

# **WESTHAM ISLAND BRIDGE**

## **Swing Span Rehabilitation**

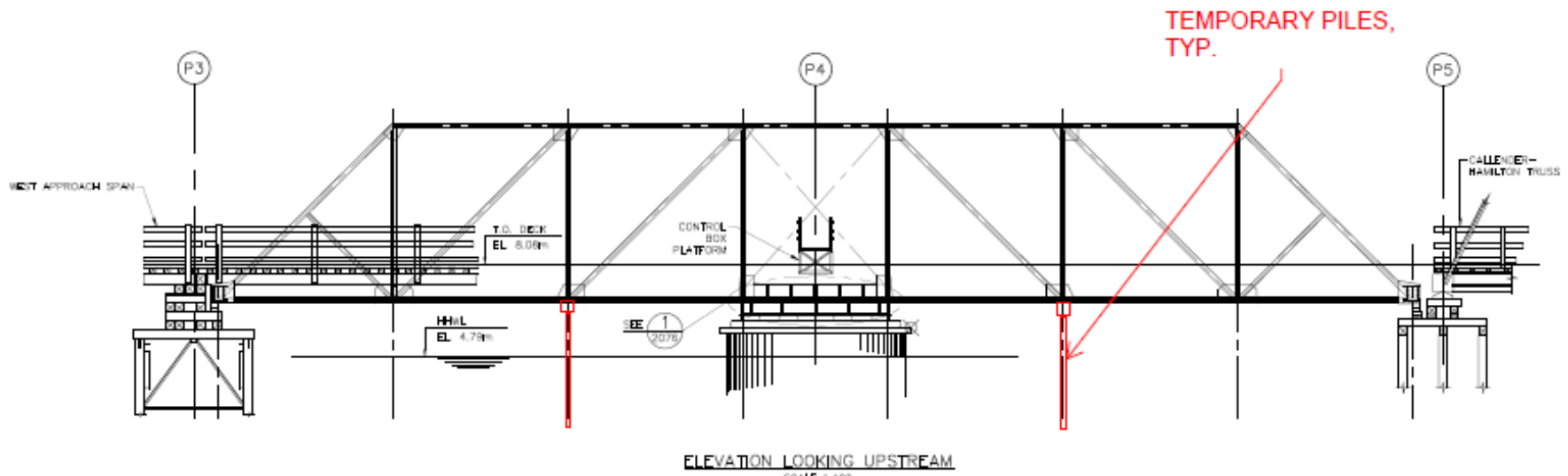
March 2023

# Agenda

1. Construction Scope Recap
2. Construction Progress Update
  - a) Completed works
  - b) Current works
  - c) Upcoming works
3. Construction Schedule Update
4. Traffic Impacts
5. Emergency Services
6. 40 Tonne Load Restriction
7. Construction Risks
8. Stakeholder Communications Update

# Construction Scope Recap

1. Installation of **four (4) temporary piles** for the construction of **temporary works** to support live traffic during construction
2. Construction of **scaffolding** as work platforms during construction
3. Replacement of **twelve (12) gusset plates**
4. Replacement of **two (2) floorbeams**
5. Replacement of **centre bearing assembly**
6. Removal of **four (4) temporary piles**



# Construction Update – Temporary Works (Completed)

1. **Installation of temporary works**
2. Construction of scaffolding as work platforms during construction
3. Replacement of gusset plates
4. Replacement of two (2) floorbeams
5. Replacement of centre bearing assembly
6. Removal of temporary piles

- Construction of temporary support system, consisting of 4 temporary piles, started on January 16 and was completed February 25, 2023.
- Work took longer than anticipated due to poor weather, equipment issues, and unexpected site conditions
- Work had to be performed with the bridge in a swung open position, which required traffic closures for extended periods (up to 4 hours)
- Alternate arrangements were made with first responders so that emergency services would not be disrupted
- Water taxi was provided to the public whenever the bridge was closed
- This work was the most impactful component of work to daytime traffic

# Construction Update – Scaffolding Work (Current)

1. Installation of temporary works
2. Construction of scaffolding as work platforms during construction
3. Replacement of gusset plates
4. Replacement of two (2) floorbeams
5. Replacement of centre bearing assembly
6. Removal of temporary piles

- Construction of scaffolding and work platforms to facilitate the upcoming construction works started on February 21 and is scheduled to finish on March 13, 2023.

## Anticipated Traffic Impacts

- All scaffolding/work platform installation work will be performed during the day with intermittent closures no longer than 15 mins

# Construction Update – Gusset Plates (Upcoming)

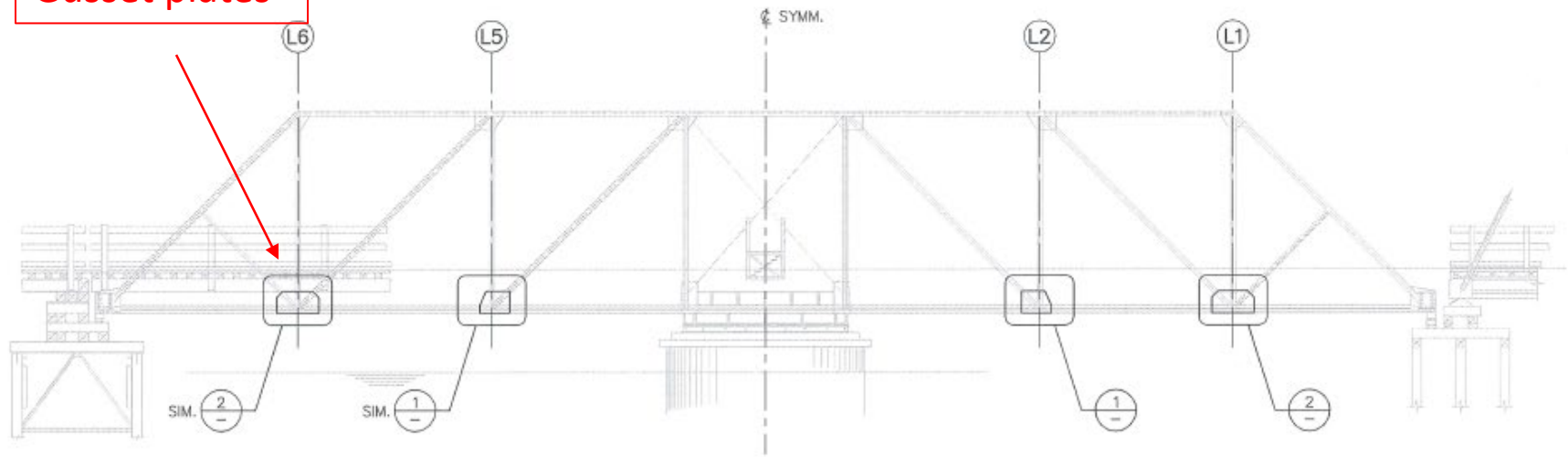
1. Installation of temporary works
2. Construction of scaffolding as work platforms during construction
3. Replacement of gusset plates
4. Replacement of two (2) floorbeams
5. Replacement of centre bearing assembly
6. Removal of temporary piles

- Once all scaffolding and work platforms have been installed, work can begin on the replacement of 12 gusset plates

## Anticipated Traffic Impacts

- Rivet removal will be performed during the day with intermittent closures no longer than 15 mins
- Replacement of each gusset plate will be performed at night with overnight closures to all traffic (7 nights required)
  - Alternate arrangement with first responders required
  - Water taxi for the public will not be required as pedestrians will be permitted to cross the bridge on foot throughout the work

## Gusset plates



SWING SPAN TRUSS KEY ELEVATION



# Construction Update – Floorbeams and Centre Bearing Assembly (Upcoming)

1. Installation of temporary works
2. Construction of scaffolding as work platforms during construction
3. Replacement of gusset plates
4. Replacement of two (2) floorbeams
5. Replacement of centre bearing assembly
6. Removal of temporary piles

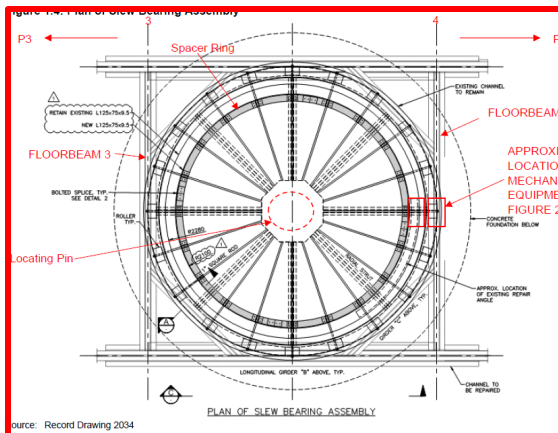
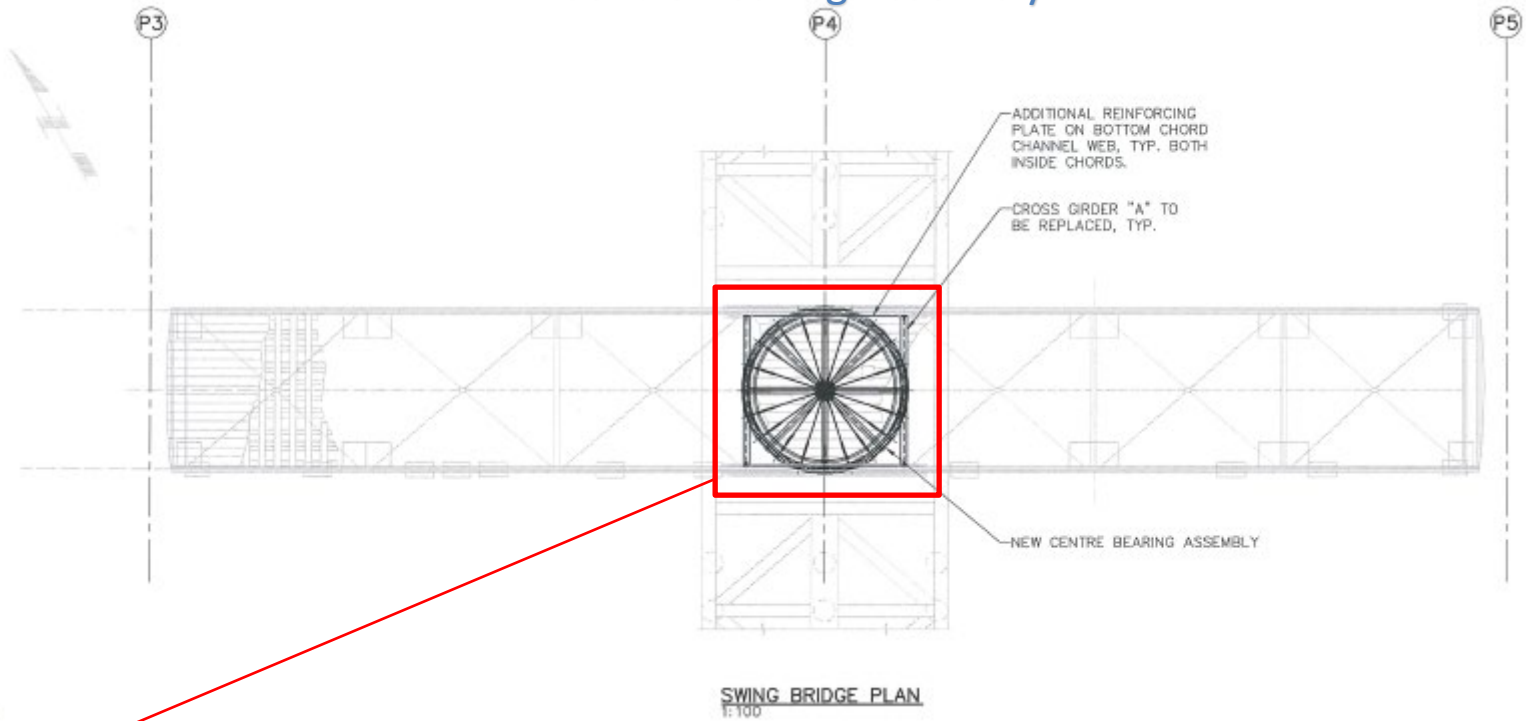
- After gusset replacement, the bridge will be lifted onto the temporary works to facilitate replacement of:
  - Two (2) floorbeams & center bearing assembly

## Anticipated Traffic Impacts

- 40 Tonne GVW weight limit will be in place once the bridge is supported on temporary works
- Majority of the work will be performed during the day with intermittent closures no longer than 15 mins
- **Overnight closures\*** required for:
  - 1 night for removal of Center Bearing Assembly
  - 1 night for installation of Center Bearing Assembly
  - \*Alternate arrangement with first responders required
  - \*Water taxi for the public will not be required as pedestrians will be permitted to cross the bridge on foot throughout the work



# Centre Bearing Assembly



Source: Record Drawing 2034



# Construction Update – Extraction of Temporary Pile (Upcoming)

1. Installation of temporary works
2. Construction of scaffolding as work platforms during construction
3. Replacement of gusset plates
4. Replacement of two (2) floorbeams
5. Replacement of centre bearing assembly
6. Removal of temporary piles

- Final component of the Project is to remove the 4 temporary piles to re-open the marine channel

## Anticipated Traffic Impacts

- 4-hour and 2-hour closures to all traffic required, including pedestrians and cyclists, for 9 days (work cannot be performed at night)
  - Alternate arrangement with first responders required
  - Water taxi will be provided to the public

# Construction Schedule Update

Pile Removal being rescheduled

		Jan			Feb				Mar				Apr				May					Jun			
	Activity Description	16	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26
1	Installation of Temporary Works																								
2	Construction of scaffolding/work platforms																								
3	Replacement of Gusset Plates																								
4	Replacement of Floorbeams																								
5	Replacement of Center Bearing Assembly																								
6	Removal of Temporary Piles																								

Weight Restrictions (40 Tonnes)

2 Overnight closure for Bearing Assembly

7 Overnight closure for Gusset Plates replacement (Mar 19-27)

Activity	Description	*Schedule
1	Installation of Temporary Works	Completed
2	Construction of scaffolding/work platforms	February 21 - March 13
3	Replacement of Gusset Plates a) Daytime work b) Overnight work	March 7 – March 16 March 19 - March 27
4	Replacement of Floorbeams	March 28 - June 21
5	Replacement of Center Bearing Assembly	March 28 – June 21
6	Removal of Temporary Piles	<del>June 22 – June 30</del> Being rescheduled to on or after November 1

# Construction Traffic Impacts

Activity	Schedule (SUBJECT TO CHANGE)	Traffic Impacts	Pedestrian/ Cyclists
1) Installation of Temporary Works	Completed	N/A	N/A
2) Construction of scaffolding/work platforms	February 21 - March 13	Intermittent daytime closures no more than 15 minutes	Permitted to cross
3) Replacement of Gusset Plates			
a) Daytime work	March 7 – March 16	Intermittent daytime closures no more than 15 minutes	Permitted to cross
b) Overnight work	March 19 - March 27	<b>*Full Closure to all traffic for 7 nights</b>	Permitted to cross
4) Replacement of Floorbeams	March 28 - June 21	40 Tonne GVW restriction  Intermittent daytime closures no more than 15 minutes	Permitted to cross
5) Replacement of Center Bearing Assembly	March 28 – June 21	40 Tonne GVW restriction  Intermittent daytime closures no more than 15 minutes  <b>*2 overnight closures required</b>	Permitted to cross
6) Removal of Temporary Piles	<del>June 22 – June 30</del> defer to November	<b>*4-hour and 2-hour closures required</b>	<b>Water taxi arrangement</b>

\*Alternate arrangement with emergency services required

# Emergency Services – Upcoming Works

## 1. Daytime Work **before** Load Restrictions

- All first responders can be accommodated across the bridge as per standard protocols

## 2. Daytime Work **after** Load Restrictions

- Delta Fire has a range of engines to provide response to the community. It was determined that all fire engines can cross except for Tower 1

Apparatus	Front Axel Weight	Rear Axel Weight	Combined Weight
Engine 1 (7072)	9,420 kg	10,600 kg	20,020 kg / 44,136 lbs
Engine 2 (7070)	8,481 kg	8,781 kg	17,262 kg / 38,056 lbs
Spare Engine (7048)	8,050 kg	9,800 kg	17,850 kg / 39,352 lbs
Spare Engine (7049)	7,820 kg	9,550 kg	17,370 kg / 38,294 lbs
Tower 1 (7090)	9,060 kg	26,740 kg	35,800 kg / 78,925 lbs
Rescue 4 (7100)	9960 kg	15,510 kg	25,470 kg / 56,151 lbs

Tower 1  
cannot be  
used during  
weight  
restrictions

## 3. Overnight Closures

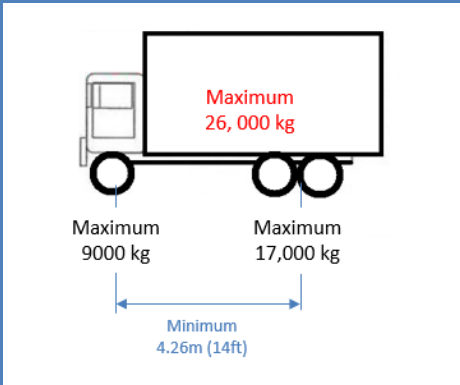
- First responders will park their vehicles on the Island and access the bridge via scaffold/work platforms constructed for pedestrian usage.

# 40 Tonne Load Restriction

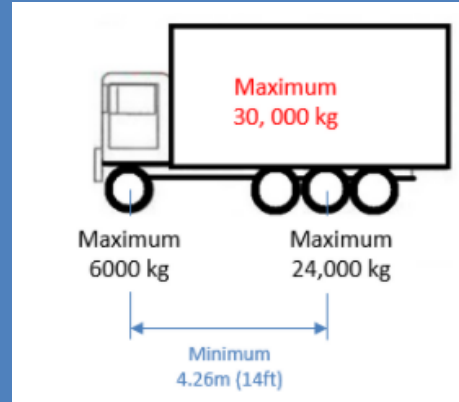
- Additional work on the temporary support system was undertaken to increase the bridge's capacity during construction to 40 metric tonnes to accommodate most farm vehicles
- Weight restriction will need to be in place as soon as the bridge is on the temporary supports, for a period of approximately 12 weeks from late March to late June 2023
- Enforcement will be provided by Transit Police to ensure compliance for safety of all bridge users and workers throughout construction
- TransLink may be able to review specialized vehicles/equipment over 40 Tonnes on a case-by-case basis and will provide:
  1. Additional information on the review process
    - Number of days to allow TransLink to perform the review
    - How to submit the request and the information required
  2. A letter from TransLink to be provided to your suppliers/distributors for their awareness of the restriction

Single  
Unit  
Trucks

- Steer axle: max. 9000kg
- Drive axle: max. 17,000kg
- GWV: max. 26,000 kg.

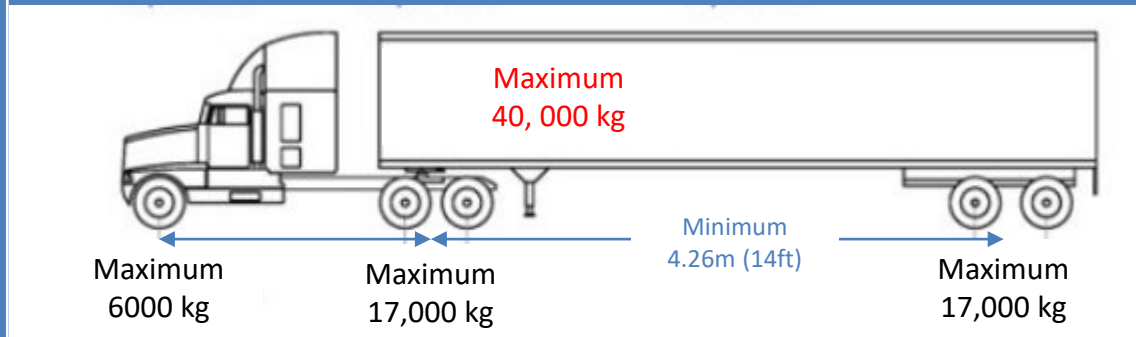


- Steer axle: max. 6000kg
- Drive axle: max. 24,000 kg
- GWV: max. 30,000 kg.



Tractor  
Trailer

- Single steer axle: max. 6,000 kg
- Tandem drive axle: max. 17,000 kg
- Tandem trailer axle: max. 17,000 kg



- In addition to gross vehicle weight (GVW), axle loading and wheel base distance is significant.
  - **\*Note – wheel base must be a minimum of 14 ft (4.26m) to spread the loading on the critical members of the bridge**

# Construction Risks – Schedule Delays

- The schedule has slipped since what was originally presented in late 2022.
- TransLink understands that DFI is concerned about construction work impacting traffic on the bridge, particularly after May 22, 2023
- Work items completing after May 2023 are as follows:
  1. Floorbeam replacement
  2. Center bearing replacement
  3. Pile removal

## Mitigation

- Except for the load limit restriction, no further daytime traffic restrictions are anticipated to disrupt operations of the bridge beyond typical conditions for items 1) and 2)
- The two closures required for center bearing removal and replacement are being scheduled for overnight
- TransLink is currently working with permitting authorities to remove piles at a later date



# Construction Risks – Unforeseen Issues

- Unforeseen issues earlier in the Project resulted in impactful closures of the bridge
- TransLink understands that the community is concerned about additional unforeseen issues resulting in the bridge not serviceable to traffic

## Mitigation

- Gusset Plate Replacement – The work is scheduled at night to reduce disruptions to traffic. Further to that, the work is also happening in March, outside of the peak farming season.
- Floorbeam Replacement – A pony wall will be installed to support the bridge when the floorbeams are being replaced. The temporary support system will be able to ensure the bridge is open to traffic (even if floorbeam cannot be reinstalled).
- Center Bearing Assembly – The bridge is on temporary supports when the bearing assembly is removed and re-installed. The temporary support system will ensure the bridge is open to traffic. The bearing assembly is not required for vehicle access.

# Stakeholder Communications Update

## **Customer Call Centre**

- TransLink will be using the services of a Customer Call Centre for all upcoming works on the Project.
- Real-time information on bridge status will be provided to the call centre
- Live operator (available 24 hours) that residents can call for updates
- Call Center number will be provided once confirmed

## **Stakeholder Email**

- TransLink will continue to provide letter and email notifications on key project updates

## **Pop-up Stakeholder Info Session**

- Share update on project progress and next steps
- Opportunity to engage with public affairs & project staff
- Thank attendees for their patience during bridge repairs

**Thank You**