



CUMBERLAND
CITY COUNCIL

MEMORANDUM

To: Environment and Planning Directorate, City Strategy

From: Stormwater and Flood Management Planner

Date: 07. 08. 2023 File:

Subject: Burnett St, Merrylands Urban Design Framework

The subject site for the proposed rezoning is flood affected under A 'Becketts Creek Overland Flood Study prepared by Lyall & Associates Consulting Water Engineers June 2017. The main cause of flooding in the vicinity of the sites is primarily the result of additional overland water flow from the main drainage line situated next to the site's south-eastern drainage line and along the Merrylands Road drainage line due to the blockage of the drainage lines. These drainage line handles water from a large catchment area. According to the flood study, the subject site is subject to shallow overland flooding during a 1% Annual Exceedance Probability (AEP) storm event. Hence flood related development controls applies to any new development at the site. The location map of the site is present in the figure 1 below. The site is divided into 3 subsite 1A, 1B and 1C

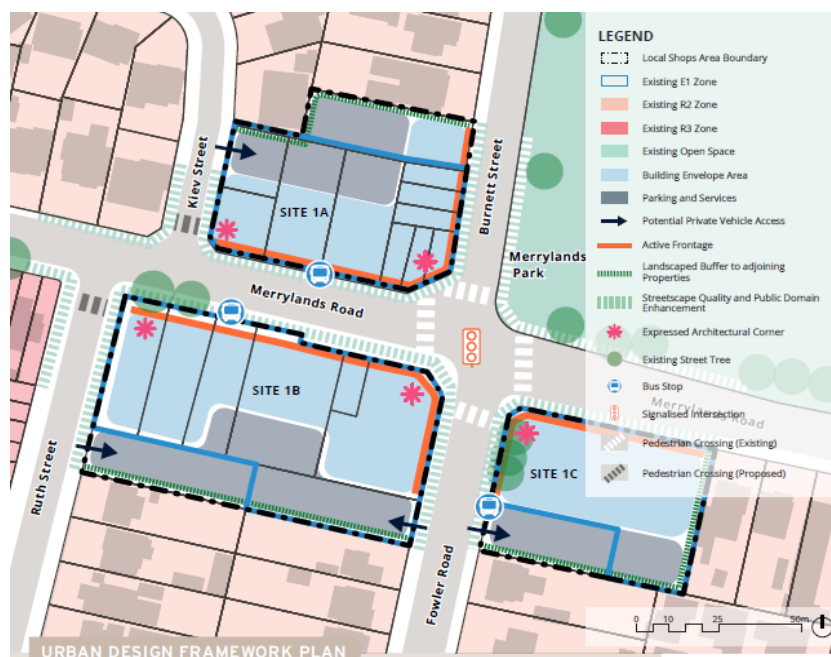


Figure 1: Site plan for the Burnett Street and Merrylands Urban Design Framework Plan

The 1% AEP flood level of the site as per the flood study is presented in the table 1 below:

Table 1: 1 % AEP flood level of the 3 sites

| Flood Event and level (mAHD) | Site 1A | Site 1B | Site 1C |
|-----------------------------------|---------|---------|---------|
| Minimum 1% AEP flood level (mAHD) | 27.00 | 26.80 | 26.80 |
| Minimum 1% AEP flood level (mAHD) | 28.00 | 28.60 | 27.20 |

The site possesses mainly low to medium risk (figure 2 and 3) and almost entirely a flood fringe (figure 4). Council's map shows that Merrylands and Fowler Road are the major overland flow path at 1% AEP (figure 5). The flood depth within the sites is generally less than 100mm (figure 6). Council available flood map shows that the high risk and high hazards at Probable Maximum Flood (PMF) events are along the Merrylands Road and Fowlers Road (figure 7).

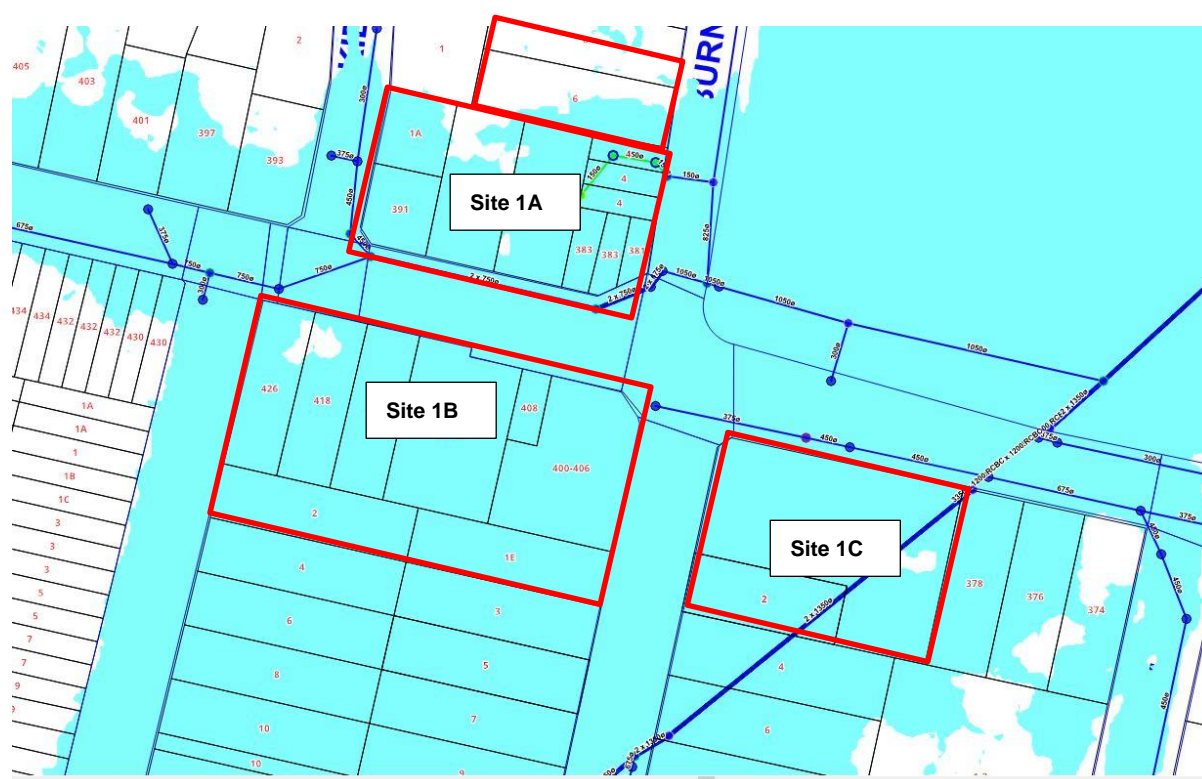


Figure 2: Risk map of the area at 1% AEP flood event (predominantly Low risk)

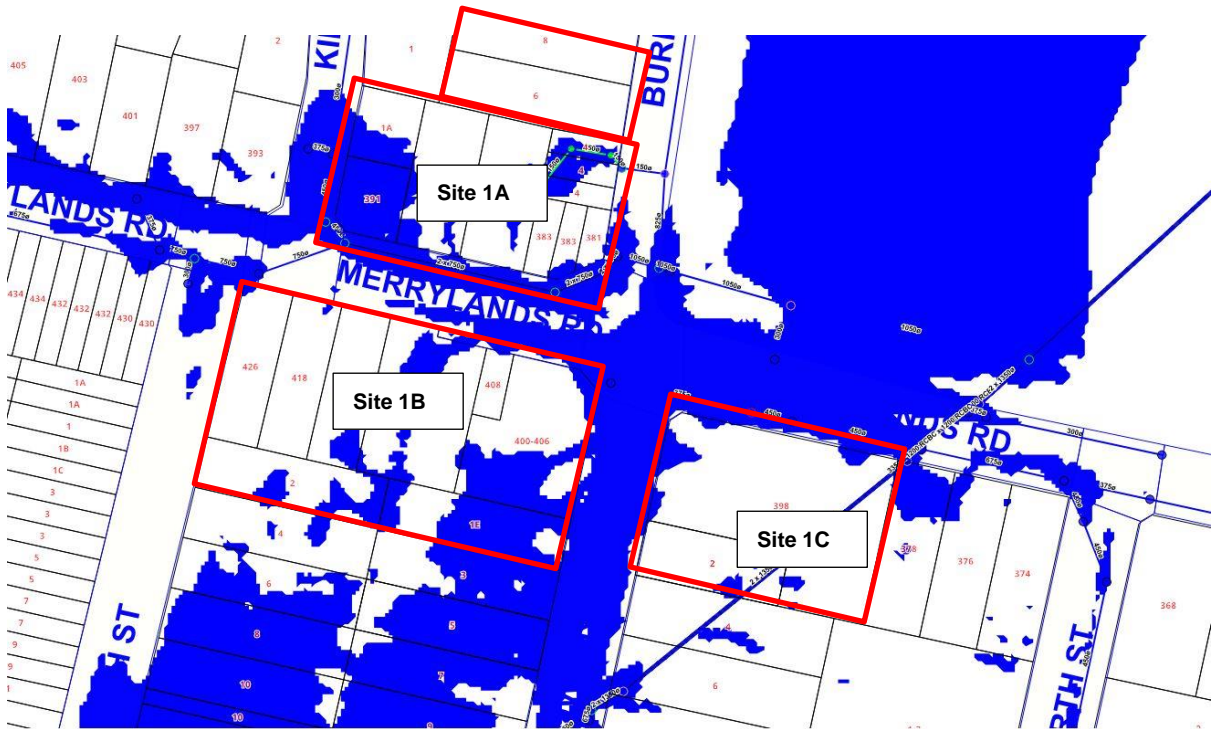


Figure 3: Risk map of the area at 1% AEP flood event (medium risk)

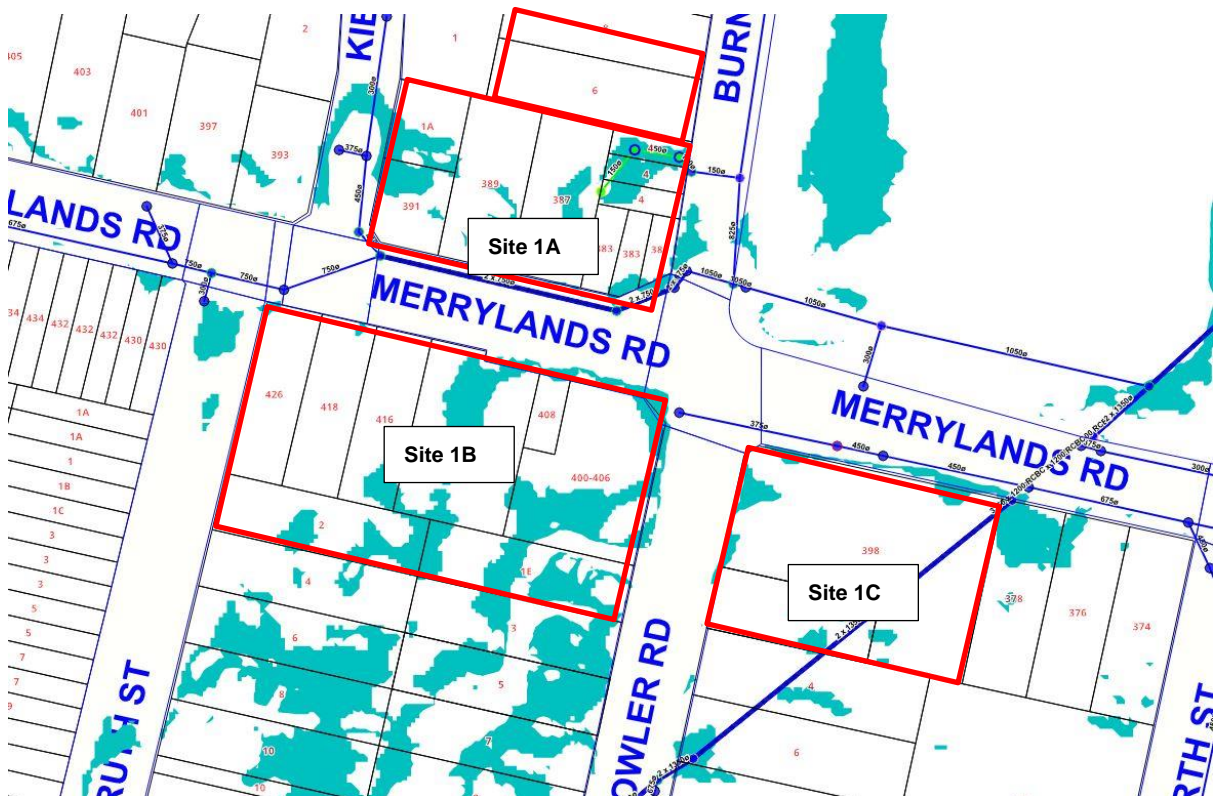


Figure 4: Hydraulic category map of the area at 1% AEP flood event (Flood fringe)

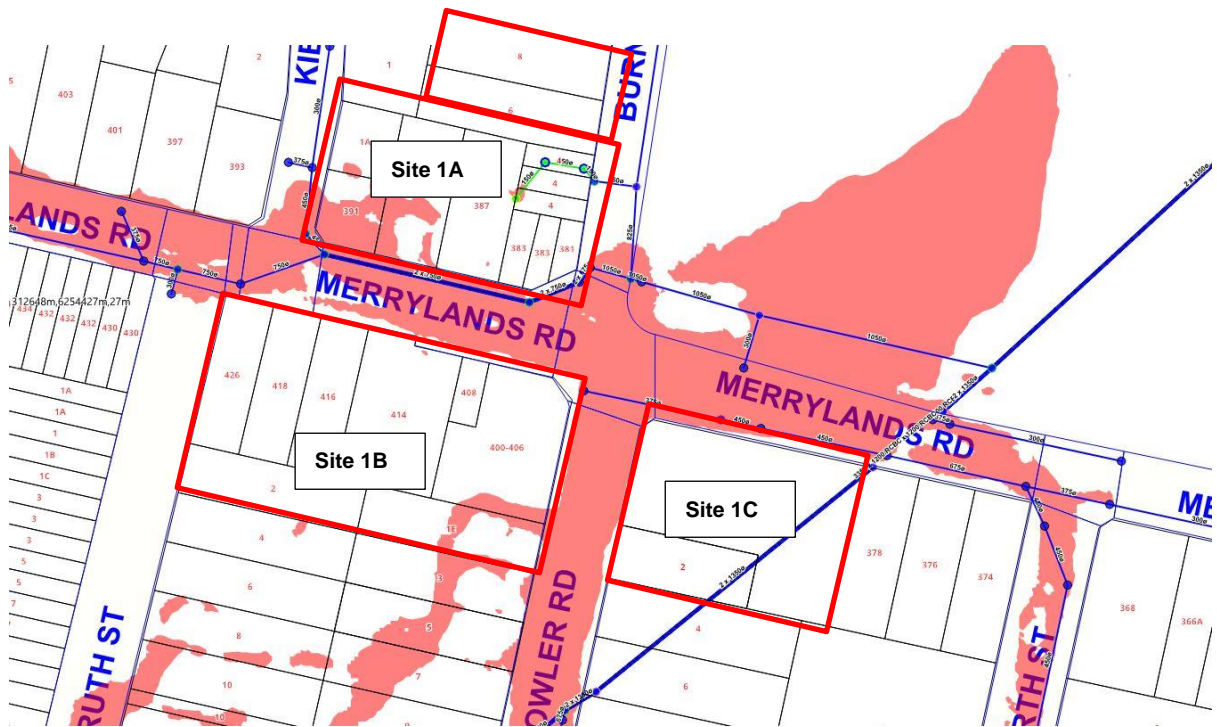


Figure 5: Overland flow path (1% AEP) along the Merrylands Road and Fowler Road

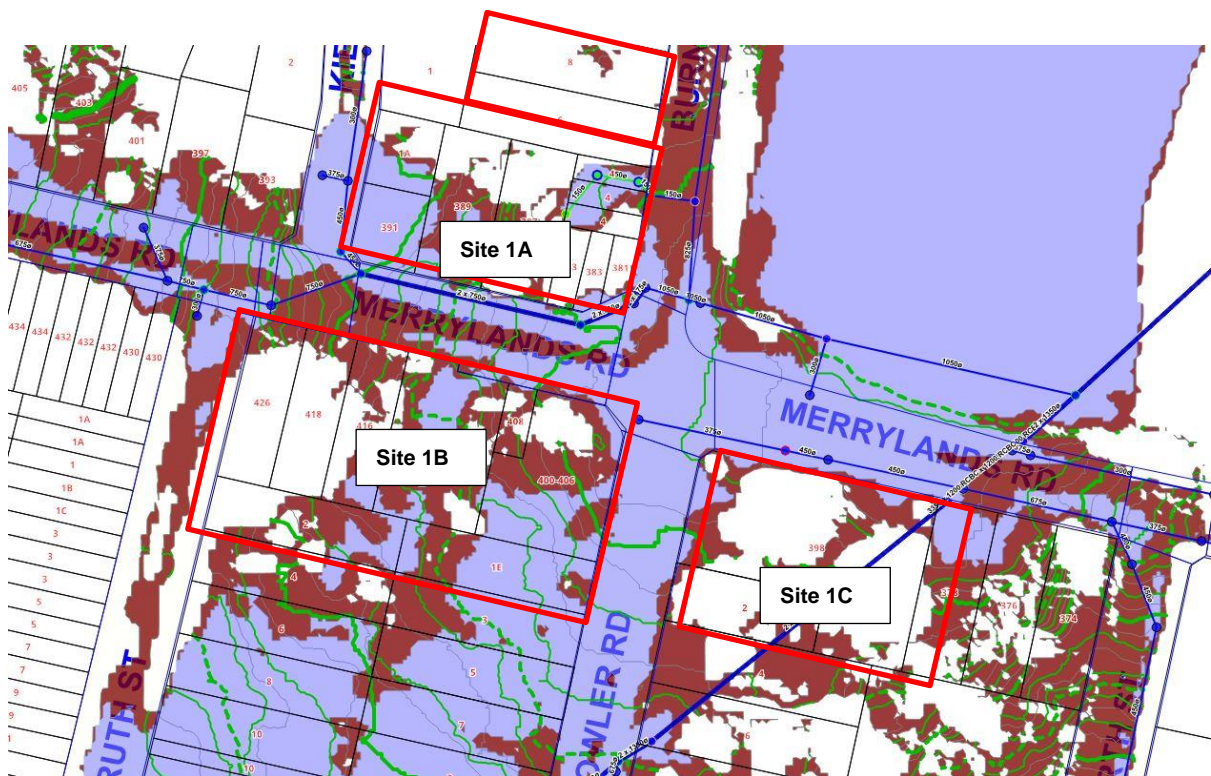


Figure 6: 1% AEP flood depth map (less than 100mm)

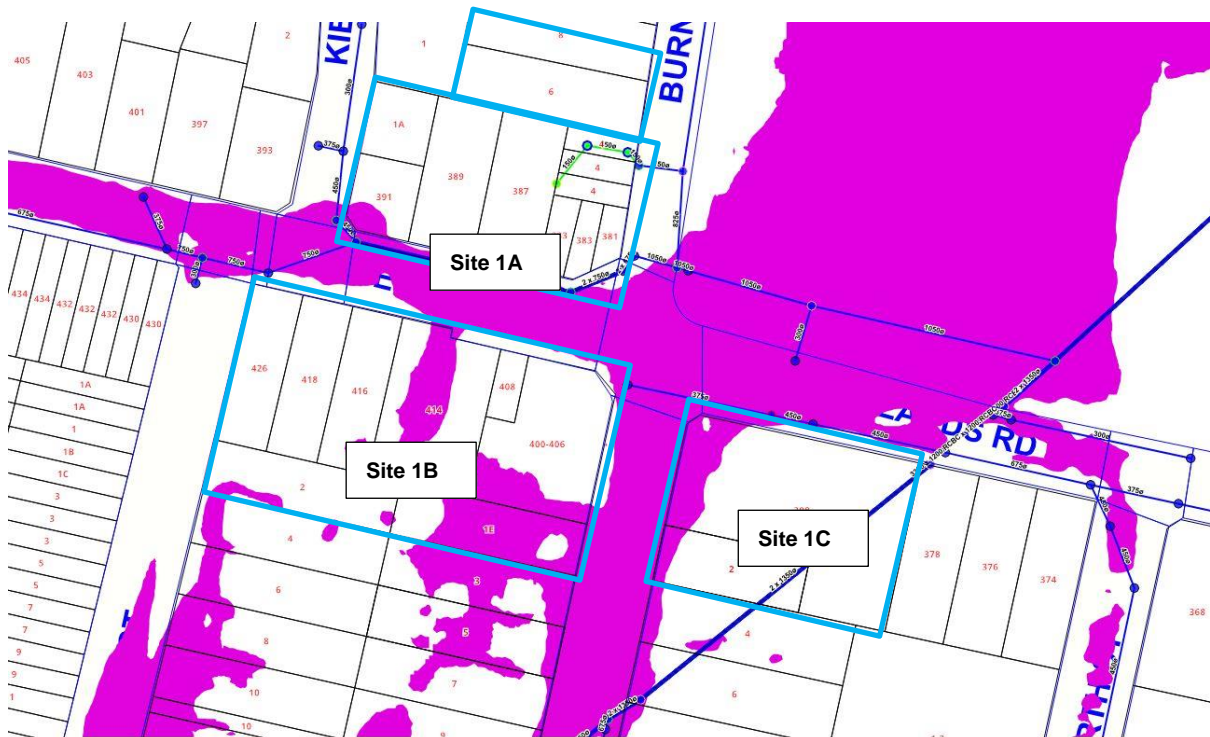


Figure 7: High Hazard (PMF) along the Merrylands Road and Fowler Road

Assessment:

The available flood study and the maps indicates that the area is affected by 1% AEP flood and predominantly a flood fringe. The flood risk and flood hazard associates with the sites are predominantly low and the flood depth across the sites are less than 100 mm.

Therefore, the rezoning proposal is considered reasonable when evaluated within the context of site-specific flood risk management. The building footprint will be like existing building footprint and only the building height will be increased. Hence, the proposed rezoning proposal is not expected to create any measurable offsite flood impact in the surrounding area.

However, the flood related development controls still apply to the new development in the subject sites where all the habitable area shall be 0.5m above the maximum 1 % AEP flood level at the upstream side of the structure. Minimum non-habitable floor levels including garages shall be 0.15m above the maximum 1 % AEP flood level at the upstream side of the structure. The crest of the entry to the basement carpark must located at 0.15m above the maximum 1 % AEP flood level at the site.

Due to the rezoning, there will be increased number of occupants and public assets within the redeveloped area, therefore an updated emergency evacuation and response plan must be prepared by a suitably qualified engineer and made available for the future occupants of the sites. The map shows that the Merrylands road and Fowler roads are the major overland flow path with high risk and high hazard.

Council has determined that a part of the subject sites is within medium to high risk and patches of the sites are flood storage area, therefore, a CDC cannot be administered on these sites.

Recommendation:

Based on the information available to the Council and considering that the zoning remains unchanged (with only an increased building height), it is expected that the regulations from the Cumberland Development Control Plan (DCP) will effectively address any potential flooding concerns.

Hence, any potential impacts as a result of the future development on these sites will be considered and addressed appropriately at Development Assessment (DA) stage as required by flood risk management control under Cumberland City Council's DCP.

It should also be noted that the proposed changes/rezoning apply to the sites that are heavily urbanised and development on established residential zones.