Valley Line (SE to West) LRT Preliminary Design
Valley Line LRT Corridor

- Council approved
- 27 km line with 3 stations, 25 stops
- 6 bridges
  - Over North Saskatchewan River from Muttart Conservatory to Louise McKinney Park
  - Over Groat Road at 104 Avenue
  - Over 170 Street at 87 Avenue
  - Over Anthony Henday at Webber Greens Drive
  - Over Whitemud Drive at 75 Street
  - Over CN/CP rail lines along 75 Street
- 1 pedestrian bridge at Connors Hill
- 1 tunnel between Louise McKinney Park and 102 Avenue
- 2 Park 'n' Ride sites
- 3 Kiss 'n' Ride sites (other sites being considered)
- Integration with 5 transit centres
- 1 Operation and Maintenance Facility

**PARK ‘N’ RIDE**
Car park connected to transit station that allows commuters to leave vehicles and transfer to bus or LRT.

**KISS ‘N’ RIDE**
A place where commuters are driven and dropped off at a bus or LRT stop/station. Other Kiss ‘N’ Ride locations are being determined.

**TRANSIT CENTRE**
A stopping point for bus and LRT where commuters can move from one transit mode to the other.
Welcome!

Public Involvement for Preliminary Design of the Valley Line (SE to West) LRT

PROJECT PURPOSE: To develop and finalize the Preliminary Design for a 27 km urban style, low-floor light rail system along the approved corridor from Mill Woods to Lewis Farms.

METTING PURPOSE: To provide you with the recommended preliminary design for Mill Woods to Centre West of the Valley Line LRT.

WE ARE HERE
Timeline

Mill Woods to Centre West: Stage 1

2013 - 2016: Procurement and Design
2013: Utility Relocation Begins
2015 - 2019: Construction
2019: Opening Day

• Schedule is dependent on funding approval.

Centre West to Lewis Farms: Stage 2

• Schedule is dependent on funding approval.
• If funding is secured, construction could begin as early as 2020.
Valley Line LRT

- Trains run on approx. 5 minute intervals during peak hours
- Trains share traffic signals with other road users
- A complementary bus network will be developed—some existing bus stops may be relocated to work better with LRT
Urban Style LRT

- Improves connection between LRT and community
- Smaller scale stops, spaced closer together
- Less impact in community
  - Stops at street level
  - Reduced right-of-way
- Encourages pedestrian access
- Fewer barriers, gates and bells
- Strong bus, pedestrian and bicycle connections
- Reduced speeds in congested areas
Urban Style LRT (continued)

- Investment in landscaping and architectural features
- Maximizes openness of space to create safe environment
- Does not share right of way with other road users but does share traffic signals
- City Council direction for extensions to existing and all new LRT lines
Low Floor Technology

- Stops are similar to bus stops—at street level
- Passengers board at street level
- Industry standard for LRT systems worldwide
Integrated Urban Style

roadways

sidewalks
Integrated Urban Style

catenary

public art
Integrated Urban Style

track

stops & stations
<table>
<thead>
<tr>
<th><strong>What is a stop?</strong></th>
<th>A stop is similar to bus stops in terms of scale. It contains basic amenities and is accessed at street level.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is a station?</strong></td>
<td>A station is an elevated stop. It contains basic amenities and is accessed using stairs or elevators.</td>
</tr>
</tbody>
</table>
Stop Elements

- All layouts and scale to be confirmed as design progresses, based on ridership projections
We Heard:
Organic form is preferred by the public.

Organic form that recalls the river and natural history of the area.

Materials:
- Steel structure
- Metal and wood canopy
- Glass shelters
- Unique concrete finishing on platform
Mill Woods Stop

Note: Design along 28 Avenue is ongoing.

Cross Section C  (Looking east)

Bench
Recycling Bin
Paving
Column Wrap
Railing

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

Existing Conditions

Concept Rendering
Views above look west along 28 Avenue from Hewes Way.
(See ◀ symbol on plan.)

Stop Images  View 5
Grey Nuns Stop

Cross Section B  (Looking south)

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

Existing Conditions

Concept Rendering
Views above look north along 66 Street from 31 Avenue intersection. (See ← symbol on plan.)

Stop Images  View 4
Millbourne Stop

Cross Section A (Looking south)

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

Concept Rendering
Views above look north along 66 Street from 38 Avenue intersection. (See ⬤ symbol on plan.)

Stop Images View 3
Bridge Over Whitemud Drive

- A new bridge will carry the LRT over Whitemud Drive at 75 Street.
- Bridge will be located on the east side of the existing 75 Street bridge over Whitemud Drive.
- Pedestrians and cyclists will continue to cross Whitemud Drive on the west side of the existing 75 Street Bridge.

**Existing Conditions**

**Concept Rendering**
Views above look northeast along from Whitemud eastbound off-ramp at 51 Street. (See symbol on plan.)

**Bridge Images View 1**

**Concept Rendering**
Views above look southwest along from Whitemud westbound off-ramp at 51 Street. (See symbol on plan.)

**Bridge Images View 2**
Wagner Station and Park & Ride

Concept Rendering - Exterior
View above looks southeast from the intersection of Wagner Road and Davies Road.
(See << symbol on plan.)

Stop Image  View 1

Concept Rendering - Interior

- An elevated station has been designed at Wagner Station.
- Wagner Station will provide barrier-free access, i.e. elevators and escalators, to the other site facilities and surrounding community.
- Wagner Station includes:
  - Park 'N' Ride
  - Kiss 'N' Ride
  - Transit Centre
  - Potential for future Transit Oriented Development (TOD)

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

- Bench
- Recycling Bin
- Paving
- Column Wrap
- Railing
Concept Rendering - Wagner Station Park & Ride
Birds-eye view above looks north.
(See ◀ symbol on plan.)

Stop Image  View 2
Argyll Bridge

- This bridge, also known as a guideway, carries the LRT over Argyll Road.

Existing Conditions

Concept Rendering
Views above look north from Wagner Road just east of Wagner High School. (See symbol on plan.)

Bridge Images View 3

Existing Conditions

Concept Rendering
Views above look north along 83 Street from the intersection of Argyll Road and 83rd Street. (See symbol on plan.)

Bridge Images View 4
73 Avenue Stop

Cross Section D  (Looking south)

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

Existing Conditions  (Looking north)

Concept Rendering
Views above look north along 83 Avenue from 73 Avenue intersection. (See ⬇️ symbol on plan.)

Stop Images  View 4
Bonnie Doon Stop

Cross Section C (Looking south)

Stop Design Elements

- Bench
- Recycling Bin
- Paving (Patterned Concrete)
- Column Wrap
- Railing

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

Existing Conditions (Looking north)

Concept Rendering
Views above look north along 83 Avenue from just north of 82 Avenue intersection. (See • symbol on plan.)

Stop Images  View 3
Holyrood Stop

Cross Section B  (Looking south)

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

Existing Conditions  (Looking north)

Concept Rendering
Views above look north along 85 Avenue towards 93 Avenue intersection. (See ⦿ symbol on plan.)

Stop Images  View 2
Strathearn Stop

Cross Section A (Looking east)

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

Existing Conditions (Looking west)

Concept Rendering

Views above look west along 95 Avenue towards 90 Street intersection. (See • symbol on plan.)

Stop Images View 1
Connors Road Pedestrian Bridge

- The existing pedestrian bridge is too short to span the corridor when the LRT is constructed. A new pedestrian bridge is required.
- During construction, pedestrians and cyclists will be detoured, as required. See separate Environmental Impact Assessment (EIA) board for preliminary pathway detour information.

Existing Conditions (Looking west)

Concept Rendering

View above look east up Connors Road towards pedestrian bridge. (See symbol on plan.)

Bridge Images View 2

Concept Rendering

View above looks northeast down towards Connors Road and pedestrian bridge. (See symbol on plan.)

Bridge Images View 3

Concept Rendering

Views above looks west down Connors Road towards pedestrian bridge. (See symbol on plan.)

Bridge Images View 4
The final recommended preliminary design of Connors Road shown here includes the option of designing and constructing Connors Road as far south as illustrated with the dashed red line.
Muttart Stop

Cross Section A  (Looking southwest)

Stop Design Elements

Bench
Recycling Bin
Paving (Patterned Concrete)
Column Wrap
Railing

Stop Images  View 1

Existing Conditions  (Looking southwest)

Concept Rendering
Views above look southwest along access road adjacent to Muttart and 98 Avenue.
(See • symbol on plan.)

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

- A portal design will complement the surrounding area and will consider existing trail connections.
- Traction Power Substation will be located at the top of the bank.

View 10

Birdseye view looking northwest towards downtown from river valley.

(See ▲ symbol on plan.)
Portal - The Quarters

**View 6**
Looking east along 102 Avenue from 97 Street intersection.
(See symbol on plan.)

**View 7**
Looking east along 102 Avenue from 96 Street intersection.
(See symbol on plan.)

**View 8**
Looking east along 102 Avenue towards Jasper Avenue intersection.
(See symbol on plan.)

**View 9**
Birdseye view looking west along 102 Avenue from Jasper Avenue intersection.
(See symbol on plan.)
Quarters Stop

Cross Section C  (Looking east)

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

Existing Conditions  (Looking west)

Concept Rendering
Views above look west along 102 Avenue from 96 Street intersection.
(See •< symbol on plan.)

Stop Images  View 5
Churchill Stop

Note: Design along 102 Avenue is ongoing.

Cross Section B (Looking east)

Stop Design Elements

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

Existing Conditions (Looking west)

Concept Rendering

Views above look west along 102 Avenue from 99 Street intersection.
(See •< symbol on plan.)

Stop Images View 2
Churchill Stop - Connection to Underground LRT
View 3
Looking north towards Churchill Stop.
(See [< symbol on plan.])

View 4
Birdseye View looking north towards Churchill Stop.
(See [< symbol on plan.])
Centre West Stop

Note: Design along 102 Avenue is ongoing.

Cross Section A (Looking east)

Stop Design Elements

Existing Conditions (Looking west)

Concept Rendering
Views above look west along 102 Avenue towards 101 Street intersection. (See • < symbol on plan.)

Stop Images View 1

Bench
Recycling Bin
Paving (Patterned Concrete)
Column Wrap
Railing

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

Your input is valuable and used along with other information to inform the project.

We look forward to seeing you at our next public event in September 2013.

For more information go to: www.edmonton.ca/setowestlrt
## What We Heard

### Stops
- Stakeholders confirmed themes for a variety of stop/station elements, such as benches and paving.

### Shelter Canopies
- Of three shelter canopy options, stakeholders preferred the organic shaped canopy.

### Pedestrian Crossings
- Stakeholders value pedestrian access and want information on how they will navigate the LRT corridor.

### Bicycles
- Stakeholders indicated they want bicycle lanes on major roadways.

### Vehicular Movements and Access
- Stakeholders voiced concerns about impacts to vehicle accesses into neighbourhoods, businesses, schools and residences along the LRT corridor.

### Parking
- Stakeholders voiced concerns about the loss of parking along the corridor.

### Noise
- Stakeholders voiced concerns about noise from the operation of the LRT.

### Vibration
- Stakeholders voiced concerns about vibration during construction and operations.

### Connors Road and 95 Avenue Design Amendment
- Stakeholders have indicated a preference for the design alternative presented at Stage 4.

### Shortcutting and Parking in Neighbourhoods
- Stakeholders voiced concerns about people parking in residential neighbourhoods to access the LRT or shortcutting through neighbourhoods.

### Park ‘n’ Ride
- Stakeholders identified that Park ‘n’ Rides needed to be increased in size and/or other locations should be added.

## How the Information is being used

### Stakes
- The preferred themes for stop/station elements are shown on the Corridor and Access Plans adjacent to the stop plans. These are not final selections but provide direction to the design team.

- The “organic” shaped shelter canopy will be used at most LRT stops, with the exception of some downtown stops.

- New, retained and relocated pedestrian crossings are illustrated on the Corridor and Access Plans. Accommodating pedestrians and creating ease of access for pedestrians to the LRT is a priority.

- Bicycle lanes are included along the corridor as per the Concept Plan approved by City Council. Local connections to the City of Edmonton cycling network will be refined as the cycling network grows and as preliminary design continues.

- New, retained and relocated vehicle movements and accesses are illustrated on the Corridor and Access Plans.

- New and retained vehicle parking is illustrated on the Corridor and Access Plans.

- Noise impact assessments are ongoing. Current information has been added to Corridor/Access Plans. See Noise Impact Board.

- General vibration screening is ongoing. Pre-construction assessment of structures and houses abutting the LRT route may be completed. See Vibration Impact Assessment board.

- A technical recommendation has been prepared that has given consideration to stakeholder input.

- The City will assess these potential issues after construction to determine their impact and strategies to avoid them.

- The design of Park ‘n’ Rides is currently ongoing.
Public Art

- Public art is considered to be a key component to attractiveness and identity of city
- Public art strengthens local economy
- Support for arts is a reflection of a progressive municipality
- The City dedicates 1% of qualifying construction budgets to public art
- Approved public art will be displayed within or in close proximity to the LRT corridor
- Art will be created by a wide range of artists, including those with Aboriginal and multicultural backgrounds. There will be opportunities for local artists
- Selected art will suit the scale and reflect the diversity of the neighbourhoods
- Art pieces may be functional, integrated and/or stand alone
- The Edmonton Arts Council will develop a Public Art Plan outlining potential public art projects along the LRT corridor

Integrated public art at transit stops.
As part of the EIA, the following field investigations have been completed or are underway:

- **Vegetation** – vegetation and rare plant surveys, completed in summer 2012.
- **Wildlife** – a breeding bird survey, completed in spring 2012; wildlife movement reconnaissance, winter 2012.
- **Fish** – a fish and fish habitat assessment, completed as part of the earlier planning phase.
- **Geotechnical** – a series of boreholes have been drilled in the river valley, to characterize fills, surficial deposits, and bedrock and, where appropriate, assess contaminants.
- **Hydrology** – borehole data is being used to assess groundwater conditions.
- **Historical Resources** – archaeological and paleontological impact assessments, completed in 2011.
- **Noise and vibration assessment** – completed in 2012.

**Have Your Say!**

To comply with the City of Edmonton’s River Valley Area Redevelopment Plan (Bylaw 7188), an Environmental Impact Assessment of the project is being conducted.

Your input is important.

Please provide any information that you wish the project team to consider regarding the environment within, or adjacent to, the project boundaries. A draft is complete.

Put your comments directly on the map with sticky notes or complete the comment form today or online at [www.edmonton.ca/setowestlrt](http://www.edmonton.ca/setowestlrt)

Your comments will be compiled and considered during the finalization of the environmental assessment and future development of mitigation measures.
An Environmental Impact Assessment (EIA) document is being prepared to meet the requirements of the City of Edmonton’s North Saskatchewan River Valley Area Redevelopment Plan (Bylaw 7188).

The EIA:

- Describes existing environmental conditions
- Assesses potential impacts
- Describes mitigation measures intended to eliminate or reduce impacts to each Valued Environmental Component (VEC)
- The following VECs are being assessed to identify ways in which the proposed project could affect biophysical and socio-economic resources:
  - geology and geomorphology (including slope stability)
  - soils
  - surface water and groundwater
  - vegetation
  - wildlife
  - habitat connectivity
  - fish and aquatic resources
  - land disposition and zoning
  - residential land use
  - recreational land use
  - utilities
  - worker and public safety
  - visual resources
  - historical resources

- The EIA may also be submitted to Fisheries and Oceans Canada and Transport Canada as supporting information for Fisheries Act and Navigable Waters Protection Act approvals, respectively.
ENVIRONMENTAL IMPACT ASSESSMENT
Key Activities and Mitigation
Under Consideration

EDMONTON

TRANSFORMING EDMONTON
BRINGING OUR CITY VISION TO LIFE

HENRIETTA MUIR EDWARDS PARK

LOUISE MCKINNEY PARK

CENTENNIAL GARDENS

ROSE GARDEN

SOW LAWN

CLOVERDALE PEDESTRIAN BRIDGE

CLOVERDALE

MUTUARY CONSERVATORY AND PARK

HENRIETTA MUIR EDWARDS PARK

GALLAGHER PARK

ENNISWELL VALLEY

RIVERDALE

NORTH SASKATCHEWAN RIVER

LOW LEVEL BRIDGE

58 AVE BRIDGE

SCION ROAD

CONNORS ROAD

BONNEE DON

EDMONTON
GREEN PROJECT INITIATIVES

- Landscaping at Wagner Station will emphasize green space with intent to create a stepping stone linkage between the Natural Area and upstream reaches of Mill Creek.
- Guideway drainage has been designed to provide additional inputs of water to the ravine, enhancing amphibian habitat and riparian community sustainability.

EXAMPLES OF SPECIES OBSERVED IN THE NATURAL AREA

Amphibians
- Boreal chorus frog
- Wood frog

Birds
- Swainson’s hawk
- Tree swallow
- Clay-coloured sparrow
- White-throated sparrow
- Black-billed magpie
- Yellow warbler

Mammals
- Porcupine
- Coyote

POTENTIAL IMPACTS AND MITIGATION MEASURES

Loss of vegetation and habitat resulting from clearing
- Restore temporary working space within the Natural Area; restore some manicured lands north of the Natural Area (area yet to be determined).
- Compensate for tree/shrub loss as required by City’s Corporate Tree Policy.
- Locate access road within Manitoba Maple community to extent possible.

Disturbance to rare plants
- Transplant and monitor rare plants found within the project area.

Habitat fragmentation
- Landscape to close gaps created during construction.
- Ensure that the new access road culvert is wildlife friendly.

Disturbance to nesting Swainson’s hawks
- Undertake required vegetation clearing between 01 September and 15 March.
- If active nest is present in year of construction, avoid significant construction at Wagner Park until young are independent, approximately August - have biologist confirm.

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Noise Impact Assessment

The City of Edmonton Urban Traffic Noise Policy (UTNP) states that existing residential locations backing onto transportation facilities that experience noise levels in excess of 65 dBA Leq(24) will require noise attenuation.

Noise modeling has been conducted along the Valley Line (SE to West) LRT route.

Based on modeling, noise attenuation may be required in specific locations along the West segment.

Noise attenuation will be constructed at the same time as the LRT.

<table>
<thead>
<tr>
<th>FAMILIAR NOISES</th>
<th>dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside average urban home</td>
<td>50</td>
</tr>
<tr>
<td>Quiet street</td>
<td>50</td>
</tr>
<tr>
<td>Normal conversation at 1 m</td>
<td>60</td>
</tr>
<tr>
<td>Noisy restaurant</td>
<td>70</td>
</tr>
<tr>
<td>Highway traffic at 15 m</td>
<td>75</td>
</tr>
<tr>
<td>Busy traffic intersection</td>
<td>80</td>
</tr>
<tr>
<td>Bus or heavy truck at 15 m</td>
<td>88-94</td>
</tr>
<tr>
<td>Jackhammer</td>
<td>88-98</td>
</tr>
<tr>
<td>Freight train at 15 m</td>
<td>95</td>
</tr>
<tr>
<td>Jet taking off at 600 m</td>
<td>100</td>
</tr>
<tr>
<td>Amplified rock music</td>
<td>110</td>
</tr>
</tbody>
</table>
Vibration Impact Assessment

- Vibration could occur during LRT construction and operation
- LRT runs on a continuous welded rail, a technology that minimizes vibration during operation
- A complete vibration screening of the SE to West corridor (route) is being conducted as part of Preliminary Design
- Vibration screening is based on the US Federal Transit Administration (FTA) screening process
- Corridor Wide Assessment is ongoing
  - Screening based on general vibration assessment
  - Accounts for train type, speed, distance from track
  - Screens out residences not affected by vibration
  - Identifies areas that may be affected
- Detailed Vibration Assessment
  - Includes site specific vibration measurements
  - Conducted at Winspear Centre for Music and Citadel Theatre areas (acoustic sensitivities)
  - Recommendations to reduce vibration during LRT operations will be provided if warranted
- Pre-construction assessments of structures and houses abutting the LRT route may be completed
Land Requirements

- Land requirements were initially identified in the Concept Plan.
- Engineering completed through preliminary design has confirmed land requirements.
- Land requirements are identified on the corridor maps in purple.
- The City is actively pursuing property purchases between Mill Woods and Centre West but is not actively pursuing properties between Centre West and Lewis Farms.

City Process to Acquire Land

- The City prefers to purchase land that is up for sale.
- Once the City begins to actively acquire properties for the project and a property is not up for sale, the City will contact the property owners.
- The City will negotiate in good faith to reach an agreement to purchase the property for fair compensation.
- If the property owners and the City cannot reach an agreement, the City may proceed with expropriation.
North Saskatchewan River Bridge

- The new LRT bridge to be built on the existing pedestrian bridge alignment.
- New LRT bridge to incorporate new pedestrian and bicycle facilities under the bridge deck.
- Existing pedestrian bridge to be demolished prior to new LRT bridge construction.
- During construction, pedestrians and bicyclists will be detoured to Low Level Bridge.
- The project team assessed the feasibility of maintaining the existing pedestrian bridge during construction. Due to increased environmental impact on the River and proximity to existing residential development, this option is not being pursued.
- The Extradosed Bridge, as shown here, was approved by Council on February 20, 2013.
www.edmonton.ca/setowestlrt