

9 August 2024

Hunter Scott
Attn: Andrew Stanton

RE: Canterbury Olympic Ice Rink Extension Preliminary Drainage and Flooding Assessment

Dear Andrew,

This letter describes the flooding assessment and drainage concept that has been developed for the proposed extension works included in the Canterbury Olympic Ice Rink (COIR) Redevelopment. The flooding assessment is based on the findings presented in the flood assessment report (ref: TEJ0265-REP-0001_Flood Report_D) that was previously developed by Turnbull Engineering for the neighbouring Canterbury Leisure and Aquatic Centre (CLAC) Redevelopment.

The previous flood assessment report identified that the overall site (including both the Canterbury Olympic Ice Rink and the Canterbury Leisure and Aquatic Centre) is affected by mainstream flooding from the Cooks River. Since the site has been identified as flood affected, the proposed extension works included in the Canterbury Olympic Ice Rink Redevelopment require a flooding assessment to be undertaken in accordance with the Canterbury-Bankstown Development Control Plan (DCP) 2023.

The following letter details the outcomes of the drainage and flooding assessment conducted by Turnbull Engineering to assess the impacts of the proposed development. It is noted that several design items (i.e., onsite stormwater detention, water quality management, etc.) relating to the drainage concept have not been considered for this submission and will need to be assessed during future design stages.

Flooding Assessment

Peak flood depth mapping from the Canterbury Leisure and Aquatic Centre Redevelopment flood assessment report is provided as an attachment to this letter. This mapping presents the pre and post aquatic centre development peak flood depths in the 1% AEP design event for the site, highlighting that the proposed extension works are located outside the peak flood extent in both scenarios and therefore, are not impacted by or produce impacts to the peak flood conditions in this area.

The Canterbury-Bankstown DCP 2023 Chapter 2.2 specifies that *the habitable floor levels of development are to be a minimum 500mm above the 100-year flood level*. The TUFLOW model developed for the Canterbury Leisure and Aquatic Centre Redevelopment flood assessment shows that peak flood levels of up to 4.2mAHD are present at the site (containing both the COIR and CLAC) in the 1% AEP flood event. The proposed building floor level for the COIR Redevelopment is 4.7mAHD, which is 500m above the peak flood level in the 1% AEP event, ensuring compliance with the Canterbury-Bankstown 2023 DCP requirements.

Drainage Assessment

The following section describes the pre-development drainage conditions identified at the site and the preliminary stormwater drainage concept that has been developed for the proposed extension works.

Pre-Development Drainage Conditions

In the pre-development scenario, the existing drainage channel along the western edge of the Olympic Ice Rink building conveys flows collected from approximately half of the building roof area along with some additional overland flow that drains from the surrounding park/open grassed area. This water is then drained towards the easement located at the northern side of the building where the channel connects to the existing stormwater drainage network and subsequently outlets to the Cooks River.

The remaining catchment area of this park is drained by the existing inlet pit located at the south-western corner of the building, which conveys flows to the south of the building and subsequently outlets to the Cooks River.

Preliminary Drainage Concept

The Hydraulic Services design (ref: SYD2599 - 20240708 Hydraulic Services_ (004) developed for the proposed redevelopment has been reviewed and several minor comments/adjustments have been added to ensure that surface drainage requirements are appropriately considered in the design.

This preliminary drainage concept identifies the proposed alignment of a new stormwater drainage pipe connecting to the existing stormwater drainage system at the north-western corner of the extension. It also includes a grated inlet pit at the proposed siphonic downpipe connection to drain the depressed concrete entrance in this location. The concept also identifies that the existing grated inlet pit located at the south-western corner of the building is to be retained to drain the surrounding area.

Yours sincerely,



Mitchell Gapper, BE (Civil Hons)
Civil Engineer

Level 27, 400 George Street, Sydney 2000

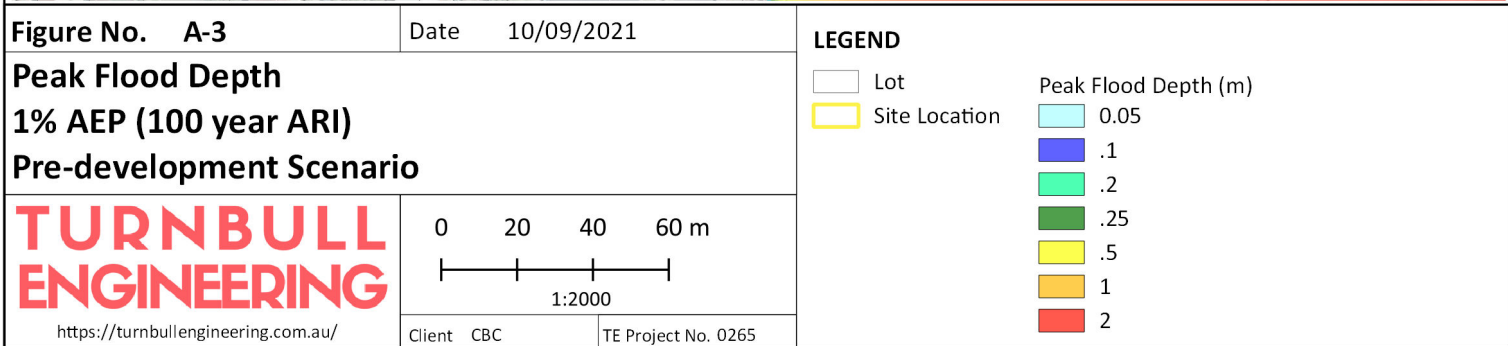
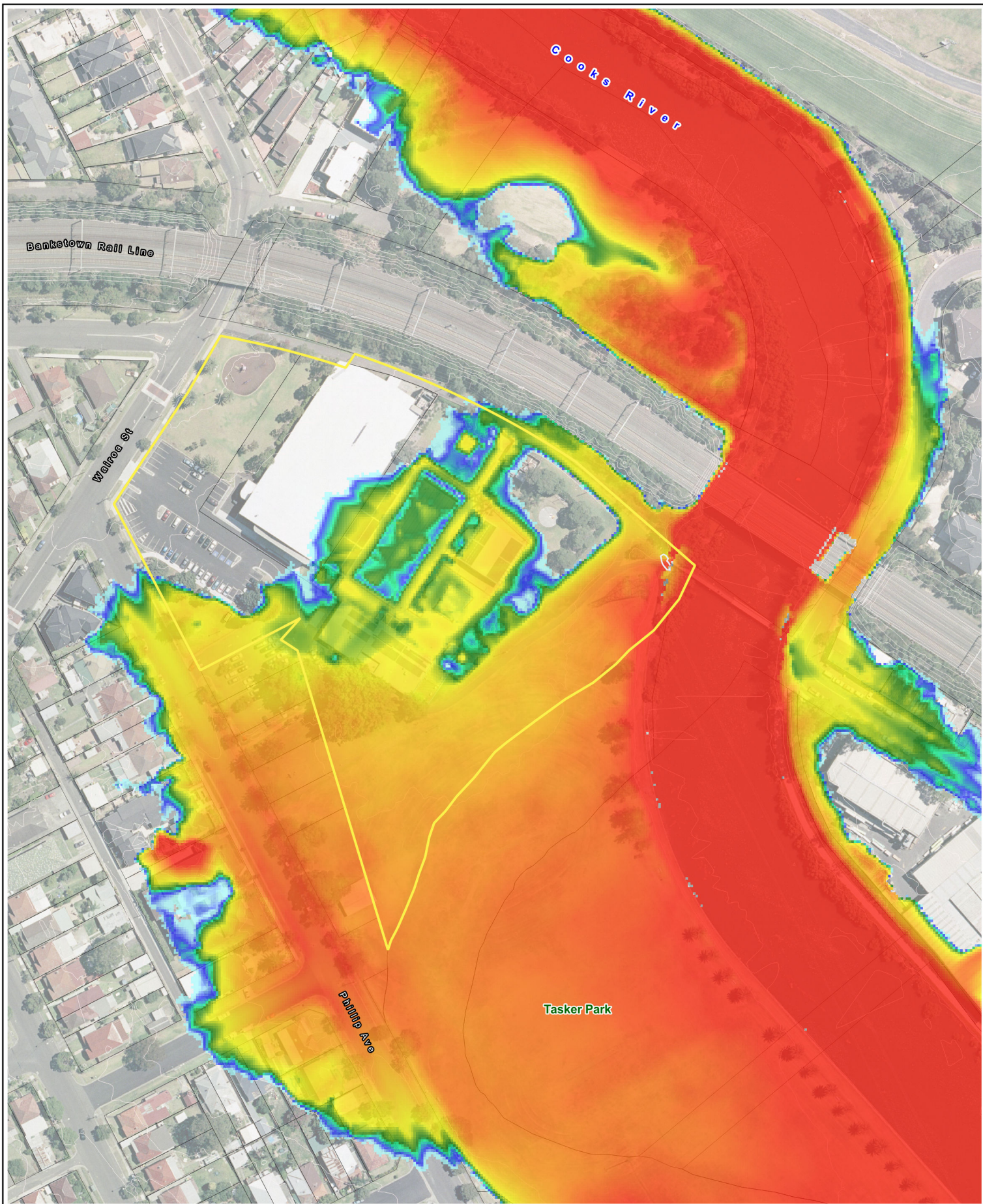
0425 297 461 | mitchell.gapper@turnbullengineering.com.au | TurnbullEngineering.com.au

Disclaimer:

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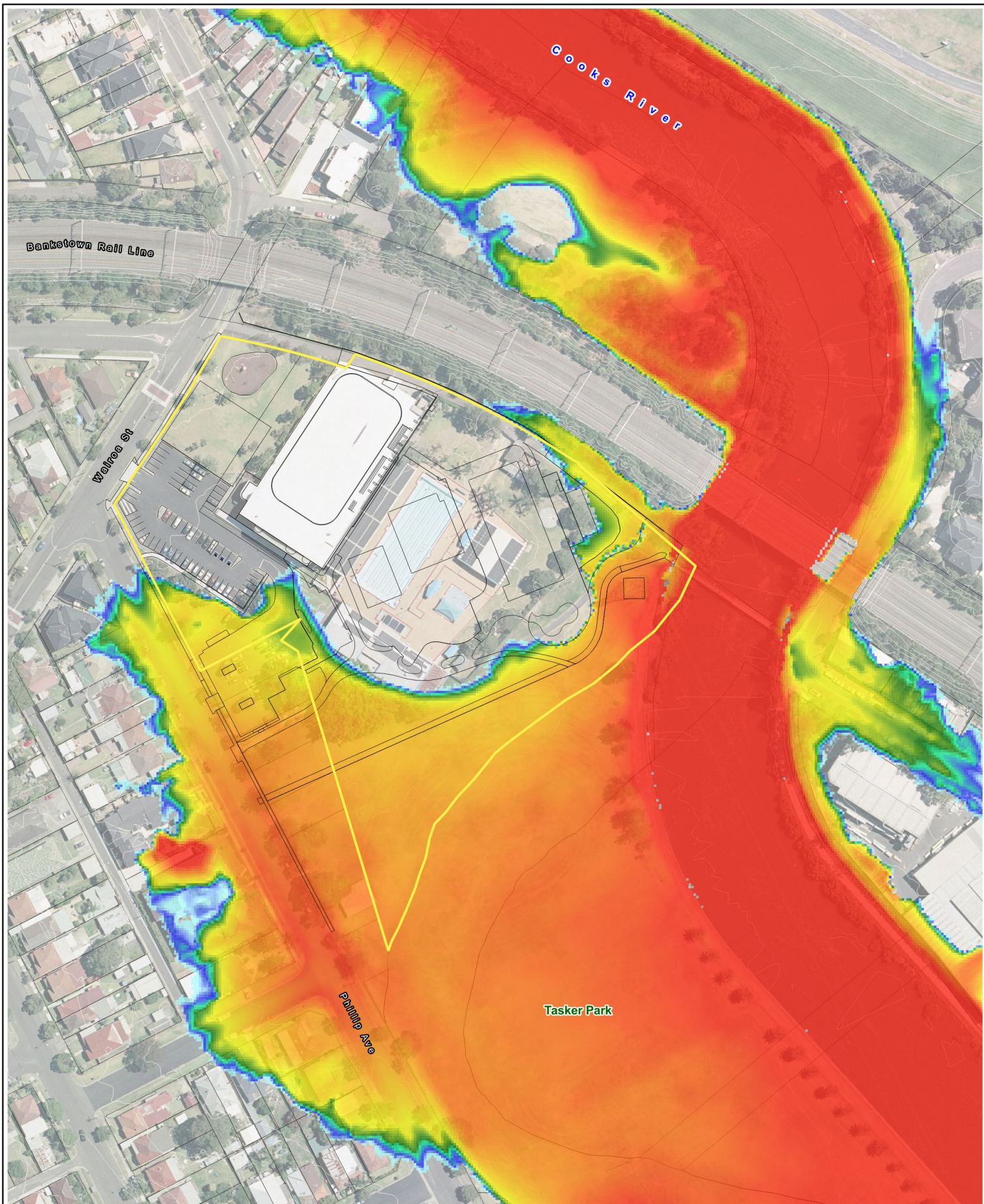

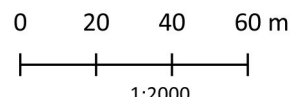











Figure No. A-4		Date	10/09/2021		LEGEND	
Peak Flood Depth 1% AEP (100 year ARI) Post-development Scenario						
 https://turnbullengineering.com.au/				 Lot		Peak Flood Depth (m)  0.05  .1  .2  .25  .5  1  2
				 Site Location		
Client CBC		TE Project No. 0265				

