



Urban Rail Renewal in Calgary Construction Nearly Complete!


17 AVENUE SE STAMPEDE CROSSING (17SX)

CEA Transportation Connects Conference, March 2024


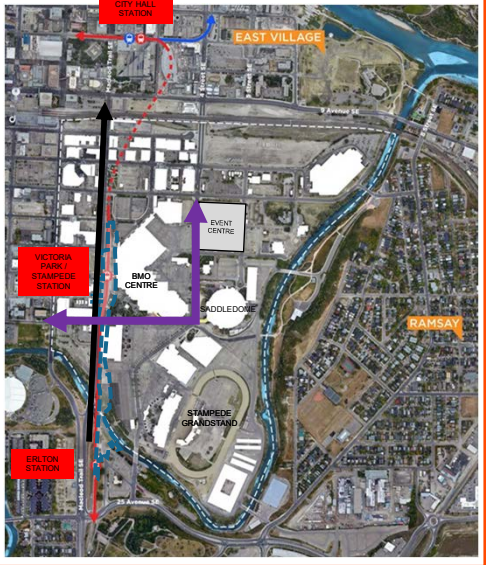

Alana Getty Somers, P.Eng., ISL Engineering and Land Services Ltd.



1

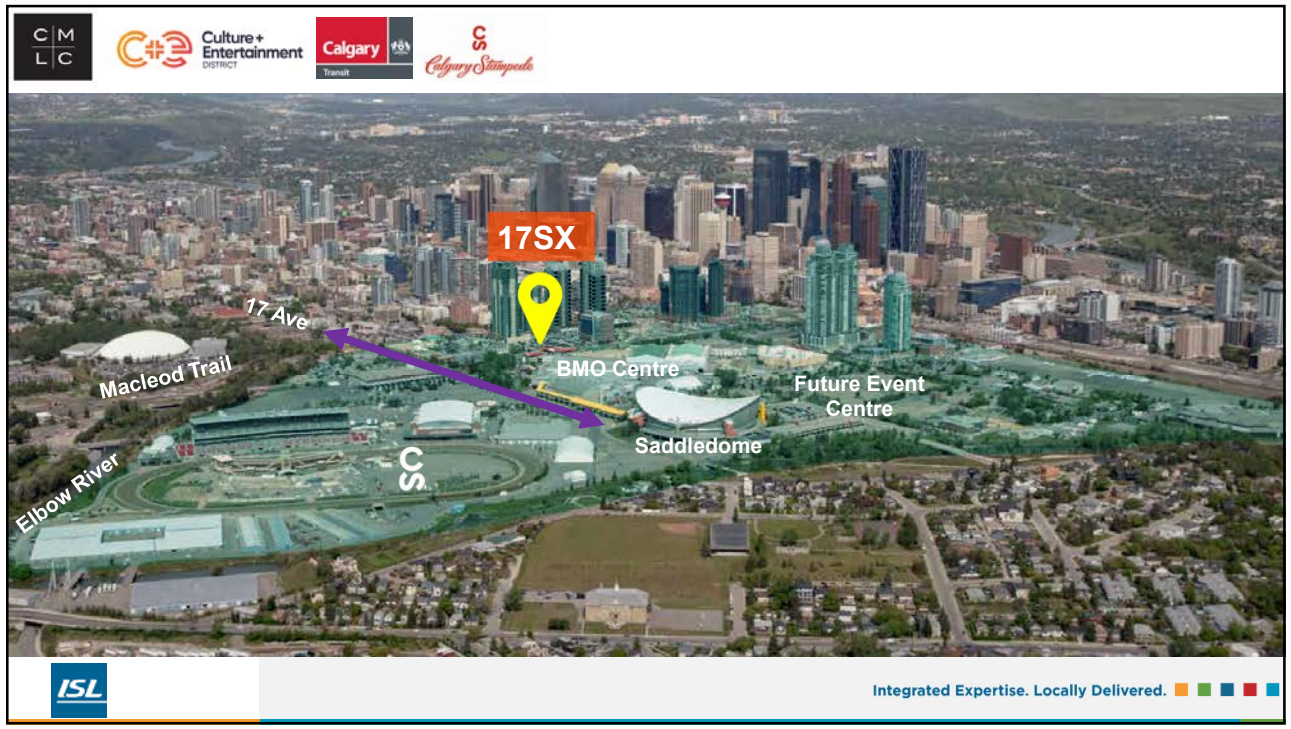


Calgary's Future Rapid Transit Network Map (June 2020)

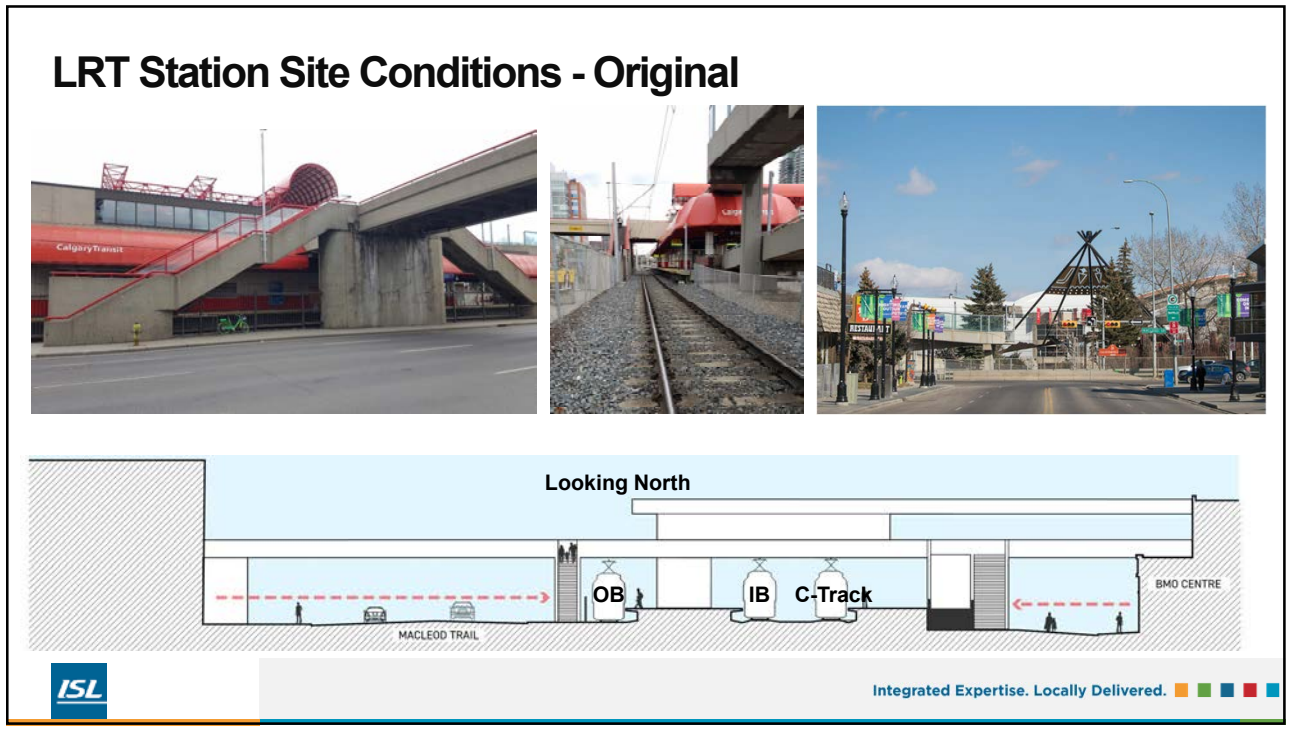


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2

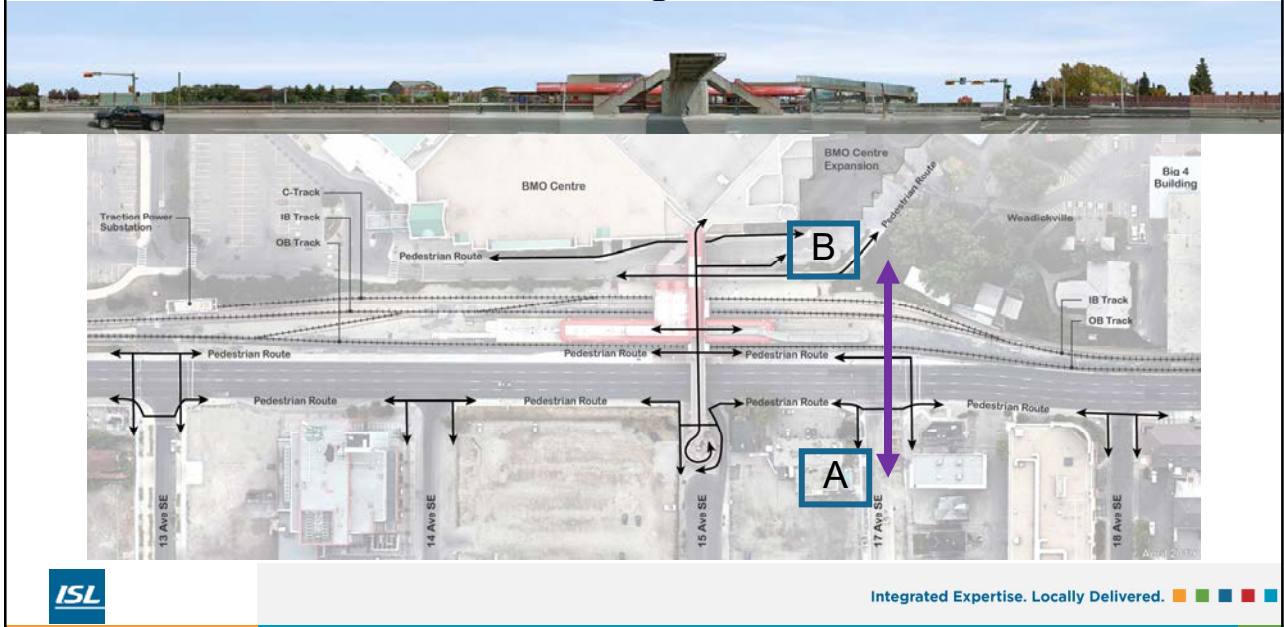


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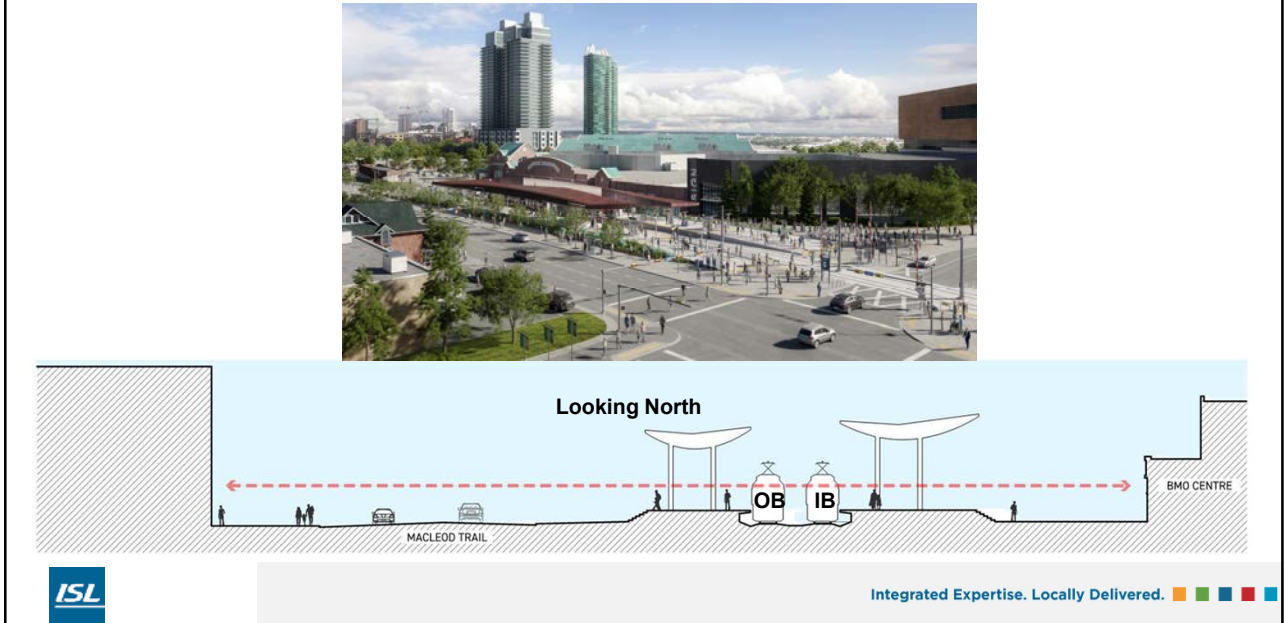
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LRT Station Site Conditions - Original



5

Victoria Park / Stampede LRT Station Rebuild



6

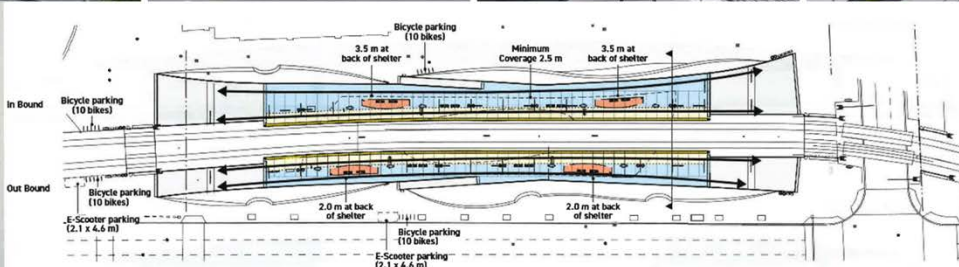
Victoria Park / Stampede LRT Station Rebuild



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Victoria Park / Stampede LRT Station Rebuild



	IB (East) Platform Area m ²	OB (West) Platform Area m ²	Total Platform Area m ²	Total Platform Area Comparison	IB (East) Platform Area Distribution (%)	OB (West) Platform Area Distribution (%)	Paths/Planters Area m ²	Canopy Area m ²	Canopy Coverage %	Notes
Existing	n/a	n/a	850	1.0	n/a	n/a				
Ultimate	968	777	1745	2.0	55.5%	44.5%	1650	790	45.2	

October 1, 2020

DL2020-0004



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8

Construction Phasing to Maintain Transit Operations

- Shoo-fly Track
- Temporary Station
- Roadway Narrowed
- Clear Area for Construction



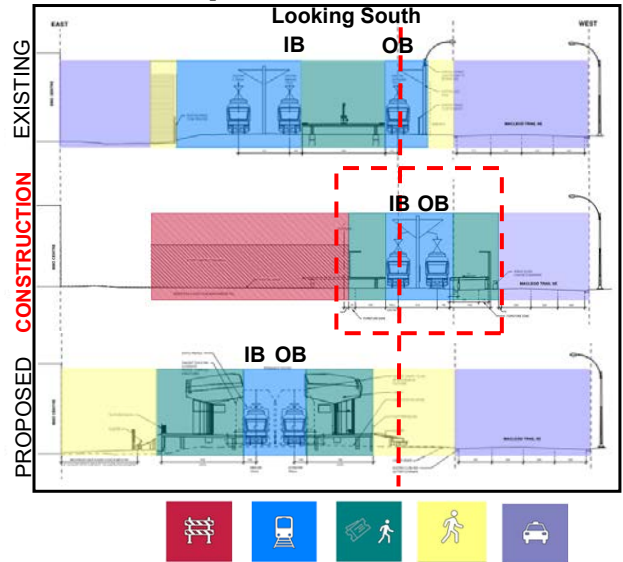
No long-term station closure at Victoria Park / Stampede Station



Reduced costs with no LRT replacement service



Reduced schedule risk due to a more balanced construction scope



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At-Grade Crossing Design

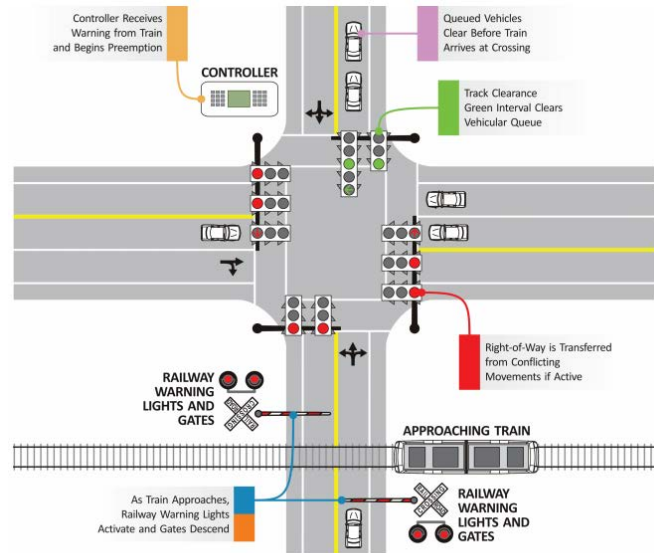


FIGURE 5 Railway preemption actions at an at-grade crossing. Source: Adapted from NCHRP Report 812: Signal Timing Manual, Second Edition (Urbanik et al. 2015).

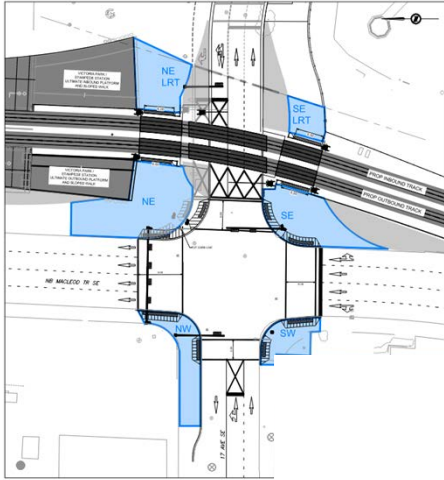


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10


Pedestrian Storage


- Ultimate Condition




PEDESTRIAN STORAGE AREA (m2) ULTIMATE CONDITION			
LOCATION	DESIGN	MODEL	VARIANCE
NW	116	100	16
NE	252	250	2
SW	76	50	26
SE	164	80	88
NE LRT	124	120	4
SE LRT	51	45	6

PEDESTRIAN SIDEWALK WIDTH (m) ULTIMATE CONDITION			
LOCATION	DESIGN	MODEL	VARIANCE
MACLEOD TRAIL NORTH	9	12	-3
MACLEOD TRAIL SOUTH	6	6	0
NORTH LRT CROSSING	6	6	0
SOUTH LRT CROSSING	5	5	0





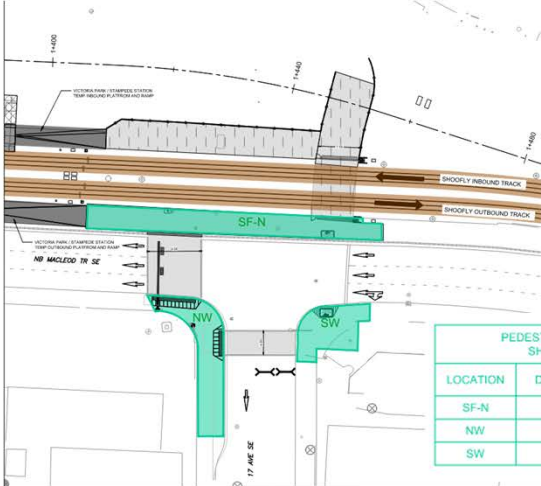


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Pedestrian Storage


- Shoofly Under Construction / In Operation



PEDESTRIAN STORAGE AREA (m2) SHOOFLY IN OPERATION			
LOCATION	DESIGN	MODEL	VARIANCE
SF-N	175	95	80
NW	115	105	10
SW	79	70	9

PEDESTRIAN SIDEWALK WIDTH (m) SHOOFLY IN OPERATION			
LOCATION	DESIGN	MODEL	VARIANCE
MACLEOD TRAIL NORTH	9	7	2
LRT CROSSING	7	7	0





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12

Pedestrian Storage – 2022

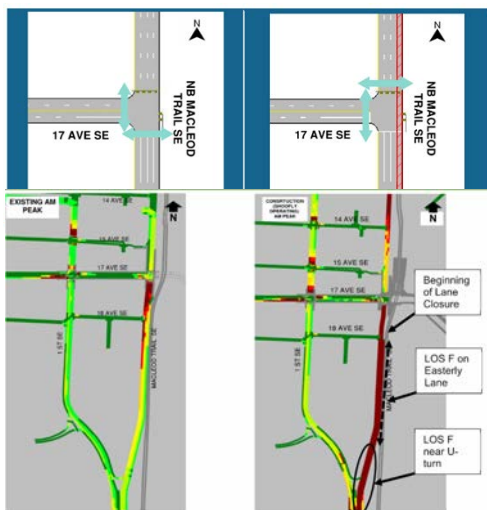


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13

17 Ave SE: One-Way WB

- Shoofly Under Construction / In Operation

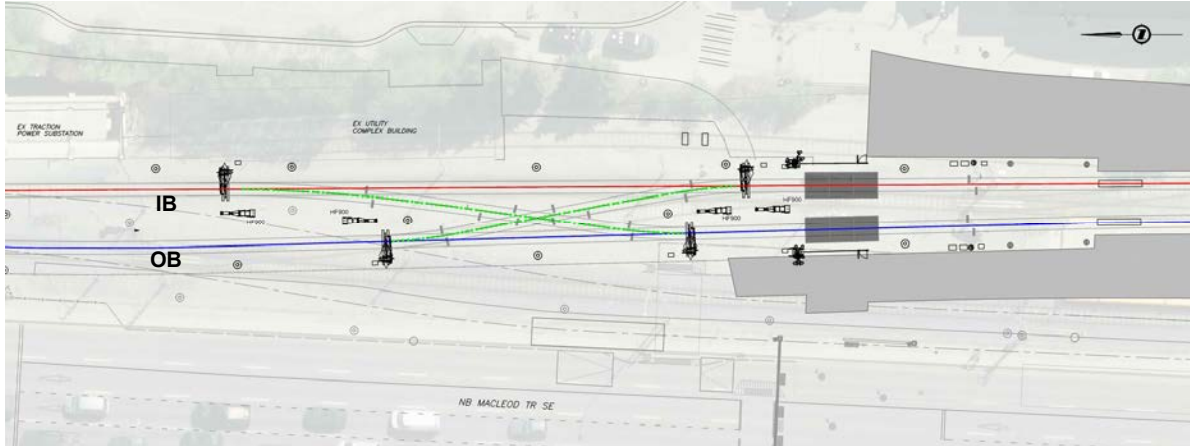


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14

Adding Operational Flexibility

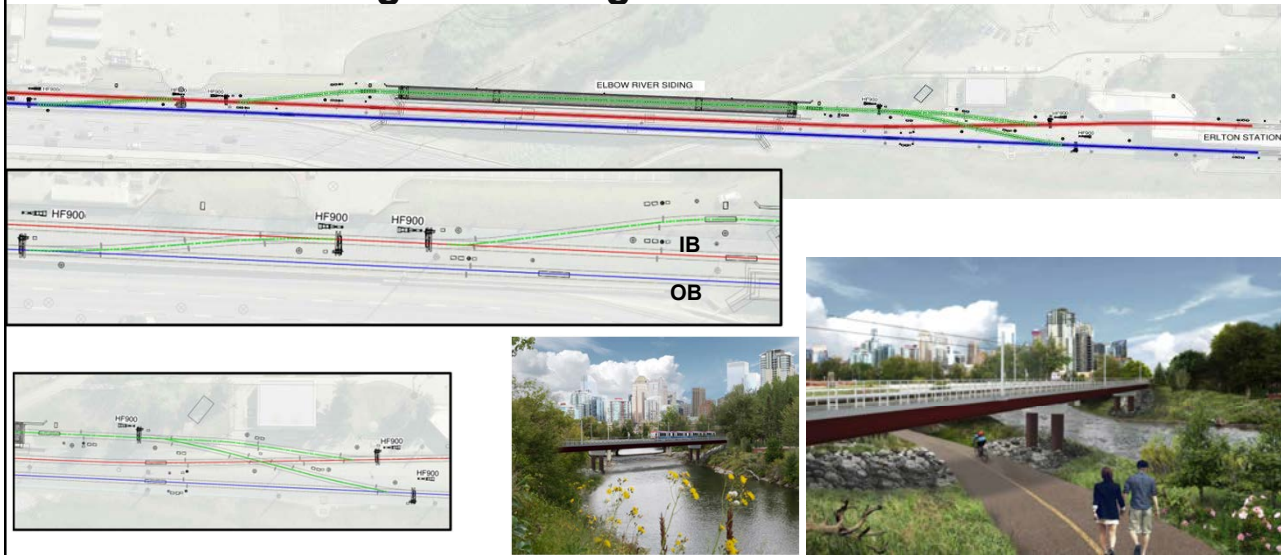
- Asymmetric Double Crossover



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15

Elbow River Siding – LRT Bridge



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16

Project Timeline – Milestones

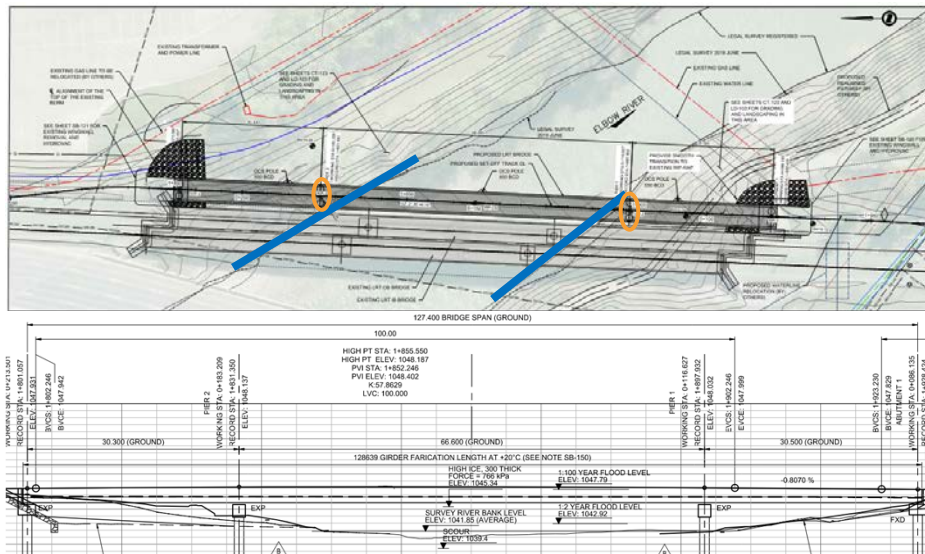
Activity name	Start	Finish	% Complete
✓ Design Milestones	Nov 5, 2019 A	Feb 8, 2022 A	100%
✓ Design Milestones 17SX	Nov 5, 2019 A	Feb 8, 2022 A	100%
> Enabling Works- Design Milestones	Nov 5, 2019 A	Nov 10, 2020 A	100%
> Bridge - Design Milestones	Nov 18, 2019 A	Apr 17, 2020 A	100%
> Permanent Works- Design Milestones	Nov 25, 2019 A	Feb 8, 2022 A	100%
> Design Milestones 17EX	Dec 11, 2019 A	Jan 12, 2022 A	100%
> Tender Milestones	Feb 14, 2020 A	Apr 14, 2022 A	100%
✓ Construction Milestones	Oct 11, 2022 A	Oct 10, 2024	81%
◆ 17EX Construction Substantial Performance	May 31, 2024	May 31, 2024	
◆ 17SX Construction Substantial Performance (Full Platforms)	Sep 17, 2024	Sep 17, 2024	
◆ 17SX/EX Project Completion	Oct 10, 2024	Oct 10, 2024	
◆ Permanent Station in Operation (Full 1B & 1/2 OB Platform)	Dec 4, 2023 A	Dec 4, 2023 A	
◆ Shoofly with Temporary Station in Operation	Oct 11, 2022 A	Oct 11, 2022 A	



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Elbow River Siding – LRT Bridge



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18

Construction Photos – LRT Bridge



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Construction Photos – LRT Bridge



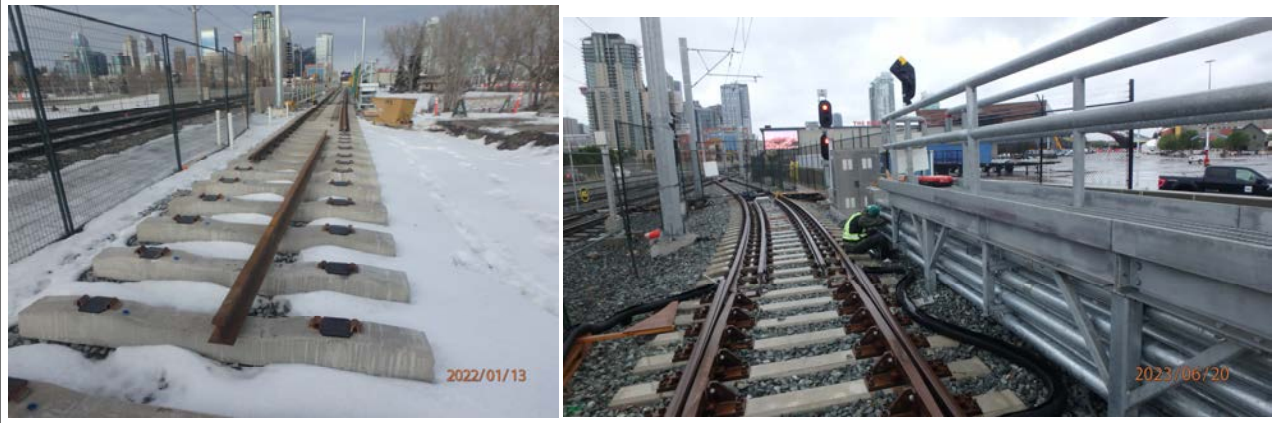
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Construction Photos – LRT Bridge



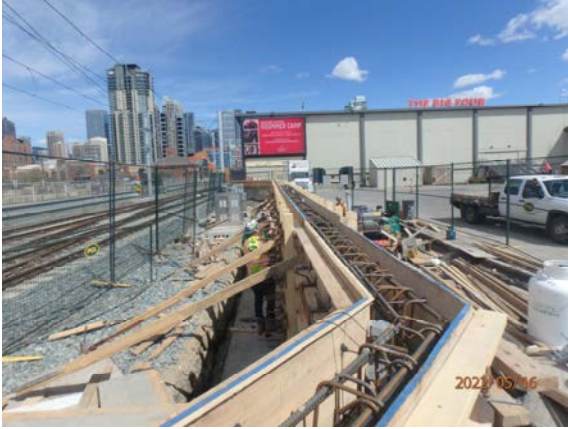
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Construction Photos – LRT Bridge



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Construction Photos – Flood Wall



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23

Construction Photos – Utility Complex


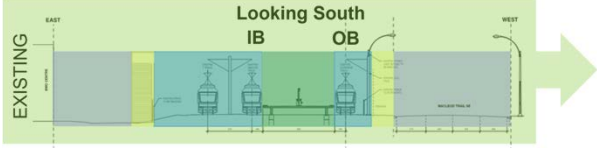
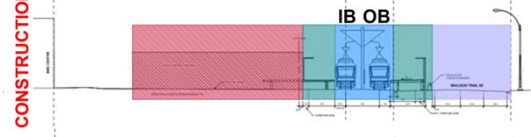
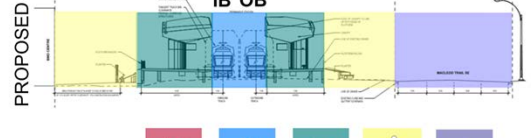




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24

Construction Phasing - Photos

Original Conditions


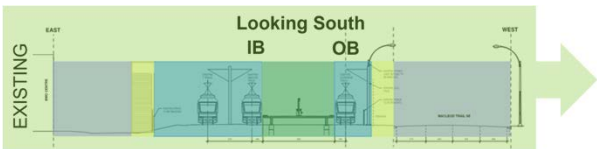
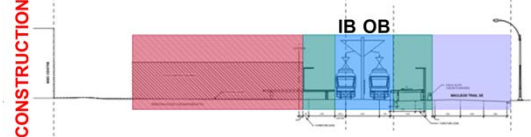
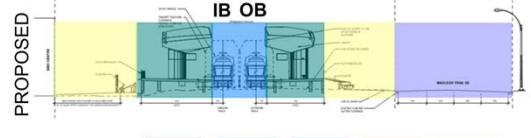









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25

Construction Phasing - Photos

Original Conditions

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26

Construction Phasing - Photos

Enabling Works

Looking South
IB OB

EXISTING

CONSTRUCTION

PROPOSED

IB OB

IB OB

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27

Construction Phasing - Photos

Enabling Works

Looking South
IB OB

EXISTING

CONSTRUCTION

PROPOSED

IB OB

IB OB

ISL

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28

Construction Phasing - Photos

Enabling Works

Looking South

The diagram illustrates the construction phasing for 'Looking South' in three stages: EXISTING, CONSTRUCTION, and PROPOSED. The EXISTING stage shows a cross-section of the transit line with 'IB' (Inbound) and 'OB' (Outbound) tracks. The CONSTRUCTION stage shows a large red hatched area indicating the construction zone, with a green arrow pointing right. The PROPOSED stage shows the final layout with various colored sections. A legend at the bottom includes icons for different transit modes: a red square with a Chinese character, a blue square with a train icon, a green square with a person walking icon, a yellow square with a person walking icon, and a purple square with a car icon. The ISL logo is in the bottom left, and the slogan 'Integrated Expertise. Locally Delivered.' with a color-coded bar is in the bottom right.

A photograph showing a construction site for a transit station. In the foreground, several concrete sleepers are laid out on a gravel bed. A red 'STOP' sign is visible. In the background, a building with a red awning that says 'Calgary Transit' is visible, along with a black fence and some construction equipment.

29

Construction Phasing - Photos

Enabling Works

Looking South

The diagram illustrates the construction phasing for 'Looking South' in three stages: EXISTING, CONSTRUCTION, and PROPOSED. The EXISTING stage shows a cross-section of the transit line with 'IB' (Inbound) and 'OB' (Outbound) tracks. The CONSTRUCTION stage shows a large red hatched area indicating the construction zone, with a green arrow pointing right. The PROPOSED stage shows the final layout with various colored sections. A legend at the bottom includes icons for different transit modes: a red square with a Chinese character, a blue square with a train icon, a green square with a person walking icon, a yellow square with a person walking icon, and a purple square with a car icon. The ISL logo is in the bottom left, and the slogan 'Integrated Expertise. Locally Delivered.' with a color-coded bar is in the bottom right.

A photograph showing a construction site with workers and equipment. In the foreground, there are stacks of materials, including pipes and a white bucket. A worker in a blue jacket is visible. In the background, there are orange safety barriers, a red car, and buildings.

30

Construction Phasing - Photos

Enabling Works

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31

Construction Phasing - Photos

Enabling Works

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32

Construction Phasing - Photos

Enabling Works

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33

Construction Phasing - Photos

Enabling Works

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34

Construction Phasing - Photos

Enabling Works

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35

Construction Phasing - Photos

Enabling Works

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36

Construction Phasing - Photos

Permanent Works

Dec. 13, 2022 11:18:11 a.m.

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Construction Phasing - Photos

Permanent Works

2023/03/30

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38

Construction Phasing - Photos

Permanent Works

Looking South
IB OB

EXISTING

CONSTRUCTION

PROPOSED

IB OB

IB OB

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39

Construction Phasing - Photos

Permanent Works

Looking South
IB OB

EXISTING

CONSTRUCTION

PROPOSED

IB OB

IB OB

ISL

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40

Construction Phasing - Photos

Permanent Works

Looking South

IB OB

EXISTING

CONSTRUCTION

PROPOSED

ISL

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41

Construction Phasing - Photos

Permanent Works

Looking South

IB OB

EXISTING

CONSTRUCTION

PROPOSED

ISL

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42

Construction Phasing - Photos

Permanent Works

Looking South
IB OB

EXISTING

CONSTRUCTION

PROPOSED

IB OB

IB OB

ISL

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43

Construction Phasing - Photos

Permanent Works

Looking South
IB OB

EXISTING

CONSTRUCTION

PROPOSED

IB OB

IB OB

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44

Construction Phasing - Photos

Permanent Works

The diagram illustrates the construction phasing for permanent works, viewed from the east looking south. It is divided into three horizontal sections: EXISTING, CONSTRUCTION, and PROPOSED. The EXISTING section shows the current state with tracks and overhead power lines. The CONSTRUCTION section shows the planned construction activities, with a large green arrow indicating the direction of work. The PROPOSED section shows the final state with completed tracks and infrastructure. A legend at the bottom identifies various transportation modes: a red square with a person icon, a blue square with a train icon, a green square with a person walking icon, a yellow square with a person walking icon, and a purple square with a car icon. The ISL logo is in the bottom left, and the slogan "Integrated Expertise. Locally Delivered." is in the bottom right.

A photograph of the construction site showing tracks and infrastructure. The date 2023/09/21 is visible in the bottom right corner of the photo.

45

Construction Phasing - Photos

Permanent Works

The diagram illustrates the construction phasing for permanent works, viewed from the east looking south. It is divided into three horizontal sections: EXISTING, CONSTRUCTION, and PROPOSED. The EXISTING section shows the current state with tracks and overhead power lines. The CONSTRUCTION section shows the planned construction activities, with a large green arrow indicating the direction of work. The PROPOSED section shows the final state with completed tracks and infrastructure. A legend at the bottom identifies various transportation modes: a red square with a person icon, a blue square with a train icon, a green square with a person walking icon, a yellow square with a person walking icon, and a purple square with a car icon. The ISL logo is in the bottom left, and the slogan "Integrated Expertise. Locally Delivered." is in the bottom right.

A photograph of the construction site showing tracks and infrastructure. A yellow roller is visible in the foreground.

46

Construction Phasing - Photos

Cutover from Shoofly to Permanent

Looking South
IB OB

EXISTING
CONSTRUCTION
PROPOSED

IB OB
IB OB

IB OB

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47

Construction Phasing - Photos

Cutover from Shoofly to Permanent

Looking South
IB OB

EXISTING
CONSTRUCTION
PROPOSED

IB OB
IB OB

IB OB

Nov 26, 2023 at 6:23:49 PM
301 14 Ave SE
Calgary AB T2G 2T2
Canada

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Construction Phasing - Photos

Cutover from Shoofly to Permanent

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Construction Phasing - Photos

Cutover from Shoofly to Permanent

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Construction Phasing - Photos

Cutover from Shoofly to Permanent

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Construction Phasing - Photos

Cutover from Shoofly to Permanent

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Construction Phasing - Photos

Cutover from Shoofly to Permanent

Looking South
IB OB

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55

Construction Phasing - Photos

Cutover from Shoofly to Permanent

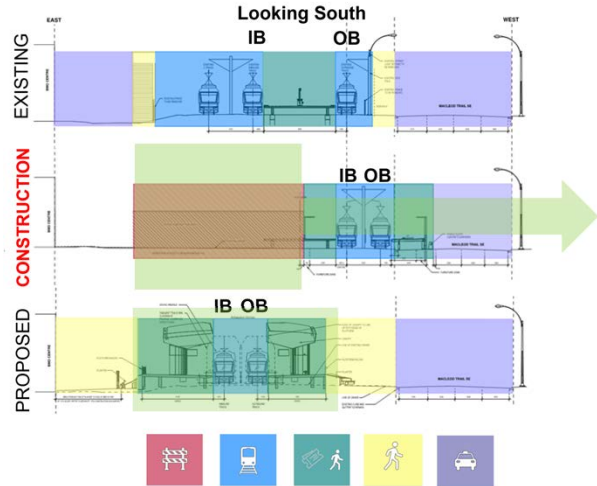
Looking South
IB OB

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Construction Phasing - Photos

Cutover from Shoofly to Permanent

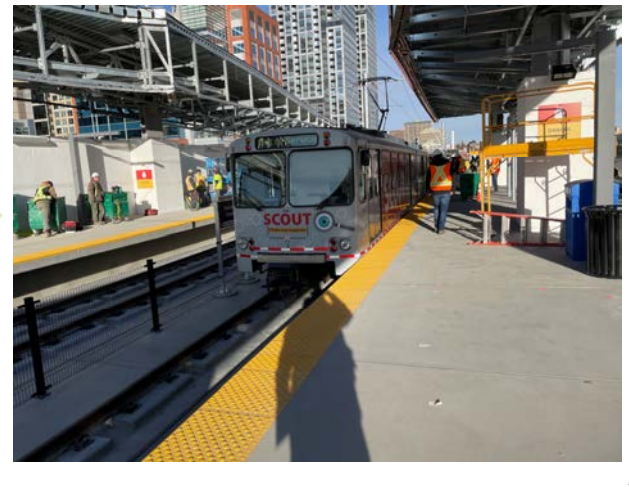
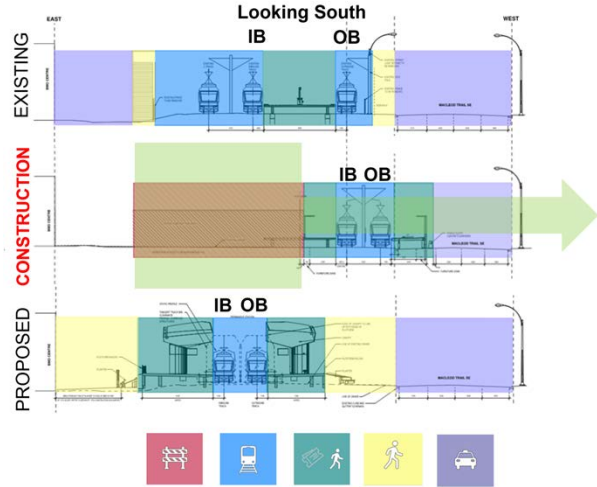


Integrated Expertise. Locally Delivered. [Colorful squares]

57

Construction Phasing - Photos

Cutover from Shoofly to Permanent



Integrated Expertise. Locally Delivered. [Colorful squares]

58

Construction Phasing - Photos

Permanent Works

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59

Construction Phasing - Photos

Permanent Works

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60

Construction Phasing - Photos

Permanent Works

Looking South

IB OB

EXISTING

CONSTRUCTION

PROPOSED

IB OB

IB OB

IB OB

2024/02/28

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61

Construction Phasing - Photos

Permanent Works

Looking South

IB OB

EXISTING

CONSTRUCTION

PROPOSED


IB OB

IB OB

IB OB


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62



Questions?

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65