



# Marine Users Working Group

Presented By: Fraser Crossing Partners and  
Transportation Investment Corporation

November 28, 2024

# Welcome

- Review of October 24 Meeting Minutes
- Navigation Log
- Project Update
- River Monitoring Update
- 4 Week Look-Ahead Schedule
- Roundtable Discussion
- Next Steps

# Review of Meeting Minutes

## October 24, 2024

# Meeting Minutes – October 24, 2024

- FCCGP provided a Project update and overview of upcoming works
  - Girder installation and bridge deck construction ongoing for the South and North Approach
- FCCGP provided an update on the River Monitoring Program
  - Comparison of the January, 2024 and September 23, 2024 bathymetry results showed minimal change resulting from scouring – small depositions noted that the Project continues to monitor and review with VFPA
- FCCGP provided an overview of cantilever construction
  - Updated provided regarding cantilever construction of SM-05 to SM-08 over the NWRB
  - Current communications protocol requires a 60-minute pre-call – request made to group to approve an extension to 90-minutes to help limit interferences to navigation (Paul Hilder indicated no significant concerns and would share with CMC membership)
- FCCGP provided a 4-week look ahead
  - SM-53 underway as of October 20 – work will continue for approximately 2-3 weeks and restrictions in the downstream draw are expected to be a total of 11 hours (further reduced by the extension of the re-call to 90-minutes)
  - SM-06 structural steel installation anticipated to begin November 6
  - SM-07 work anticipated to begin around November 22 (11 hours of downstream interference)
  - SM08 work anticipated to begin in December

# Navigation Log

## Marine Occurrences as a Result of the Project

*\*No updates to report*

# Project Update

## Works in Progress



# Project Update

## S1 Tower and Cantilever Construction



Photo 1: Pier S1, looking northwest



Photo 2: Pier S1, looking northeast



# Project Update

## South Approach Girder Installation



Photo 3: South Approach girder and deck installation



Photo 4: South Approach deck panel installation across Highway 17



# Project Update

## North Approach Girder Installation

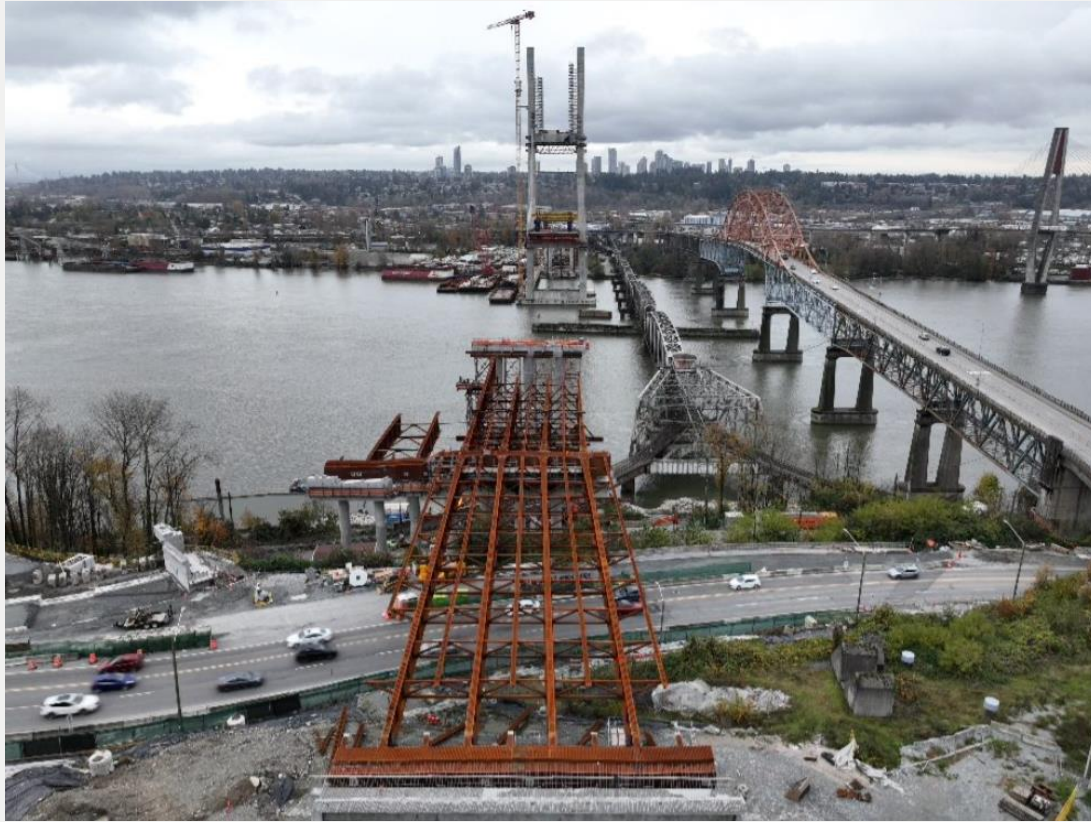


Photo 5: Ongoing girder installation for the North Approach



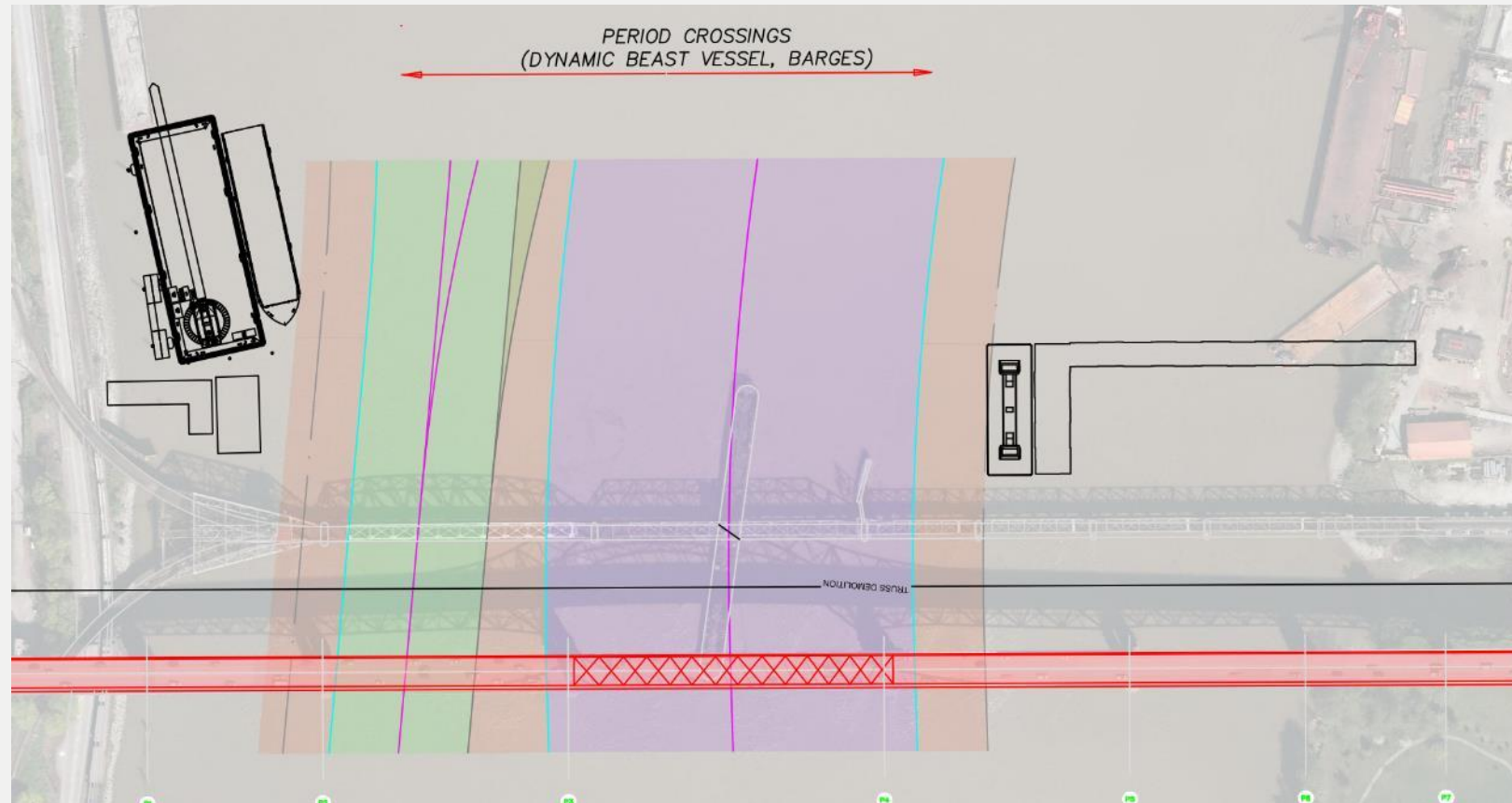
Photo 6: Ongoing girder installation for the North Approach



# Project Update

## Girder offload and installation for the North Approach and South Approach

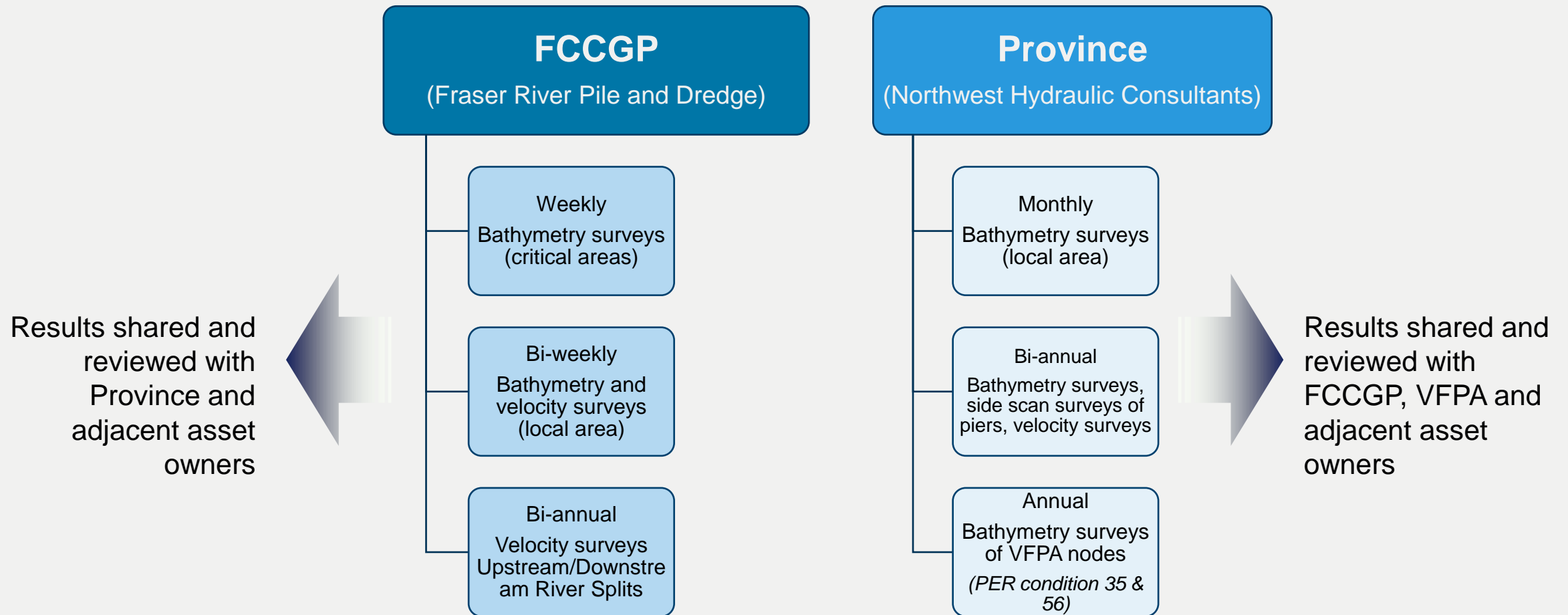
- Occasional barge crossings across the main navigation channels required



# River Monitoring Update

## **Monitoring Results and Requirement for Scour Intervention**

# River Monitoring Program – Roles





# River Hydraulics Management Plan

Plan developed to assess, monitor and mitigate potential adverse effects to the riverbed and foreshore of the Fraser River caused by the Project.

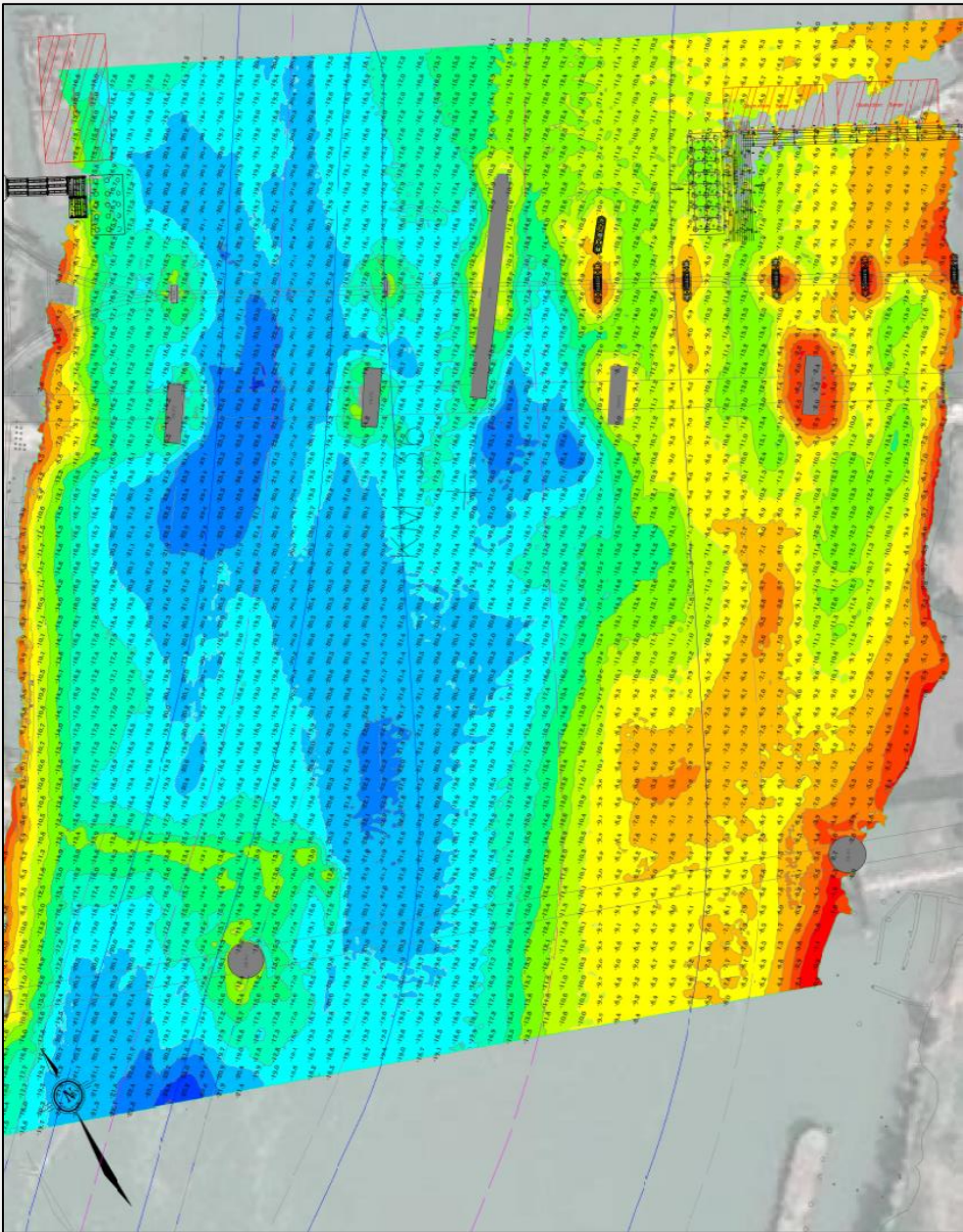
## River Monitoring Program:

- Monitoring of the Fraser River flows and overall river conditions at the Project Area over the duration of Construction and Demolition. Reporting includes:
  - Water flows and velocities
  - Riverbed elevations
  - Bank stability and erosion

## Scour & Sedimentation Intervention Program:

- Plan of action in case riverbed at the Project area behaves differently than expected during Construction and Demolition. Based on:
  - Early warning of changes to river flows over the design flood conditions;
  - Behaviour of the river bathymetry is different from the riverbed elevations described in the PBR Hydraulics Design Criteria; or
  - FCCGP becomes aware of any potential threat to the safety of the public and/or the stability of an instream structure or riverbanks.
- Once assessed and validated by technical experts, the Project team will work in collaboration with the Province to develop an immediate plan of action to mitigate the problem for construction and public safety.

# Bathymetry Monitoring Survey Results – October 22, 2024



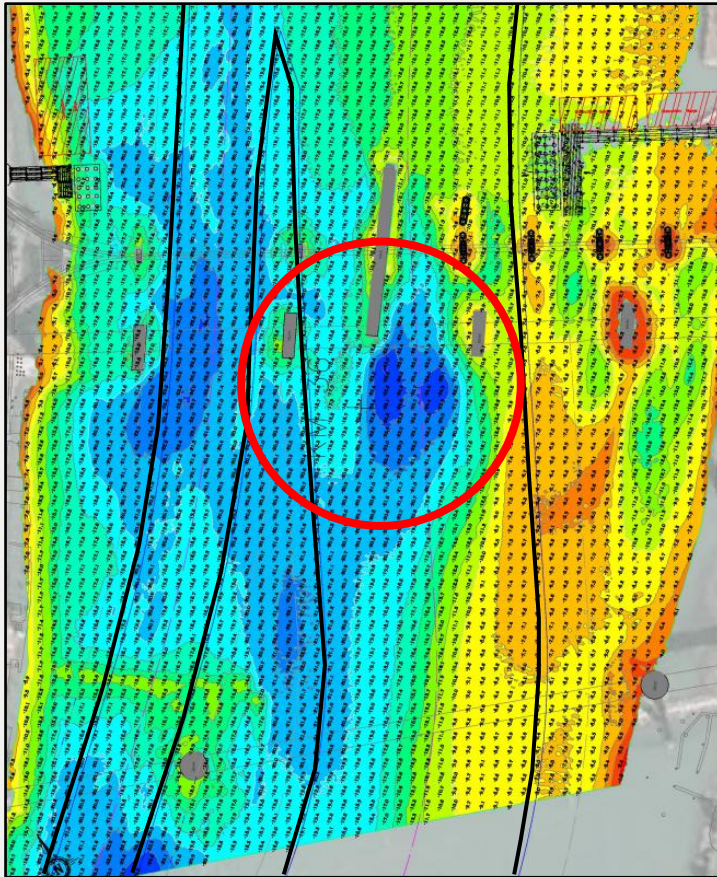
| Elevations Table |                   |                   |                |
|------------------|-------------------|-------------------|----------------|
| Number           | Maximum Elevation | Minimum Elevation | Color          |
| 14               | 0.00              | -2.00             | Red            |
| 13               | -2.00             | -4.00             | Orange         |
| 12               | -4.00             | -6.00             | Light Orange   |
| 11               | -6.00             | -8.00             | Yellow         |
| 10               | -8.00             | -10.00            | Light Yellow   |
| 9                | -10.00            | -12.00            | Light Green    |
| 8                | -12.00            | -14.00            | Green          |
| 7                | -14.00            | -16.00            | Light Green    |
| 6                | -16.00            | -18.00            | Cyan           |
| 5                | -18.00            | -20.00            | Light Blue     |
| 4                | -20.00            | -22.00            | Blue           |
| 3                | -22.00            | -24.00            | Dark Blue      |
| 2                | -24.00            | -26.00            | Very Dark Blue |
| 1                | -26.00            | -28.00            | Black          |



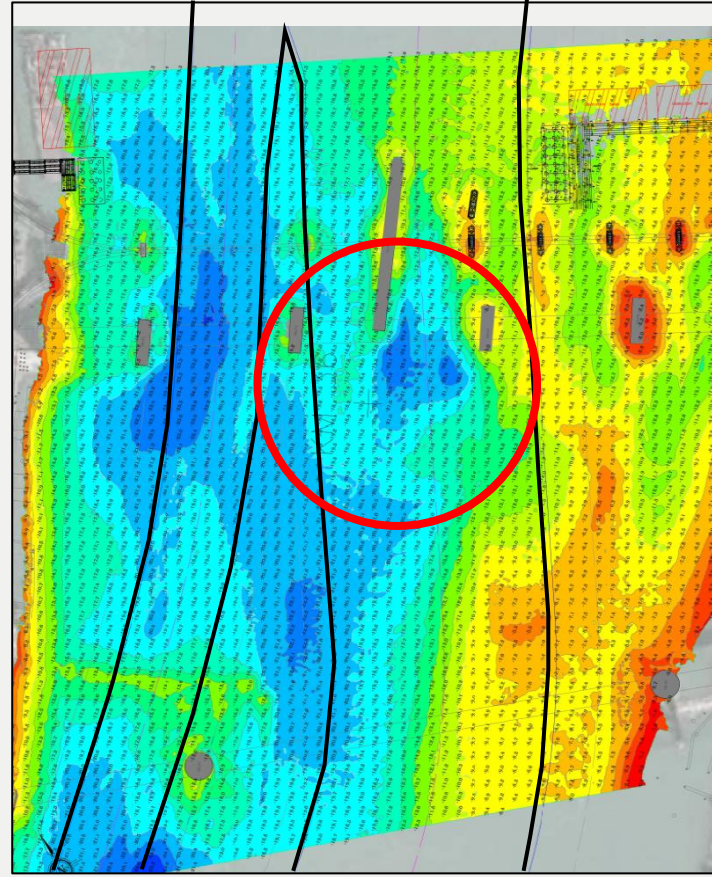
# Bathymetry Results:

## Comparison of Survey Results - Sep to Nov 2024

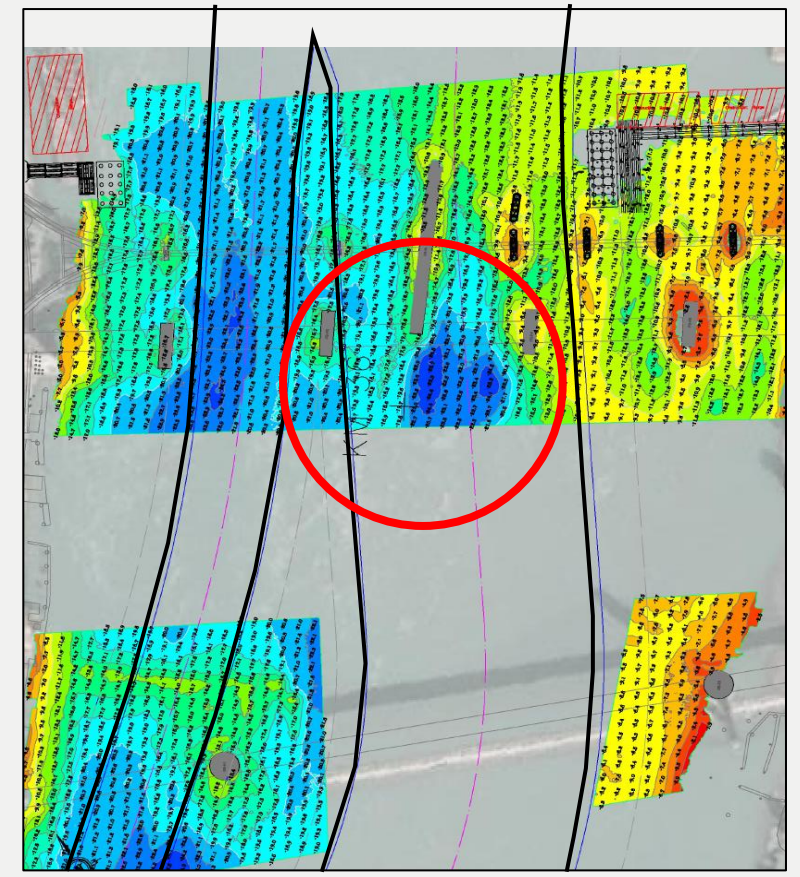
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| 6                | -16.00            | -18.00            | Very Dark Blue |
| 5                | -18.00            | -20.00            | Black          |
| 4                | -20.00            | -22.00            | Dark Grey      |
| 3                | -22.00            | -24.00            | Medium Grey    |
| 2                | -24.00            | -26.00            | Light Grey     |
| 1                | -26.00            | -28.00            | White          |



September 23/24



October 22/24

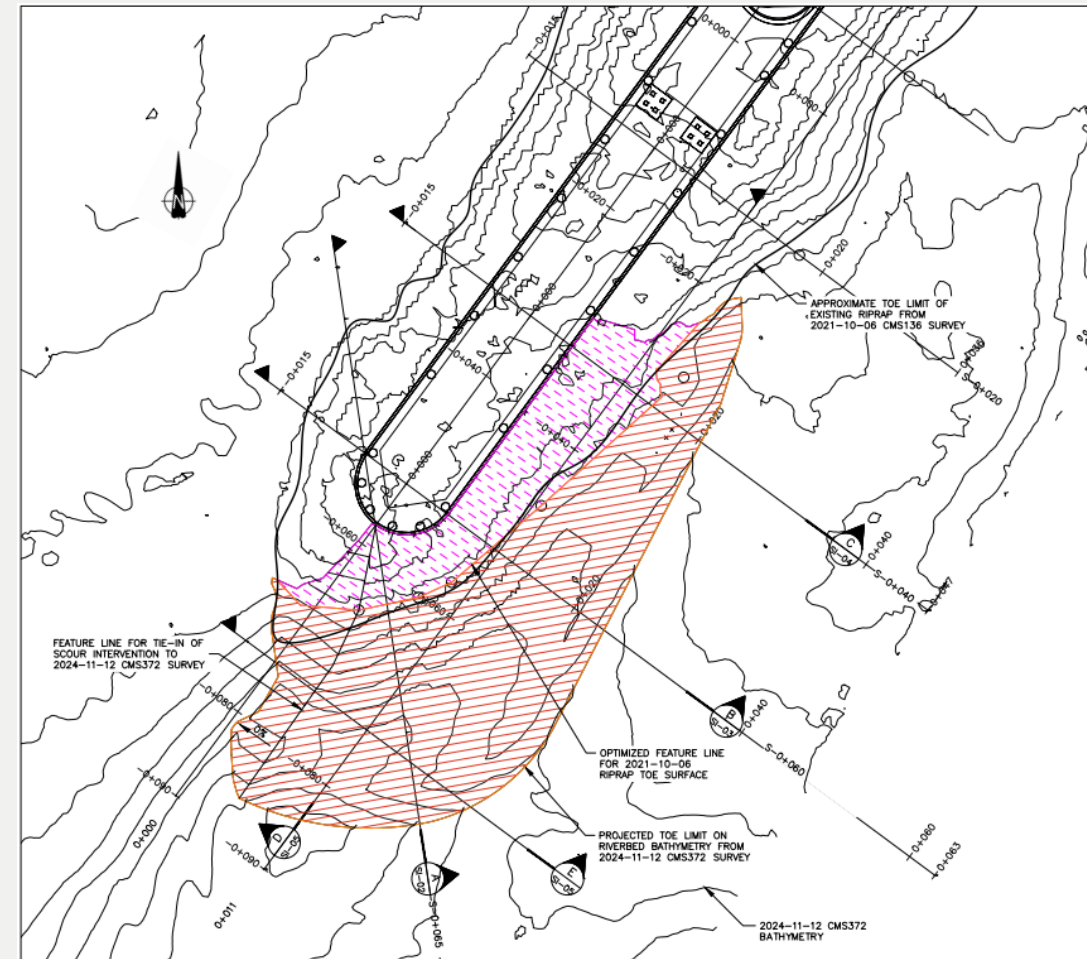
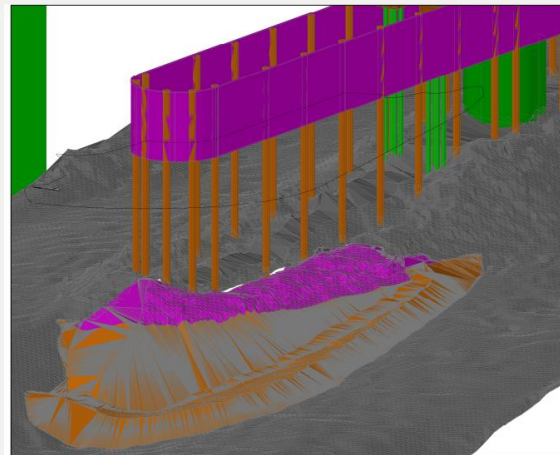


November 12/24



# Scour Intervention Required at CN Pier 5

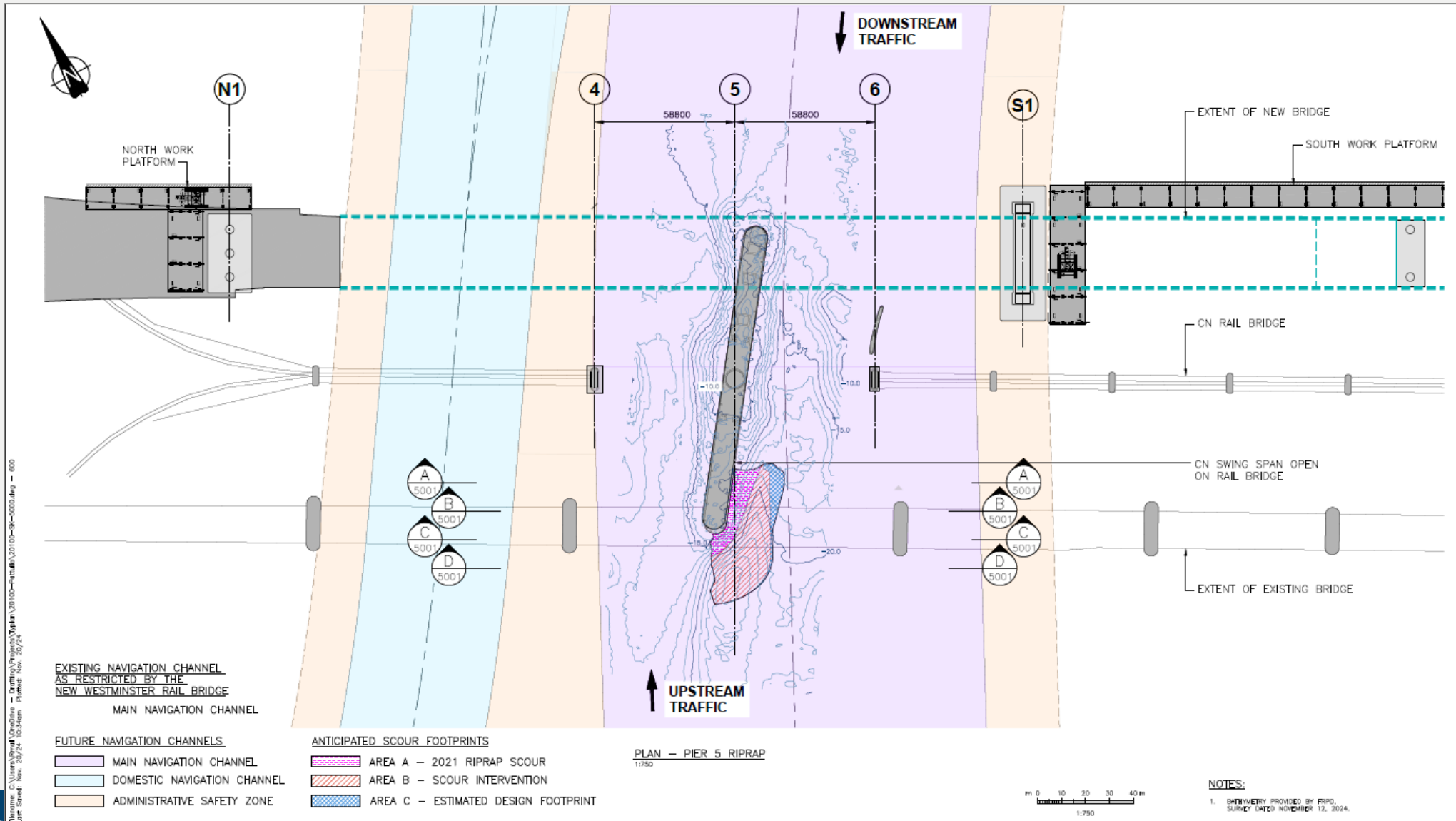
- Scouring SE of CN Pier 5, along with portion of riprap apron launching/displacement requires emergency intervention (within the 2024 least risk fish window).
- Involves placement of class 250 riprap (volume +/- 1600m<sup>3</sup>) to shore the scour slope up to previous scour protection elevation.
- Design balances protection of CN Pier 5, whilst avoiding adverse impacts on adjacent piers.





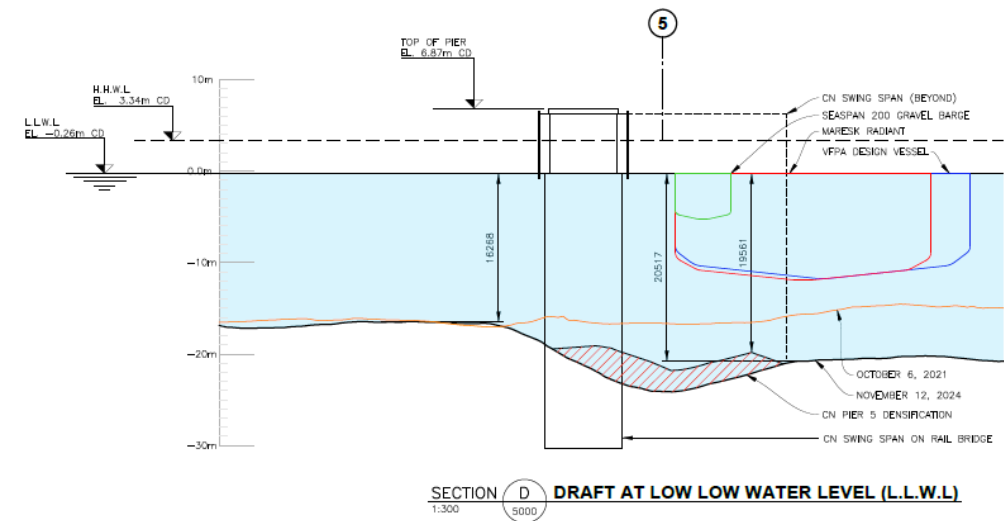
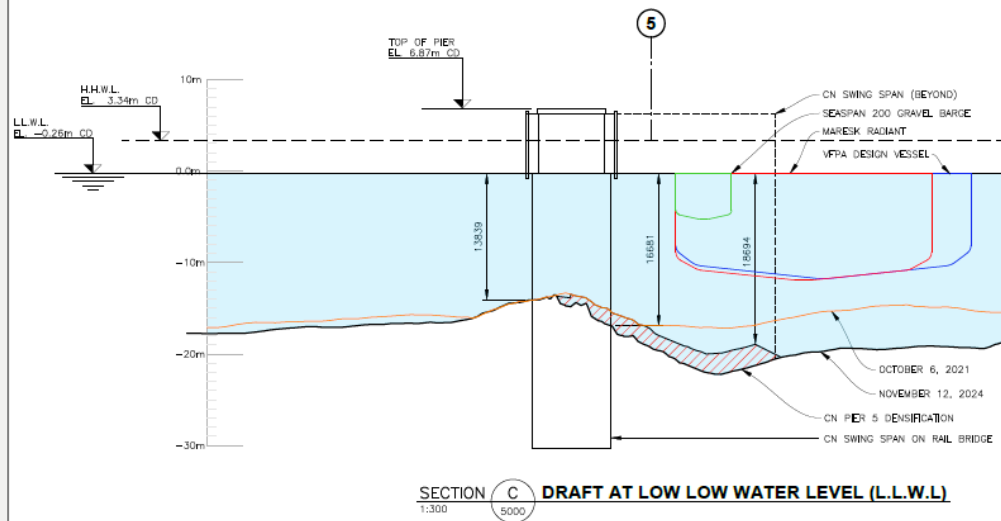
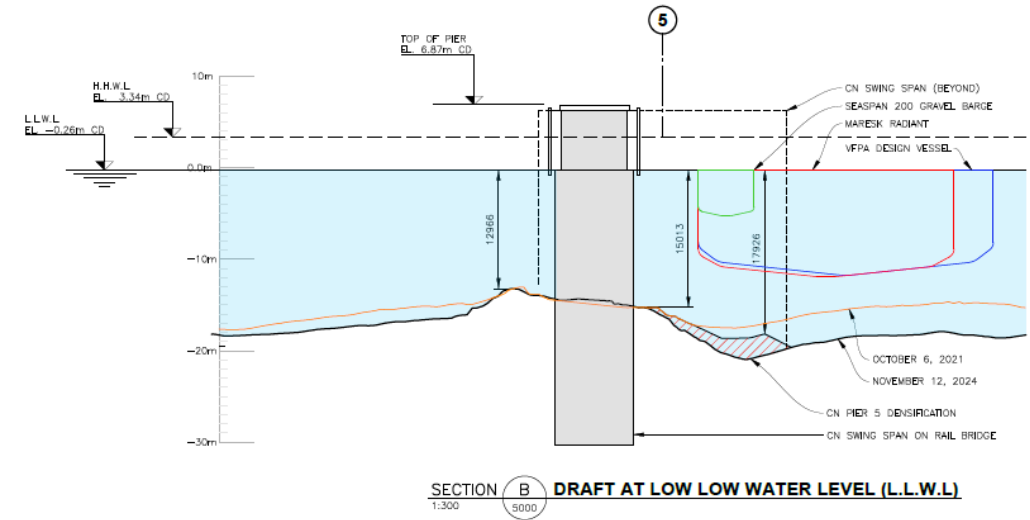
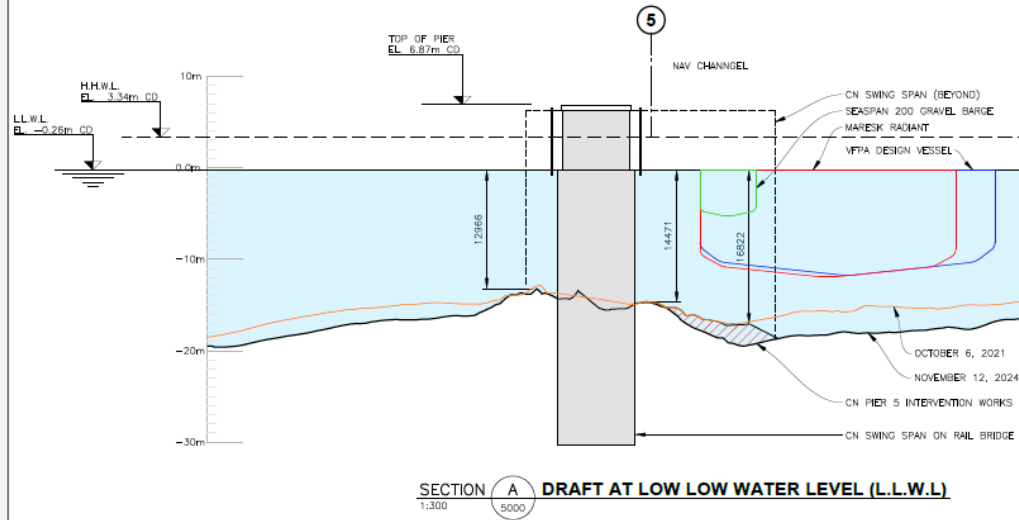
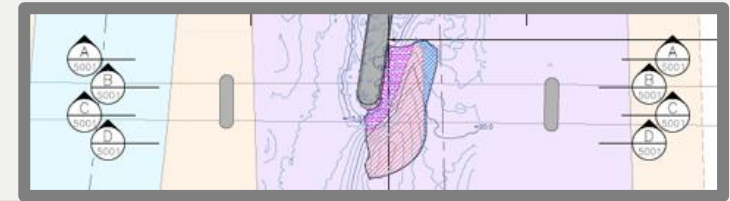
# CN Pier 5 Intervention

## Navigation Clearance



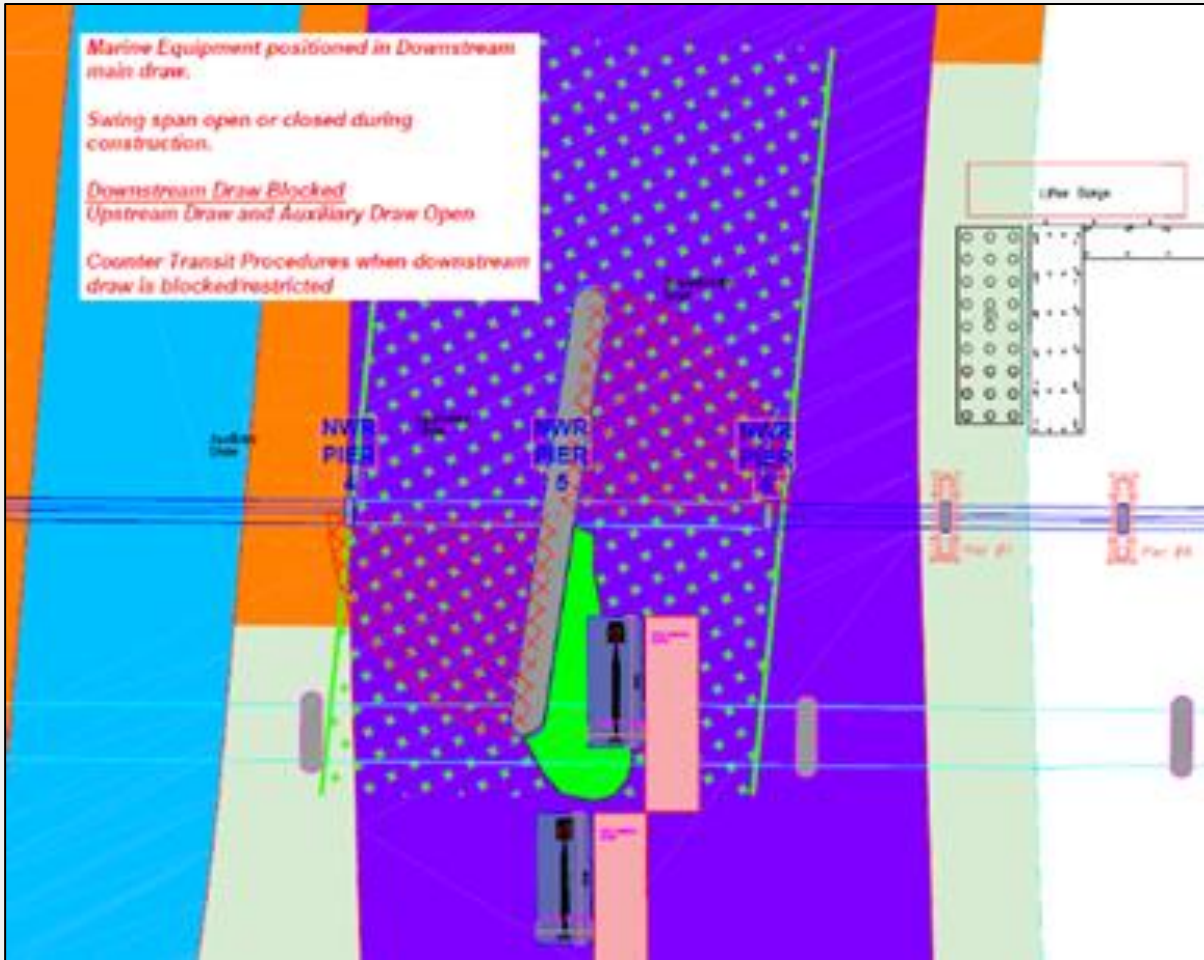
# CN Pier 5 Intervention

## Navigation Clearance



# CN Pier 5 Intervention

## Marine Staging



- Derrick and materials barge will be positioned on the south side of CN Pier 5 requiring **Downstream Draw to be closed during working hours**
  - Marine equipment to be relocated away from Downstream Draw during non-working times
  - Upstream Draw will remain open
- Counter transit procedures through the Upstream Draw will be required (see TSOP)
- Tug assist will be onsite and available for the duration of works
- Schedule:
  - Mobilization date to be confirmed ASAP via NAVWARN
  - Duration of works: 5-8 shifts
  - 7 days per week between 06:00 and 19:00
- Works have been reviewed with VFPA and CMC

# Temporary Special Operating Procedures

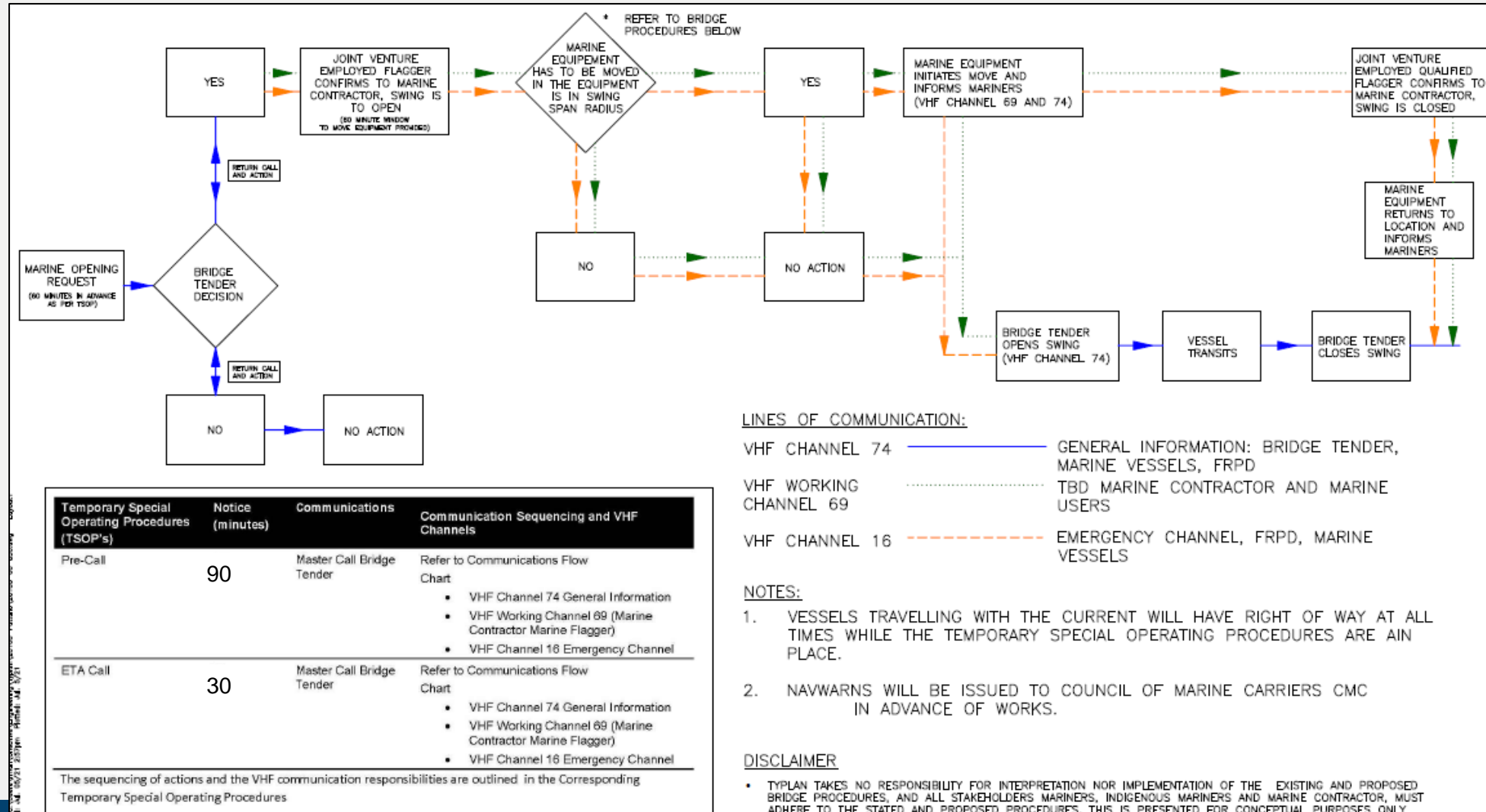
- Temporary special operating procedures (TSOP) will be used

| Temporary Special Operating Procedures (TSOP's)   | Notice (minutes) | Communications            | Communication Sequencing and VHF Channels  |
|---|------------------|---------------------------|--|
| Pre-Call  | 90               | Master Call Bridge Tender | Refer to Communications Flow Chart <ul style="list-style-type: none"><li>• VHF Channel 74 General Information</li><li>• VHF Working Channel 69 (Marine Contractor Marine Flagger)</li><li>• VHF Channel 16 Emergency Channel</li></ul> |
| ETA Call  | 30               | Master Call Bridge Tender | Refer to Communications Flow Chart <ul style="list-style-type: none"><li>• VHF Channel 74 General Information</li><li>• VHF Working Channel 69 (Marine Contractor Marine Flagger)</li><li>• VHF Channel 16 Emergency Channel</li></ul> |
| The sequencing of actions and the VHF communication responsibilities are outlined in the Corresponding Temporary Special Operating Procedures |                  |                           |  |



# Temporary Special Operating Procedures

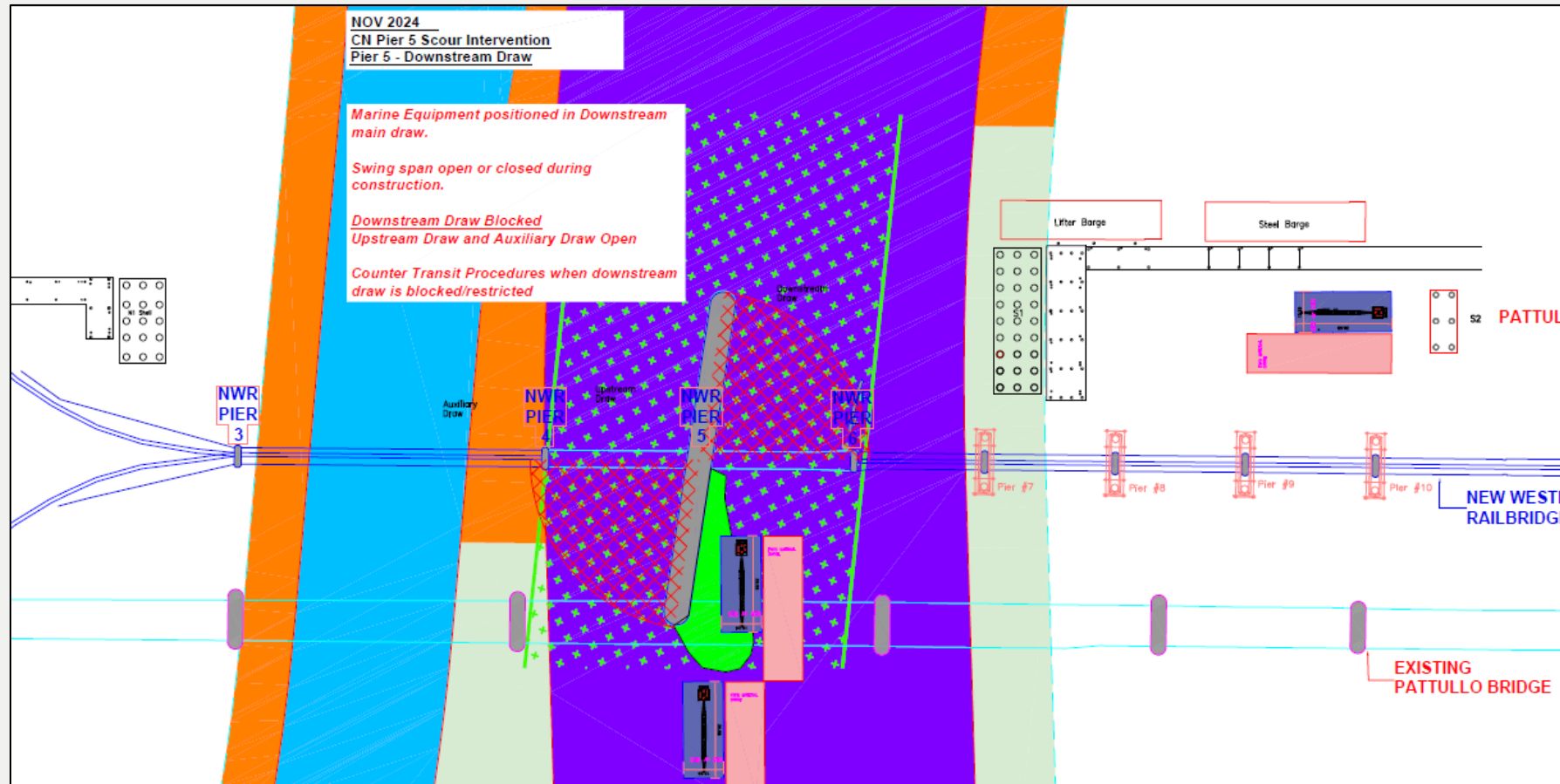
- Communication flowchart for the TSOP



# 4-Week Look-Ahead / Construction Staging

# Construction Staging – Scour Intervention Works

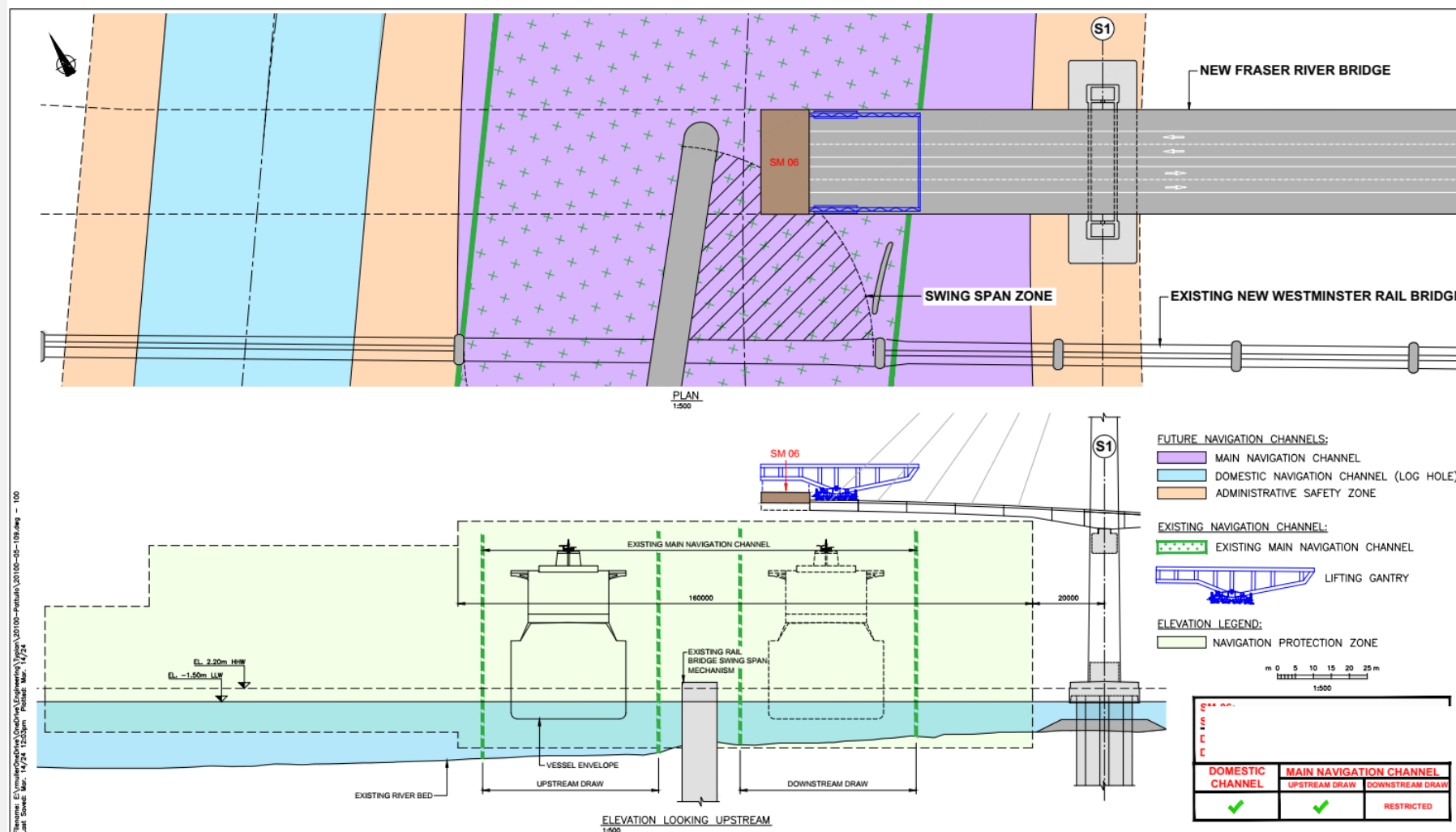
## CN NWRB Pier 5



- Mobilization date to be confirmed ASAP via NAVWARN
- 1-2 week duration
- Closures of the downstream draw (between 0600 and 1900)
- Works concurrent with Segment SM-06 bridge deck construction

# Construction Staging – Cantilever Construction

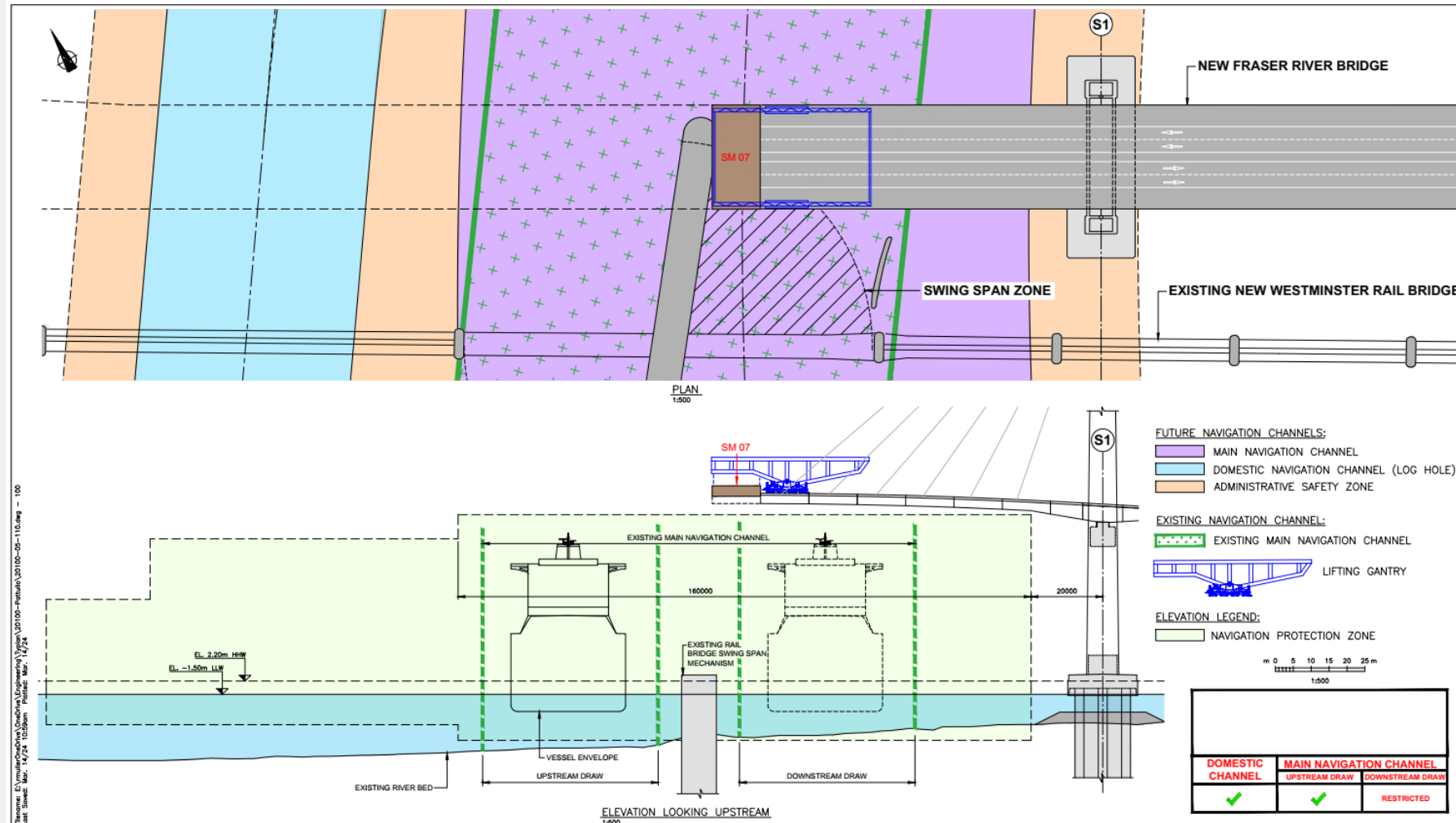
## Segment SM-06



- Started Nov 14
- 2-3 week duration
- Restrictions in the downstream draw (approx. 11 hours, cumulative)
- Works concurrent with scour intervention at CN Pier 5

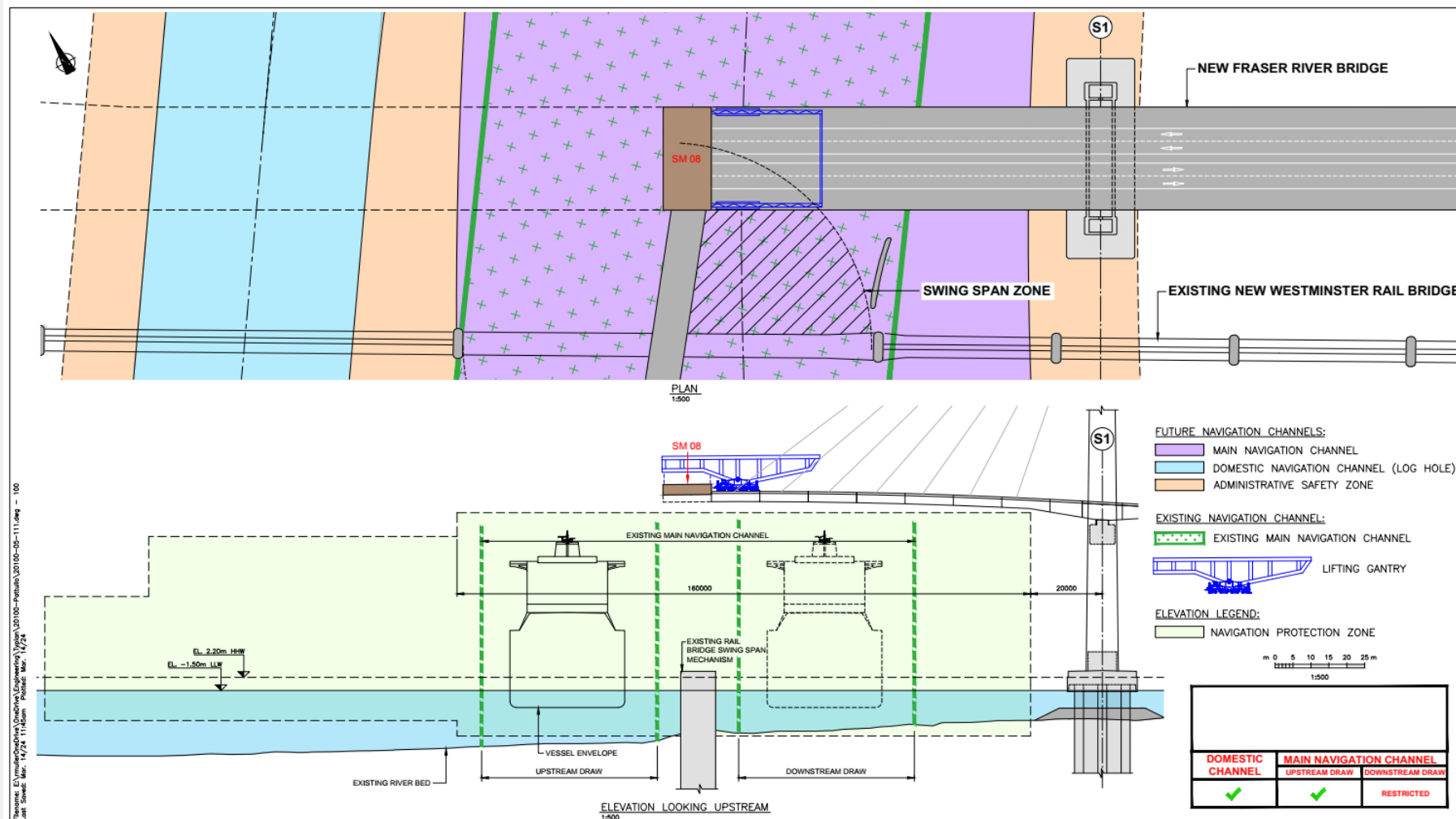


# Construction Staging – Cantilever Construction Segment SM-07



- Starting Dec 1
- 2-3 week duration
- Restrictions in the downstream draw (approx. 11 hours, cumulative)

# Construction Staging – Cantilever Construction Segment SM-08



- Starting Dec 15
- 2-3 week duration
- Restrictions in the downstream draw (approx. 11 hours, cumulative)

# Next Steps

**Ongoing NAVWARNs to be provided**

**Next Marine Users Working Group:**

- January 2025