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Memorandum

To	**Ray Carey (Powerlink), Surya Chigati (Powerlink), David Aitken (Powerlink)**	From	**Hamed Tavakolifar (Aurecon) RPEQ No. 35053**
Copy	**Agnes Hartanto (Aurecon), Brendan Schloss (Aurecon)**	Reference	**P528833-001**
Date	**2025-12-15**	Pages (including this page)	**9**
Subject	**P528833 - Rocklea Training Facility (Demountable Building & Related Development) – Stormwater Drainage Technical Memo**		

1 Introduction

This memorandum outlines the proposed stormwater drainage strategy for a new development located within the central hardstand area of Powerlink's Lines Construction, Maintenance & Innovation Training Facility (LCMITF) at Rocklea. The proposed works relate to the contractor car park and the demountable building area. The site is located at 148 Donaldson Road, Rocklea QLD 4106, within Lot 1 on RP220014, as shown in Figure 1.

The primary phase of development has previously been constructed. The primary phase were approved under an earlier Development Approval and are considered to be existing (in-situ) conditions for the purpose of this assessment.

This memorandum focuses on the additional proposed development works and outlines the associated stormwater drainage approach. It addresses key design considerations relevant to stormwater conveyance, surface flow management, and confirmation of the lawful point of discharge.

This document is intended to support the proposed design by demonstrating appropriate drainage integration with existing infrastructure and site conditions. It does not constitute a full stormwater management plan or detailed flood modelling assessment.

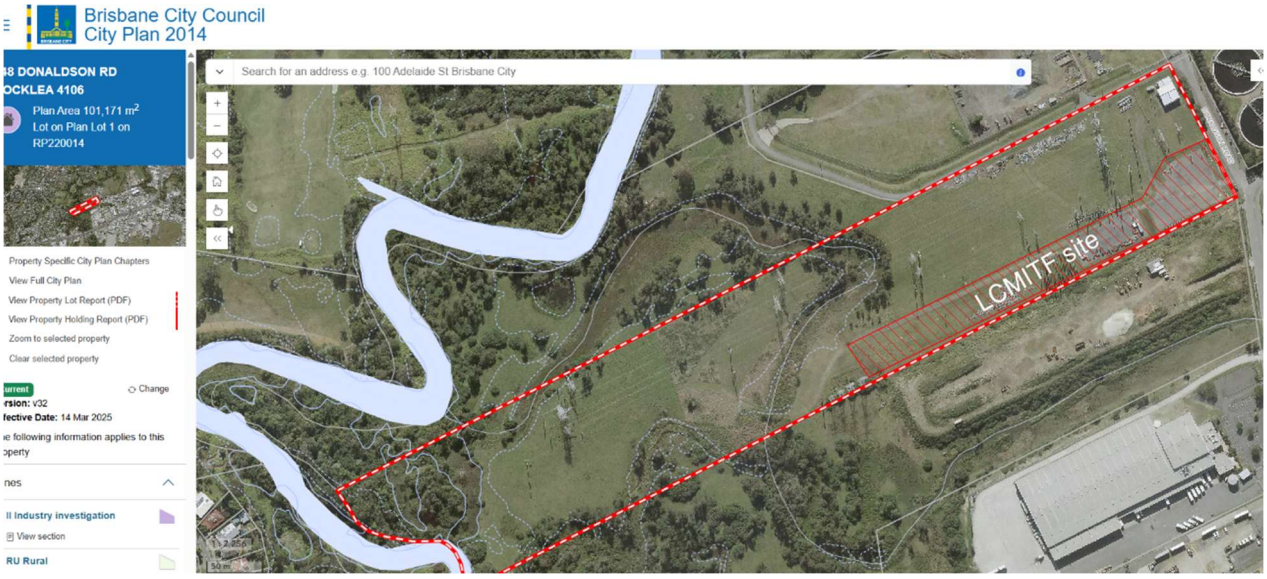

Figure 1 LCMITF project site location (Source: Brisbane City Council City Plan, 2014)

2 Pre-Development Site Description

The site is bordered by Oxley Creek to the west, Donaldson Road to the east, Lots 2 and 3 SP 293732 to the north and Lot 2 SP128763 to the south. It includes two unsealed hardstand areas and an unsealed internal track, with the remaining area covered by grass. The areas are mainly for industrial type purposes. The adjacent sites are predominantly undeveloped and subject to inundation through Oxley Creek backing up.

The subject site generally falls east to west with a localised depression running south-north across the site.

According to survey data, the overland flow is directed toward an existing swale along the southern boundary of the lot, which connects to Oxley Creek, as illustrated in Figure 2

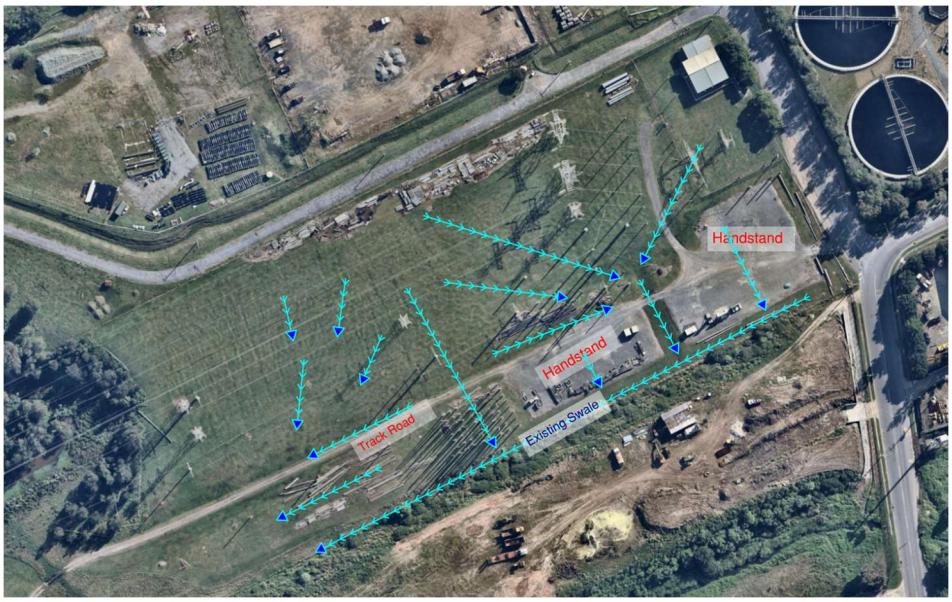

Figure 2 Existing site conditions and overland flow path within and around the site (Source: Nearmaps)

A Brisbane City Council stormwater pipe is located along Donaldson Road (Figure 3), however, no part of the existing site discharges into this infrastructure.

Figure 3 Brisbane City Council Existing Stormwater Pipe around the site area

Based on Brisbane City Council Flood Information (Figure 4), the site is situated within the Oxley Creek floodplain and has a high likelihood of flooding, with a 5% annual exceedance probability.

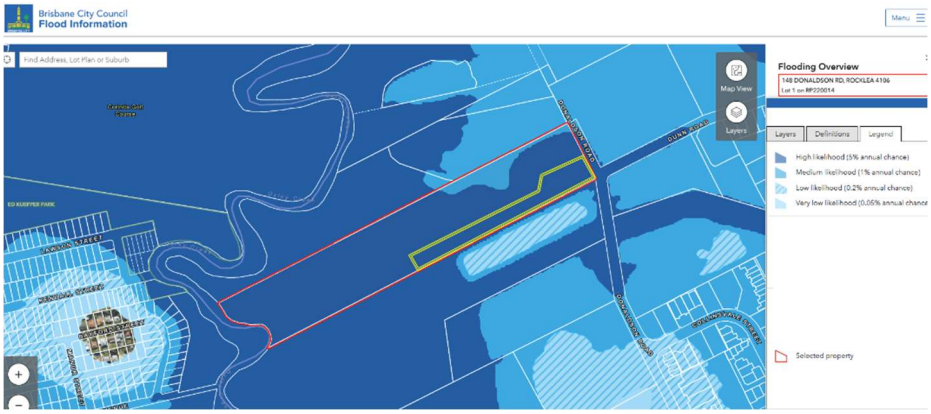

Figure 4 Site location in flood likelihood area (Source: Brisbane City Council Flood Information)

3 Description of Current Site Conditions

The initial stage of development (now representing the current site condition) included the construction of two tower pad areas, associated container storage, and the realignment of the internal track to service these elements. Pre-development unsealed hardstand areas and associated informal car park were reinstated and refurbished, incorporating new concrete culverts and a commercial crossover while maintaining pre-development groundwater and overland flow paths. This initial development phase has been completed in accordance with the approved Development Permit.

The additional development involves sealing the existing unsealed hardstand area in the central portion of the site to accommodate the demountable buildings and a new car park area , as discussed in detail in section 5. The current site conditions and the extent of the additional development area are illustrated in Figure 5.

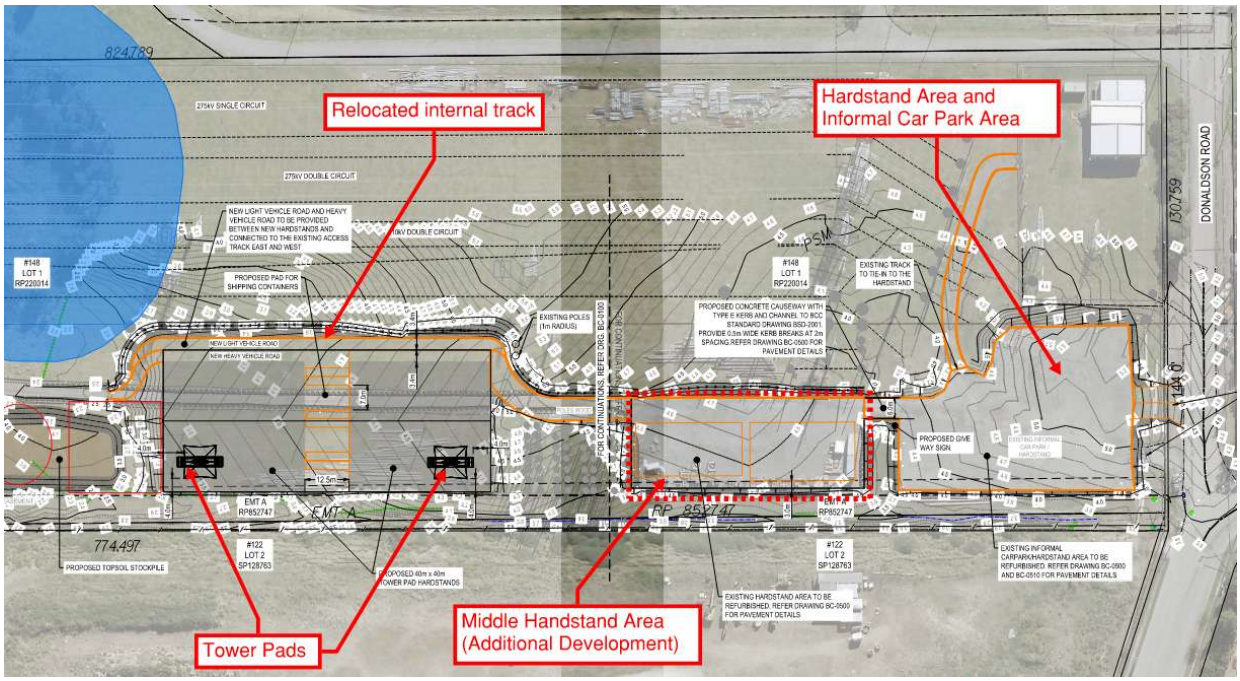

Figure 5 Current (In-situ) Site Development

The drainage strategy implemented as part of this initial phase preserved the pre-existing overland flow regime across the site. Key elements included a cut-off drain along the northern side of the internal track to direct overland flows both westward and eastward towards Oxley Creek, site grading to prevent discharge to Brisbane City Council's stormwater network along Donaldson Road, and continued use of the existing grassed swale for stormwater conveyance and passive treatment. Sediment and erosion control measures were also incorporated during construction.

Stormwater from the site continues to discharge via the existing grassed swale along the southern boundary, which ultimately conveys flows to Oxley Creek. This arrangement has been accepted as the Lawful Point of Discharge, consistent with historical site conditions and Brisbane City Council guidance for non-Council infrastructure discharges. No direct connection to Council's drainage network within the road reserve was provided. The exsiting drainage configuration for the site is as illustrated in Figure 8

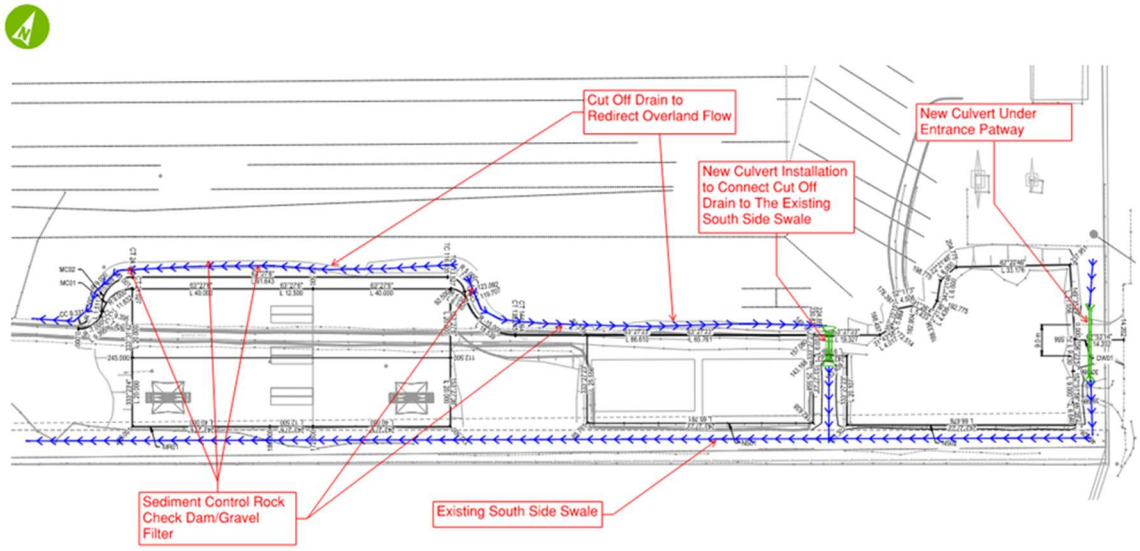

Figure 6 Current Drainage Configuration of The Site

All stormwater infrastructure associated with this development stage, including swales, cut-off drains, culverts, and erosion and sediment control measures, remains privately owned and maintained.

4 Regulatory & Design References

The project's conceptual drainage design and stormwater management plan have been developed in accordance with relevant local, state, and national legislation, planning policies, design standards, and guideline documents, including:

- Brisbane City Council Stormwater Code (June 2014)
- Queensland Urban Drainage Manual (QUDM), 2017
- Australian Rainfall and Runoff (AR&R), 2019

Per QUDM recommendations (Table 7.3.1), a 2-year Average Recurrence Interval (ARI) has been adopted as the design event for the (minor) drainage network, suitable for industrial developments. Design Intensity-Frequency-Duration (IFD) rainfall data was obtained from the Bureau of Meteorology's online Rainfall IFD Data System for the site coordinates (-27.557094S, 152.990702E). Following ARR guidelines, climate change factors have been applied to the IFD data, using a multiplier of 1.4 for long-term projections (2090) to account for anticipated increases in rainfall intensity.

The time of concentration is set at a minimum of 5 minutes, per Brisbane City Council standards for commercial catchments.

5 Additional Proposed Development

The additional proposed development comprises sealing the central hardstand area to accommodate a new car park and an adjacent demountable building area within the existing hardstand. The design maintains existing flow patterns and ensures that site hydrology is not adversely impacted. The overall layout and drainage integration are illustrated in Figure 7.

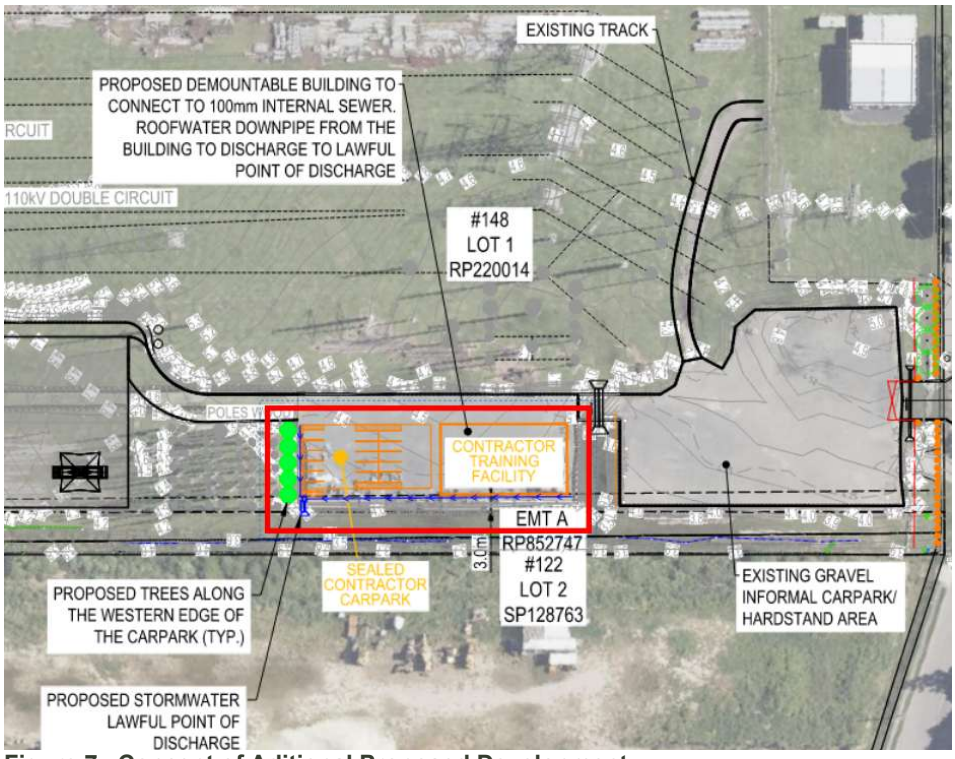

Figure 7 Concept of Aditional Proposed Development

6 Proposed Drainage Strategy

The proposed drainage strategy for the new development area within the site, as illustrated in Figure 8, comprises the following key measures:

1- **Preservation of existing drainage patterns**
Existing overland flow paths will be maintained to preserve the site's natural drainage behaviour and avoid unintended redistribution of runoff.

2- **Collection and conveyance via spoon drains**
A spoon drain will be constructed along the southern side of the development area to collect and convey runoff towards the designated outlet. Roof downpipes from the demountable buildings will be connected directly to this spoon drain. A similar spoon drain will be provided along the western side of the area, adopting the same collection and conveyance approach.

3- **Connection to the southern swale and ultimate discharge**
Collected runoff will be conveyed to the existing southern grassed swale via two spoon drain lines located along the southern and western sides of the area, together with an inlet pit and headwall. Flows will ultimately discharge into Oxley Creek.

4- **Protection of Council infrastructure**
Site grading has been designed to ensure that no runoff is directed into the existing Brisbane City Council stormwater pipe along Donaldson Road, consistent with the current drainage regime.

5- **Utilisation of existing treatment features**
The existing grassed swale and its inherent water quality treatment capacity will be retained, with no upgrades proposed. Sediment control measures, including rock check dams and gravel filters within the cut-off drains, will be incorporated in accordance with Brisbane City

Council's creek filtration systems approach to enhance water quality prior to discharge to Oxley Creek.

6- **Construction-phase erosion and sediment control**
Temporary erosion and sediment control measures will be implemented during construction, including silt fencing and stabilised outlets, to minimise environmental impacts and comply with best-practice guidelines..

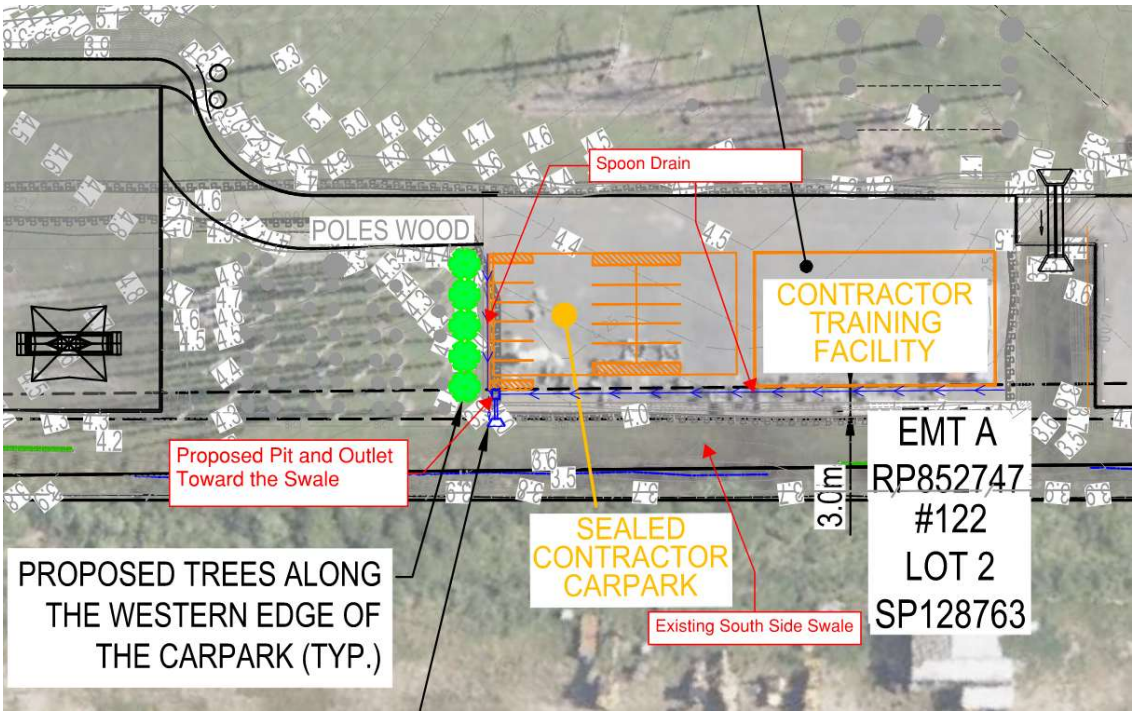

Figure 8 Proposed Drainage Plan

7 Lawful Point of Discharge

The Lawful Point of Discharge (LPOD) has been confirmed via the swale that connects to Oxley Creek. Although located on private land, the swale is contained within a drainage easement (Lot A on RP852747) in favour of Brisbane City Council and has been recognised as the LPOD in both the 1981 and 2013 development approvals. No stormwater discharge will connect directly to Council's drainage network within Donaldson Road.

The proposed arrangement is consistent with Brisbane City Council's guidelines for discharges to non-Council infrastructure. This LPOD confirmation is based on engineering judgement and existing site constraints, including the requirement to direct stormwater away from the on-site watercourse.

The facility owner is responsible for the ongoing inspection, operation, and maintenance of all private stormwater infrastructure, including swales, cut-off drains, culverts, and erosion and sediment control measures. This obligation includes routine inspection after significant rainfall events, removal of accumulated sediment and debris, repair of eroded sections, and vegetation management to preserve the hydraulic and treatment capacity of the swales. These responsibilities are critical to ensuring the long-term effectiveness, compliance, and safety of the site's stormwater management system.

8 Summary

The proposed stormwater drainage strategy for the demountable buildings and contractor car park within the LCMITF at Rocklea has been developed to comply with relevant local, state, and national requirements while addressing the site's location within the Oxley Creek floodplain. The design maintains existing overland flow patterns and directs runoff via spoon drains, pits, and headwalls to the southern swale, which conveys flows towards Oxley Creek. The inherent treatment capacity of the existing grassed swale, together with sediment forebays, provides water quality treatment prior to discharge. Construction-phase erosion and sediment control measures will be implemented to minimise environmental impacts. No stormwater discharge is proposed to connect to Brisbane City Council's stormwater pipe network, ensuring effective and compliant stormwater management for the proposed facility..

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