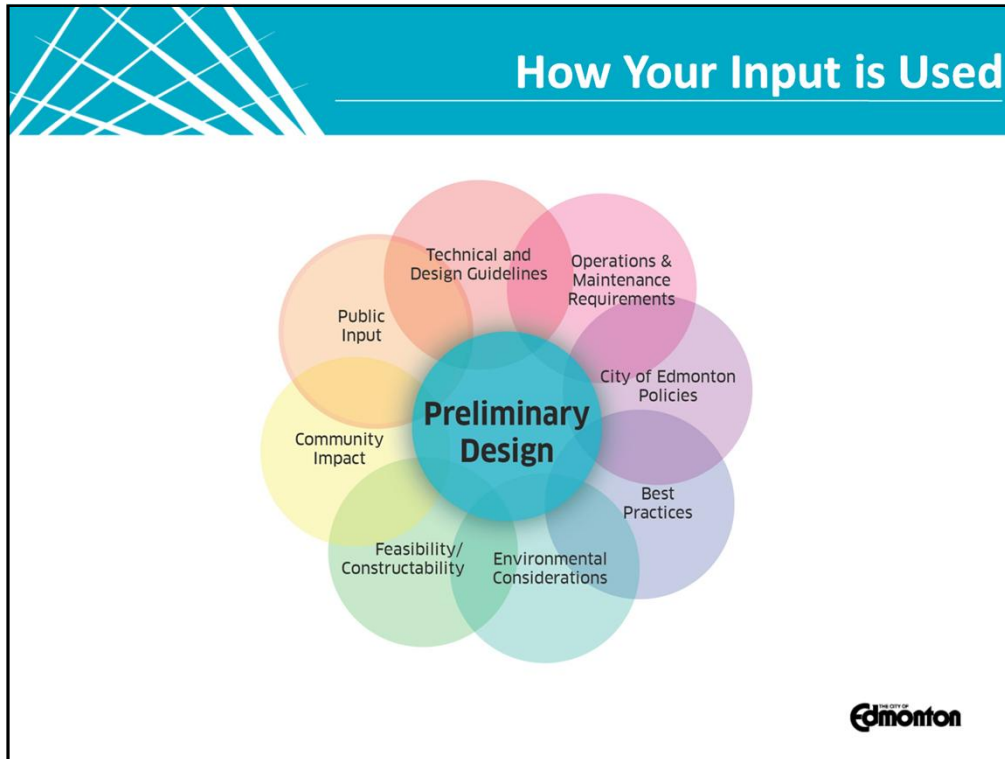
Stage 3 – Consultation – May – November 2012

Stage 4 – Refinement – September 2012 – June 2013

Stage 5 – Conclusion – January – December 2013 ← WE ARE HERE



Just a reminder that five stages of public involvement have been designed into the process. We are now at Stage 5 for the west segment of the Valley Line. This is where we ask that you confirm the refinements in the design incorporated from your Stage 4 comments and from further technical investigations.



Your public input is valuable to us and, as we mentioned earlier, is considered in the preliminary design development along with other areas of influence or consideration. As an example, in some parts of the design, your input will have priority, and in others the environment, or constructability will have a stronger influence in how an element is designed. Your information, where feasible, has been incorporated into the materials presented tonight.

## What We Heard – Stage 4

### What We Heard

- Confirmation of stop themes
- Value for pedestrian realm and LRT access
- Bicycle parking at stops and stations, and connections to the existing and planned bike network are priorities
- Concerns about vehicular movements and accesses
- Concerns about loss of parking
- Concerns about noise from LRT during operation

### Actions Taken

- Stop themes presented tonight
- Pedestrian access is priority—new and retained crossings on corridor plans
- Bicycle parking located at all stops/stations; connections to the existing and planned bike network included in design
- New, retained and relocated vehicle accesses on corridor plans
- New and retained vehicle parking on corridor plans
- Noise studies completed. Proposed noise barriers noted on plans

We have identified several major themes from your Stage 4 comments and other input you have provided to date. These ideas or themes were given to the design team and we can report tonight that many of your ideas have been incorporated into the design. Some of these are part of a continuing discussion from Stages 1 through 4 – providing a refinement of the preliminary design and assisting the team in developing the recommended preliminary design.

## What We Heard – Stage 4

(continued)

### What We Heard

- Concerns about vibration during construction and operation
- Alternative road design for Connors Road/95 Avenue preferred
- Concerns about LRT users parking and shortcutting in residential neighbourhoods
- Desire for larger or additional Park 'N' Rides

### Actions Taken

- Vibration studies completed and pre-construction assessments will be conducted of structures along route
- Alternate design now recommended
- City will review and determine strategy once LRT is operational
- Park 'N' Ride options under review

Here is a second slide to cover off on what we heard from Stage 4 public meetings. A more detailed board is presented in the room for your review and comments.

## Stage 5 - What We Need From You

- Your feedback on **recommended** preliminary design presented tonight
- Your feedback on the public engagement process throughout the preliminary design stage



Again, we need your feedback – have we understood the information and/or concerns you provided us in earlier meetings?

Previously, we called the design the preferred design – however it is now considered the recommended preliminary design, to be used in detailed design and construction.



**PRELIMINARY DESIGN  
AREAS 3 AND 4**



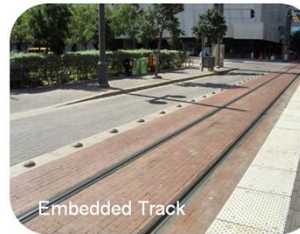
## Basic Principles

- Stops/stations
  - Good connections with bus network
  - Kiss 'N' Ride where possible
  - Bicycle parking at, or near, each stop/station
  - Scale of infrastructure based on ridership projections
- Community and business accesses are priority
  - Vehicle
  - Pedestrian
  - Bicycle
- Limit property impacts
- Keep it green



At a high level, these are the principles that we have gathered from the public involvement meetings. These have been provided by the stakeholders, i.e the residents of Edmonton.

- Locations of Traction Power Sub Stations (TPSS)
- Vehicle selection
- Track types
- Land requirements
- Noise/vibration studies
- Harbin Gate relocation



TPSS – Preliminary requirements have been determined and locations have been added to Corridor and Access plans.

Vehicles Selection – This process is still ongoing with the final selection to happen in Detailed Design. They will be low floor vehicles.

Track types – Two types will be used: embedded in most urban situations and tie and ballast in industrial and some suburban locations

Land requirements – The preliminary land requirements are shown as purple on the Corridor and Access Plans. This information shows the requirements to provide the preliminary design.

Noise and Vibration – Preliminary studies are now completed. The Urban Traffic Noise Policy was recently updated and has been considered in the noise modeling for this project. Mitigation of noise will meet the new policy, and property owners who are eligible for noise attenuation will be consulted regarding aesthetic elements.

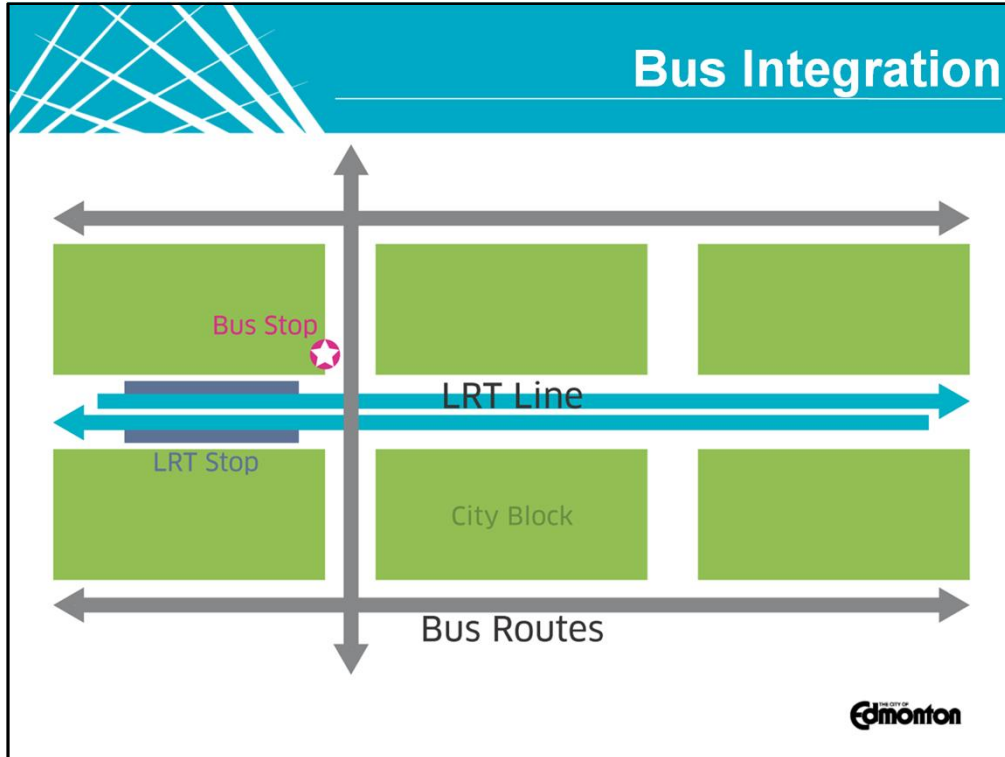
Harbin Gate relocation – Harbin Gate has been identified for relocation. We are working with the stakeholders to determine the new location.

## Preferred Stop Canopy – Organic

- Steel Structure
- Metal and wood canopy
- Glass shelters
- Unique concrete finishing



The large image is the preferred canopy for most stops - the organic canopy. However, in the downtown, the flat roof was preferred (shown in the inset).



A number of comments and questions have come up about the integration of the LRT and bus services. Here is a conceptual drawing that we hope will clarify how these will work together. The green represents city blocks. The white in between the blocks represents roads. The turquoise lines represent the LRT. The grey lines represent the bus routes. The bus routes, in most cases, will intersect the LRT line near stops and stations. This is how transfer will occur between the two types of transit. The bus routes will not run along the same corridor as the LRT for any great distance. The design of the routes is now ongoing to ensure the best integration between the two types of transit. Remember, the same ticket system is used for both and transfers can occur.

## Connors Road/95 Avenue



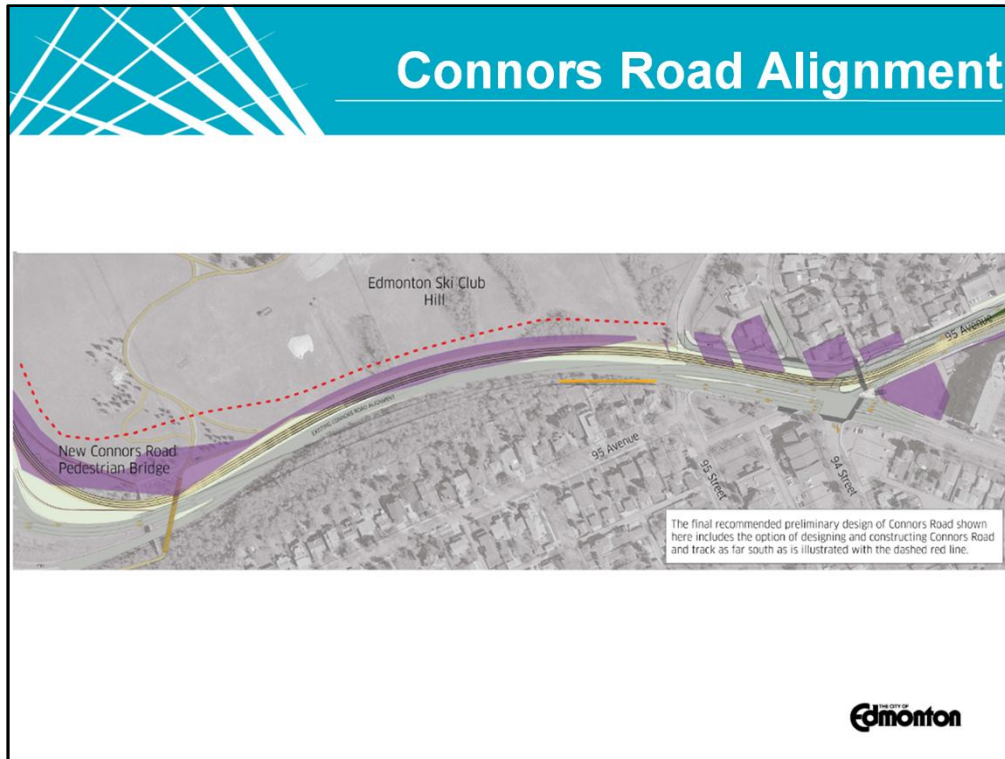
Concept Design



Preferred Design



Two options were presented previously and the new design was preferred from the public and technical perspective. This alignment reduces impact to the ski hill; makes Cloverdale Road accessible to Strathearn via 92 Street; allows right-in/right-out access to 94 Street, north of 95 Avenue; extends the shared use path from Cloverdale Road to Donnell Road; provides access to 95 Avenue from Connors Road northbound at 92 Street; and allows through traffic from 95 Avenue to 94 Avenue across Connors Road. The land impacts change in the southeast corner of Connors Road and 95 Avenue intersection.



Initial concerns raised in Concept Plan and early stages of Preliminary Engineering regarding geotechnical conditions and slope stability within the River Valley.

A thorough investigation of Connors Road alignment options has been undertaken during Preliminary Engineering.

Three alignments have been evaluated:

- LRT on north side of existing Connors Road
- Partial LRT encroachment into Connors Hill
- Full LRT encroachment into Connors Hill

From a geotechnical/slope stability perspective all three options are deemed feasible providing slope reinforcement measures are implemented.

Results of evaluation indicate that full encroachment has the highest negative impact and is eliminated.

LRT on north side of the existing Connors Road has the lowest score (however greatest impact on north side stakeholders and no impact on south side).

Partial encroachment offers more balanced impacts between north and south side stakeholders.

Project will be delivered as a P3. One of the advantages of a P3 is that the consortium can bring innovative and optimized design and construction solutions to the project.

## 102 Avenue Roadway Layout

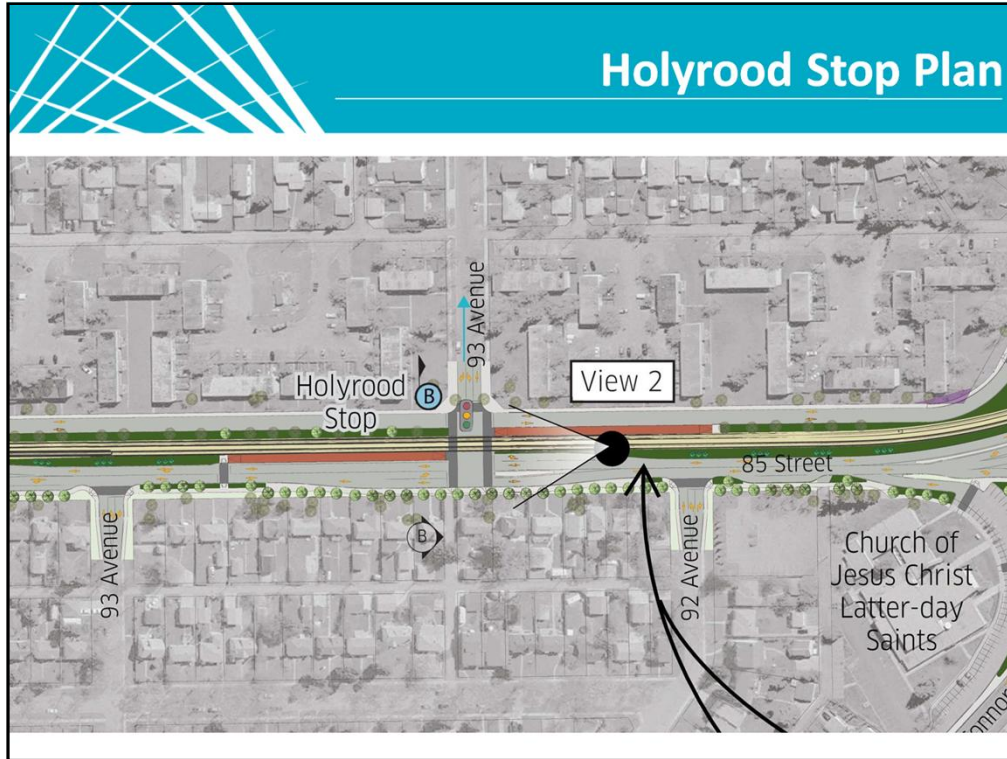
- From 107 to 99 Street - under review
  - Bike lanes
  - Pedestrians
  - Vehicles
  - LRT
- In Quarters - redesigned
  - Fire
  - EMS



The 102 Avenue roadway layout in the downtown area is being reviewed to ensure that all safety requirements are being met. There are many ways that the public can move through the downtown and the project must accommodate all users safely.

102 Avenue in the Quarters area has been redesigned to meet the needs of the fire department and Emergency Services. This requires the removal of parking and trees to accommodate the large vehicles need to access the high rise apartments in an emergency.

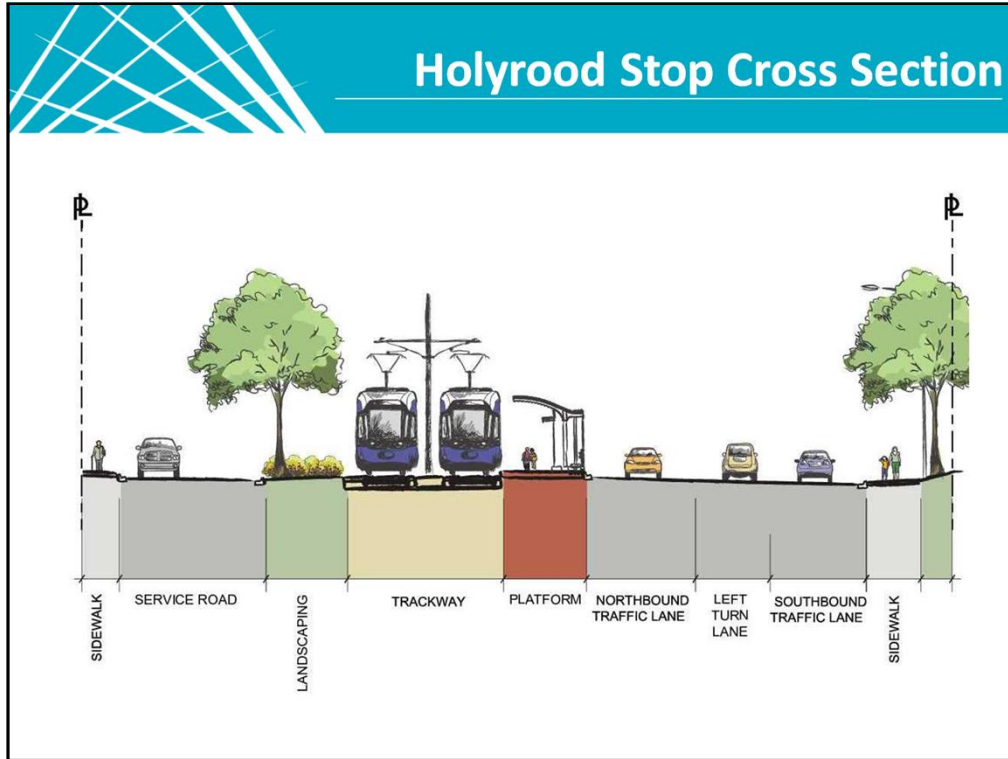




The Corridor and Access Plan show a number of pieces of information about each stop or station on the plan, plus other elements such as bridges.

This is a snapshot of Holyrood stop – showing a number of things for you to look for on the roll plans: Tractions power sub stations (Star – not shown on this plan), land acquisition – from concept plan (purple colour), traffic movements (yellow arrows), traffic lights, stop location (red long rectangular blocks), bike parking (B in blue circle) and landscape (green).

Here the letter 'B' shows where the cross section is taken and View 2 indicates the view direction for a photo of the existing site and sketch of proposed stop.



This is the cross section identified as 'B' on the last slide. This shows the relationship of the LRT with the stop, adjacent traffic and pedestrian areas.

## Holyrood Stop Theme



Existing Conditions (Looking north)



Concept Rendering



Bench



Recycling Bin



Paving



Column Wrap



Railing

### Stop Design Elements

(Based on your feedback, elements selected for project will be similar to images above.)



This slide shows View 2 identified on the stop plan as well as our understanding of the type of elements you are looking for at this stop. Note: these are not the exact elements but provide direction to the designers for final selection.

## River Valley Portal



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The River Valley Portal has been further refined. It is now a much less obtrusive design and will have a naturalized planting re-established on the slopes adjacent to it. The Traction Power Substation has been moved to the top of the bank rather than beside the portal as shown in the past.

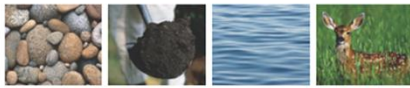


This bridge was approved by Council on February 20, 2013.

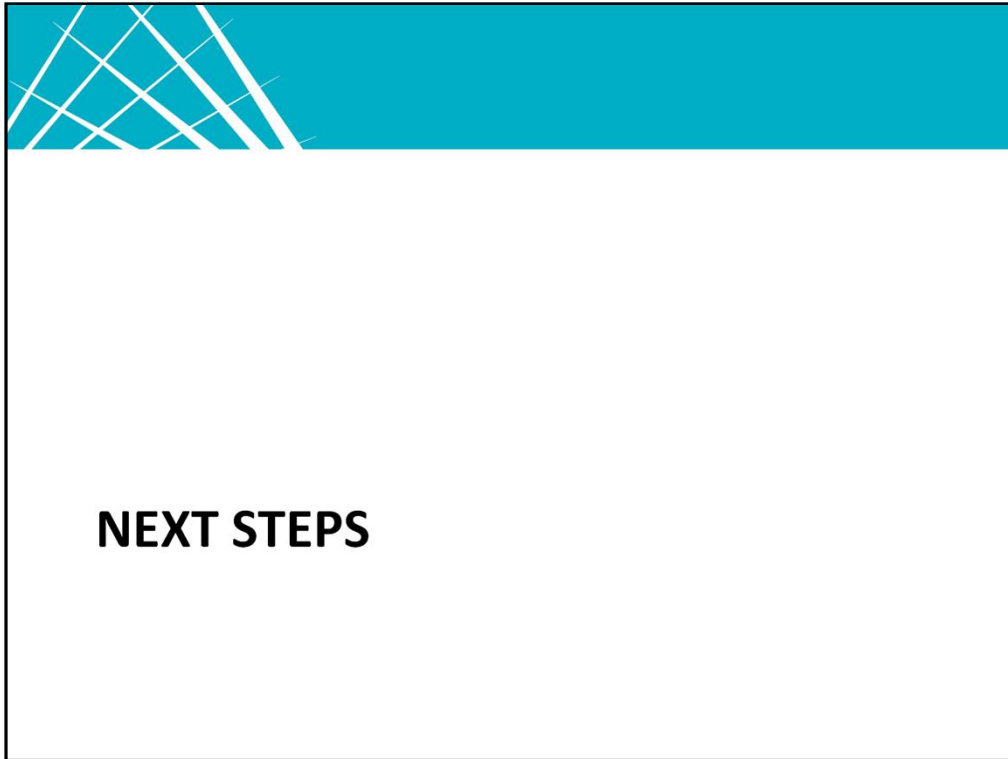
## Environmental Impact Assessment

- Required to meet the City of Edmonton's North Saskatchewan River Valley Area Redevelopment Plan (Bylaw 7188)
- This document will
  - Describe existing environmental conditions
  - Assess potential impacts
  - Describe mitigation measures intended to eliminate or reduce impacts to each Valued Environmental Component (VEC)

**WE NEED YOUR INPUT!**



A part of this project is planned for the river valley, where the new bridge will be located and the development of the Muttart stop. With construction planned to occur in the river valley, there is a requirement for an environmental impact assessment. We have some maps and boards available that outline the proposed construction area and activities and how these may be mitigated after construction. We would really appreciate your comments in your preferred method: stickies on the maps, the comment form at the meeting, or the web survey.



## **NEXT STEPS**

## Next Steps

- Present final preliminary design for the entire Valley Line to you – November 2013
- Utility relocations starting in summer of 2013 through to end of 2014
- Construction beginning as early as 2015, dependent upon funding



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We are at the end of the preliminary design and have provided the recommended preliminary design to you tonight. This plan will provide the direction for the detailed design and construction of the Valley Line.



## P3 Approach

- P3 = Public-Private-Partnership
- P3 delivery method is being used for Stage 1 (Mill Woods to Centre West)
- Design, construction, operation, maintenance and partial financing
- Offers best value-for-money to City & tax payers
- Risks shared between City and private partners
- City will own the infrastructure and control service levels and fares
  - Fares standardized (bus and LRT)
  - Same transit pass (bus and LRT)



P3 (Private/Public Partnership) is the approved delivery method for Stage 1 of the Valley Line. It includes the design, construction, operation, maintenance and financing for the project and offers the best value for the money for this project. Risks are shared between the City and the private partners but the onus will be placed upon the private partners in a detailed description of the services and operations required for the LRT. The Valley Line LRT will be fully integrated into Edmonton's transit system and will have the same fare structure and use the same transit pass, with seamless passenger movement from one type of transit to the other.

The City will ensure that the feedback you have given to shape the design of the stops and stations and how the LRT will integrate into your community, will be used by the P3 team during detailed design and construction.



For more information, to fill in a web survey or to request more information, please contact the City.



## **QUESTIONS**