

# SE to West LRT Preliminary Design

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# Project Purpose

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To develop and finalize the Preliminary Design  
for a 27 km urban style low-floor LRT  
along the City Council-approved corridor (route)  
from Mill Woods to Lewis Farms.

# Project Schedule

## Where we were

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Conceptual Design: 2009 – 2011

City Council Approval  
of Concept Plan: 2011 - February 2012



## Where we are going

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Public Involvement and  
Communication: 2011 – 2013

Preliminary Design: Completion Fall 2013

Detailed Design, Construction  
and Operation: In Future

# Concept Phase

During Concept Phase, City Council approved

- Corridor (route) location
- Track alignment (where track fits in right-of-way)
- Stop/station/transit centre locations
- Low floor vehicles



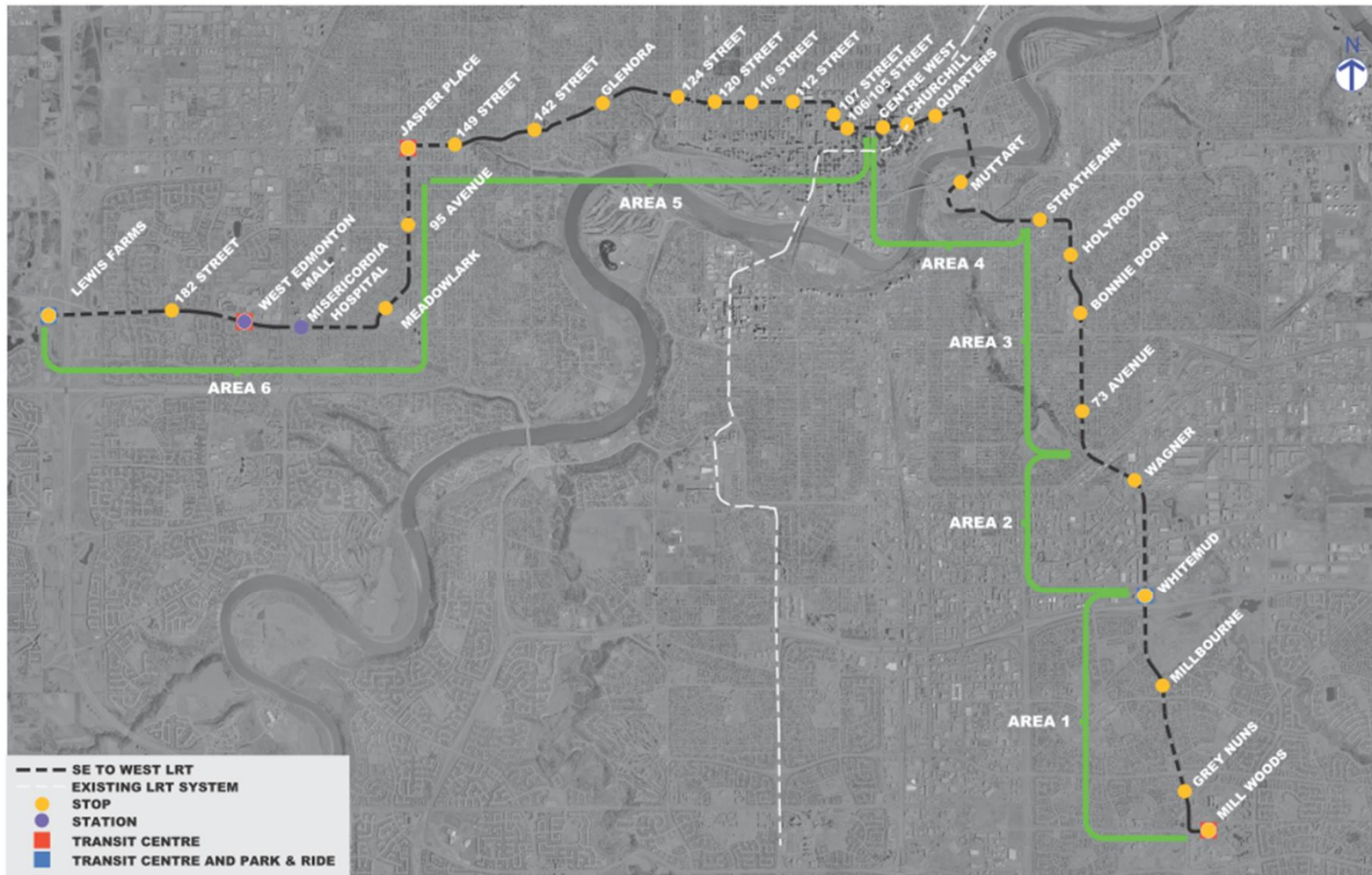


# Preliminary Design Phase

Refining the City Council-approved Concept Plan in greater detail to better understand impacts and opportunities

- Aesthetics—structural, stop/station and landscape
- Connectivity to the existing transportation network—all modes
- Understanding impacts to stakeholders and working to resolve/minimize issues
- Public art opportunities

# Approved Corridor



# SE to West LRT

- 27 km route from Mill Woods to Lewis Farms
- Connection to existing LRT at Churchill Station downtown
- Low-floor technology, urban style
- 2 stations, 27 stops
- 6 bridges and 1 pedestrian bridge
- 1 tunnel
- 3 transit centres
- 2 Park 'n Ride sites
- 1 Operation and Maintenance Facility



# SE to West LRT

- Trains run on 5 minute intervals during peak hours
- Trains share traffic signals with other road users
- Trains operate in their own right-of-way
- A complementary bus network is being reviewed—some existing bus stops may be relocated to better integrate with LRT







# Urban Style LRT

- Improves connections between LRT and community
  - Smaller scale stops/stations, spaced closer together
  - Less impact in community
  - Increased pedestrian access
  - Reduced right-of-way
  - Fewer barriers (bells and whistles)
  - Links to destinations with strong bus, pedestrian and cyclist connections
  - Reduced speeds in congested areas
  - Investment in landscaping and architectural features
  - Maximize 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

- Equipment is located on roof of train
- Stops are similar to bus stops—  
at street level
- Passengers board at street level
- Industry standard for LRT  
systems worldwide

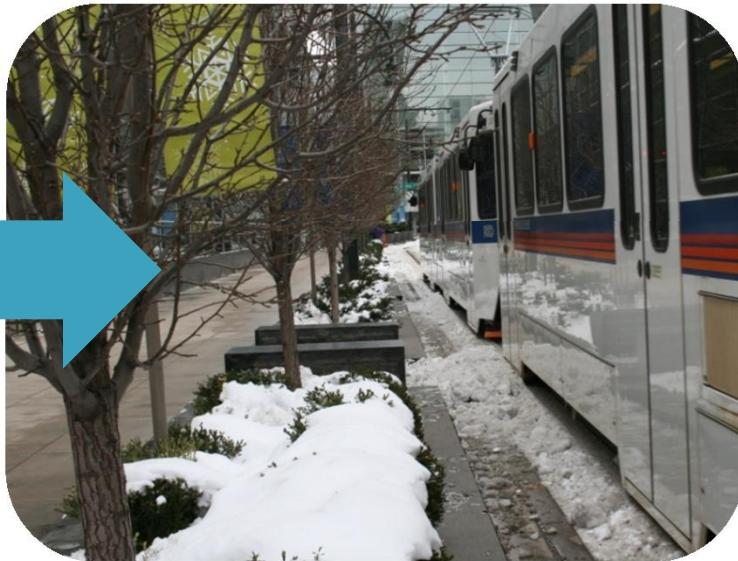


# Integrated Urban Style

roadways



sidewalks



# Integrated Urban Style

catenary

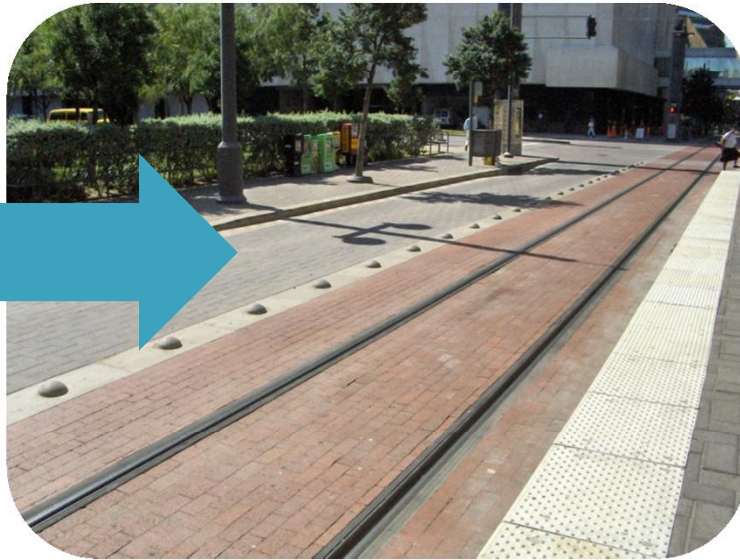


public art

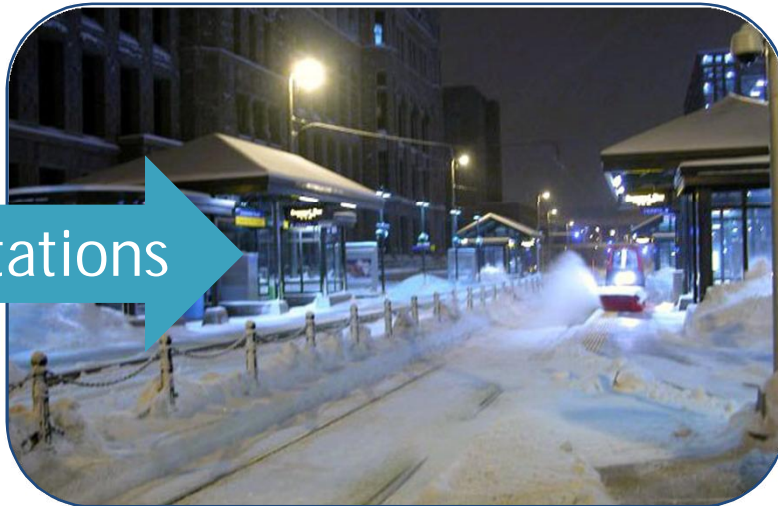


# Integrated Urban Style

track



stops & stations



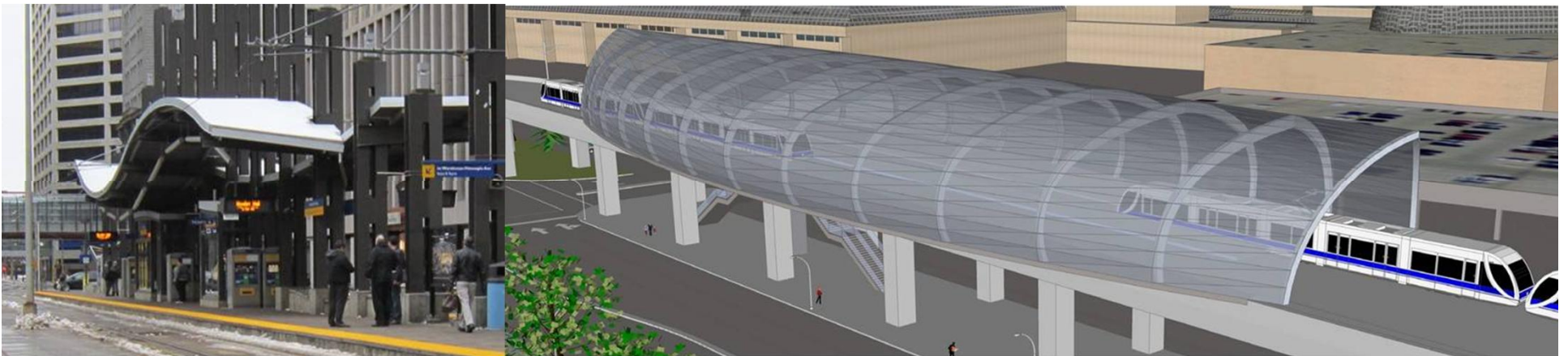
# Stops and Stations

What is a stop?

A stop is similar to bus stops in terms of scale. It contains basic amenities and is accessed at street level.

What is a station?

A station is an elevated stop. It contains basic amenities and is accessed using stairs or elevators.



# Noise Impact Assessment

- Noise modeling is being conducted in keeping with the City's Urban Traffic Noise Policy along the LRT corridor (route)
  - Results will be shared (Fall 2012)
- Traffic noise levels are measured in decibels (dBA) over several days and assessed for a 24 hour period (Leq24)
- If predicted noise level is 65 dBA Leq24 or greater, a noise barrier may be provided

FAMILIAR NOISES	dBA
Inside average urban home	50
Quiet street	50
Normal conversation at 1 m	60
Noisy restaurant	70
Highway traffic at 15 m	75
Busy traffic intersection	80
Bus or heavy truck at 15 m	88-94
Jackhammer	88-98
Freight train at 15 m	95
Jet taking off at 600 m	100
Amplified rock music	110

# Vibration Impact Assessment

- Vibration may occur during LRT construction and operation
  - Vibration impacts during construction can be mitigated by timing heavy construction during off-peak hours
  - LRT runs on continuous welded rail to minimize vibration
- A complete vibration screening of corridor (route) is being conducted
- Pre-construction assessments of structures abutting the LRT route will be completed





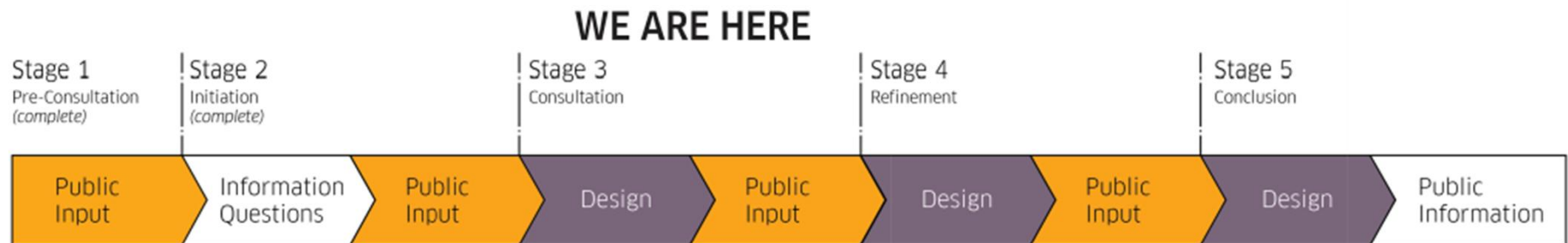
# Environmental and Geotechnical

- Environmental Impact
  - Mitigating environmental impact is significant throughout all phases of project
  - Environmental impact assessments are being conducted
- Geotechnical Studies
  - Assess ground conditions to determine suitability for construction
  - Provide design advice on stability of slopes for foundations, tunnels, chambers and other structures



## Public Involvement in Preliminary Design

Determining how the LRT will look, feel and integrate into your community.



## 5 Stages of Public Involvement

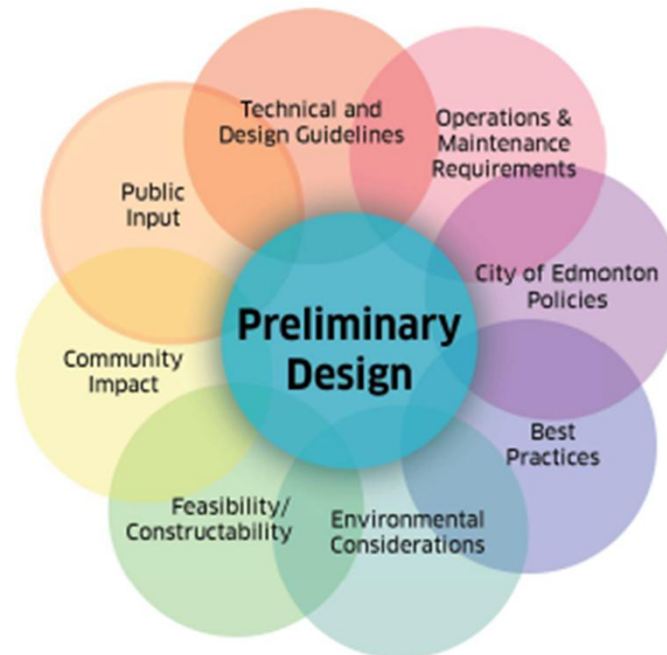
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|---------|--|
| Stage 1 | Pre-Consultation                       |
| Stage 2 | Initiation                             |
| Stage 3 | Consultation, May – December 2012      |
| Stage 4 | Refinement, September 2012 – June 2013 |
| Stage 5 | Conclusion, January – December 2013    |

## How your input is used

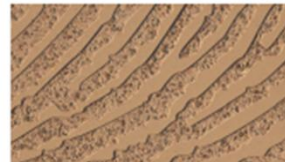
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Your input is valuable and used along with other information to inform the project.



## What kind of feedback are we looking for?

- Look/feel of stop/station—landscape, architecture, colours, treatment, public art
- Important connections/access points
- Confirmation of how amenities will look



## What kind of feedback are we unable to use?

- Comments about decisions made in Concept Phase—route, stop/station locations, vehicle technology
- Comments about elements that cannot be addressed until later stages of the project
- Comments regarding elements outside the project scope



**Thank you**

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