# Non-Compliance Event 14-Day Report: Clapham Yard Moolabin Creek May 2022 Scour Event

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| **NCE Ref** | CRRDA-NCE-RIS-005 | **NCE Ref (DA)** | CRRDA-007 |
| **Reported By** | Delivery Authority | **Date of 14-day Investigation Report** | 28 October 2022 |
| **Date, Time and Location of event** | Clapham Yard Friday 06 May | | |

## Event Summary

As part of the works scope at Clapham Yard a new additional bridge structure is required to cross Moolabin Creek, which is situated on the northern side of the rail yard.

To facilitate the construction of this bridge structure a temporary works crossing of the creek plus a temporary upstream coffer dam had been installed. This Temporary Works Crossing (TWC) is required to construct the bridge (piling and superstructure installation) and access the rail corridor north of Moolabin Creek. This TWC combines piling platforms and a vehicular culvert crossing.

The TWC was designed by Suitably Qualified Personnel to meet geotechnical, flooding, stream stability and secondary approvals requirements. These temporary works meet Accepted Development Requirements (ADR), Section 5.1. With the required pre-works notification submitted to the Queensland Department of Agriculture and Fisheries (DAF) prior to works commencing.

These works are also covered by an approved a Riverine Protection Permit (RPP10000409) under the *Water Act 2000*.

The works were also designed to comply with the endorsed Unity Construction Environmental Management Plan (CEMP) (RIS-UNA-000-001-MPL-000268) and relevant sub-plans, as required under the Coordinator Generals Imposed Conditions.

The TWC construction commenced in March 2022. This TWC was designed to overtop in order to mitigate upstream afflux risks.

Whilst the TWC was still under construction, the bridge construction activities also commenced on the northern and southern banks, starting with the installation of sheet piles against the existing dual gauge bridge during an extended rail closure over Easter 2022, in preparation for piling works for the bridge structure. Piling of bridge pylons commenced in April 2022.

On the morning of Friday, the 06 May 2022, a rain event started at approximately 5.30am in the local area proximal to Clapham Yard.

By 06 May 2022 the TWC construction was 90% complete, with the piling pads and crossing heights at finished surface levels. The majority of the downstream scour protection installed.

Due to the saturated conditions of the catchment following the SEQ February 2022 flood and ensuing wet weather, water levels in Moolabin Creek started to quickly rise. Brisbane City Council issued a flood alert for potential flash flooding at the nearby Rocky Water Holes Creek at 6.55am and subsequently at 7.38am.

In accordance with the Flood Management Plan (RIS-UNA-ENV-MPL-00283), the flood response was enacted and plant (crane and piling rig) was moved to the nominated safe zone.

At approximately 7am the TWC commenced overtopping as designed.

By 7am a total of 18mm of rain had fallen, with the wet weather front dissipating at approximately 9am.

**Streambank Scour Event**

The TWC commenced overtopping at 7am as designed. However, the flows concentrated at the southern hinge point of the crossing instead of overtopping in a sheet flow like manner across the width of the crossing. This concentration of flow:

- Displaced the rock that has been placed as an interim control until such time the reno mattress scour

protection could be finalised, and

- Discharged onto the southern bank where geofabric had been placed, which destabilised the bank material.

This scour resulted in the mobilisation of bank (natural soils) and rock materials downstream of the crossing and into the waters of Moolabin Creek. It is estimated that the total volume of material released was approximately 2-3$m^3$.

Notification of the event was provided to the Environmental Monitor (EM), Department of Environment and Science (DES), Department of Transport and Main Roads (TMR) and Coordinator-General's Office.

# Investigation Summary

The Cross River Rail Delivery Authority has undertaken a detailed investigation to ascertain the root cause and contributing factors to the event. The Delivery Authority's investigation has also been informed by information provided by RIS Unity Alliance and observations provided by the EM.

On the basis of the information that has been provided, the Cross River Rail Delivery Authority is of the view that several separate causes contributed the event. These include both environmental and site-based aspects and are:

- Weather Conditions;
- Prioritization of other controls in relation to upstream flooding;
- Program Delays; and,
- Workforce changes.

Appropriate corrective actions for these potential causes have been identified and are included in a subsequent section.

The Delivery Authority **has identified a non-compliance event** with the **Imposed Condition 4 (d)**, in relation to the Event.

# Corrective Actions and Opportunities for Improvement

The following corrective actions have been implemented by Unity:

- Immediate response:
    - The crossing was shut to all heavy equipment access and equipment moved as per the Flood Management Sub-Plan (RIS-UNA-ENV-MPL-00283).
    - Once the waters receded and the rainfall stopped, the extent of the erosion was assessed and Unity Alliance mobilised plant and equipment to commence repair works the same day.
    - The erosion repair works including extra scour protection above that in place before the event were completed.
    - Upon completion of the repair works, water quality monitoring was carried out along Moolabin Creek, Upstream and Downstream of the crossing (Refer to Cross River Rail Monthly Environmental Report – May 2022).
    - Following the repair works, the crossing experienced additional overtopping events, the effects of which were closely monitored. No new or additional erosion was observed.
- Additional actions:
    - Ensured that requirements to check that works are completed in full as per temporary work designs are appropriately included in the works signoff moving forward.
    - Conducted refresher Erosion and Sediment Control training with site personnel involved in high-risk activities to ensure that they are familiar with requirements, the types of controls available, their suitability to different scenarios and the correct installation of them.

DES acknowledged that there was no serious or material environmental harm from the incident as this was prevented by the repair works undertaken.