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Dear Sonia

WGN160028 - Brookside/Duck Creek North Response to Stormwater Flood Model Recommendations

Two matters in relation to stormwater flood management were left unresolved following the 5 April 2016 consent application hearing for the Brookside/Duck Creek North development (WGN160028). These outstanding matters have now been addressed and are discussed below.

Information required to confirm storage attenuation

On 13 April 2016 Mott MacDonald received the subsequent flow hydrograph information, requested as review recommendation item 3 in the Brookside Development Stormwater Model Review (February 2016), from Cardno which allowed for the completion of the stormwater hydraulic model review. This information is in relation to the primary drainage hydraulics and was required in order to fully understand and ensure that storage attenuation had been appropriately accounted for within the hydraulic model.

Specifically, flow hydrographs for the 100 year and 2090 high pre and post development scenarios have been extracted from the XPSWMM model at approximately 200 m intervals. Following the initial review of the additional data we are satisfied that the hydraulic model is accounting appropriately for the storage loss introduced by the proposed development. This is most notably seen at hydrograph 6 under both scenarios which highlight the divergence of the existing hydrograph from the proposed on the rising leg of the hydrograph.

Sea Level Rise

Mott MacDonald are satisfied with the 13 April 2016 Cardo response to the sea level rise issue and specifically note that sea level rise should not have a major impact on the development given the current State Highway 58 (SH58) configuration. However if future changes to the alignment or elevation of SH58 are undertaken, consideration will be required to mitigate any adverse flooding.

For and on the behalf of
Mott MacDonald New Zealand Ltd.

A handwritten signature in blue ink, appearing to read "Thomas Joseph".

Thomas Joseph
Technical Director Modelling