

Our Ref: S25-110

Westera Partners Pty Ltd

2 March 2026
Brisbane City Council
Development Services

Sunshine Coast Office
P 0437 335 403

Attention: Angela Cleary
Brisbane City Council Reference: A006836143
Proposal: Development Permit for a Material Change of Use of Premises to Establish a Multiple Dwelling

RE: RESPONSE TO MEMORANDUM FROM WRM REGARDING DEVELOPMENT PERMIT FOR A MATERIAL CHANGE OF USE OF PREMISES 140 & 142 FRASERS RD MITCHELTON (DATED 4 DECEMBER 2025)

Council have requested that Westera partners provide a response to the comments raised by WRM in their memo dated 4 December 2025. Please see below responses to each item.

Information Required:

Implementation of Australian Rainfall & Runoff

- *Application of rainfall preburst*

Response 1: The hydraulic impact assessment has been updated to provide commentary on the selection of and use of preburst depths. The catchment is noted as being an urban with a critical duration of less than 1 hour. Prebursts depth provided by ARDataHub are for design storms equal and greater than 1 hour. Please refer the report for further commentary.

- *Effect of climate change on design losses (Westera's statement that ignoring loss uplift is conservative, is not sufficient as the interaction of changing rainfalls and losses could change critical durations and design storms and may not be conservative);*

Response 2: A design check on utilising rainfall increased in magnitude for climate change was undertaken to confirm the results of the modelling. It was found that there was minimal difference in the storm duration. The critical storms were cross checked against the selected storms in the report. The storms in the report resulted in a greater extent of inundation and have therefore been maintained as the critical events.

- *Determination and application of design blockage factors for all design event modelling (Westera has considered blockage as a sensitivity assessment only);*

Response 3: The risk of blockage of the proposed culverts is considered low. The reason for this is the likely debris type and size that will reach the structure. The upstream stormwater network and culverts will most likely accumulate any large debris and any which reaches the site will likely be from the channel and overbank directly upstream. The available debris is unlikely to cause significant blockage.

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Hydrologic model configuration

- *Model configuration and catchment delineation ignores the predominantly piped, urban nature of the catchment (i.e., modelling excludes stormwater pipe networks and provides insufficient level of detail within the proposed development area);*

Response 4: In minor events the upstream catchment is piped to the upstream side of the development site. The upstream catchment forms a gully which ultimately drains through the existing channel within the development site. In events greater than the capacity of the drainage network or in the case of blockage flows would approach the sag in the road on Princess St and flow overland. The overland flow path is through 57 and 59 Princess St. Therefore, it is considered appropriate that all flows would reach the site.

- *Adopted % impervious values selected for low density urban residential development only, ignoring existing adjacent higher density townhouse developments and producing a very low estimate of developed conditions % impervious for the Site;*

Response 5: The average density of the townhouse developments have been checked and contain a mix of high density and open space/vegetated areas. The average fraction impervious for these catchments has been checked via aerial imagery and is considered appropriate. Furthermore, these development sites are likely to have onsite stormwater detention (evidenced by the existing stormwater basin picture below). These developments are required to ensure no increase in peak flows discharging from their sites.

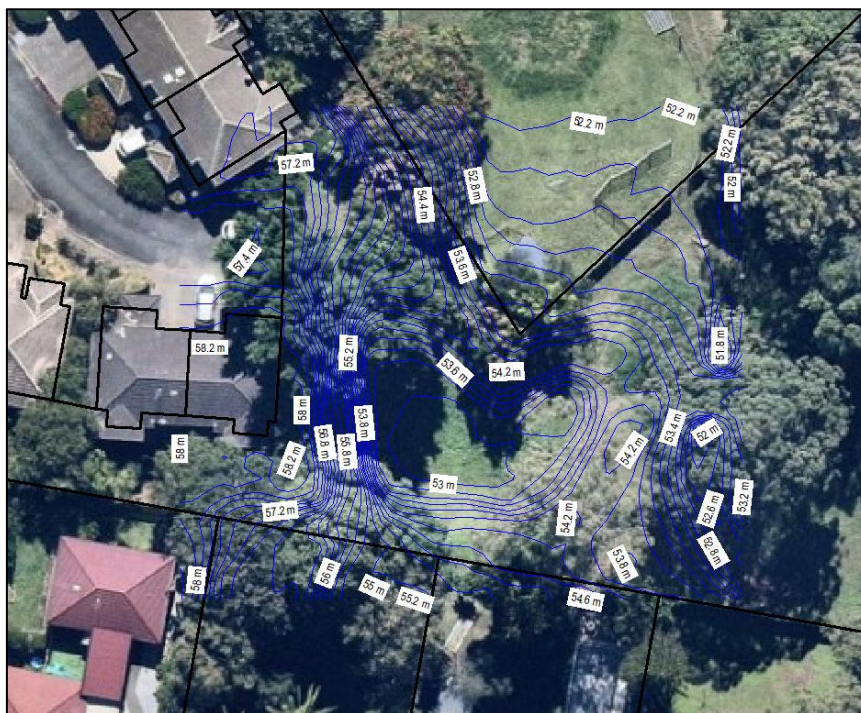


Figure 1 – Existing Stormwater Basin (Southern Side of Development Site)

- *Rational Method validation calculations use a time of concentration approach that is not suited to the predominantly piped, urban nature of the catchment;*

Response 6: The rational method results have been reviewed and adjusted. Refer the amended hydraulic impact assessment for details.

- *Design storm (critical duration) selection has ignored climate change and so may not be representative of either adopted existing or proposed developed conditions hydrology;*

Response 7: Please refer response 2. The effect of climate on the duration of the critical storm has been checked.

Hydraulic model configuration

- *Land use (hydraulic roughness) mapping is not sufficiently detailed, lacks sufficient categories to represent the range of existing and proposed conditions, and is too high (e.g. Manning's 'n' = 0.1 in the 'vegetated channel' area downstream of the Site);*

Response 8: The use of landuse types and roughnesses has been checked and is considered appropriate from site visits.

- *Land use mapping for developed conditions does not align with proposed development works per the engineering drawings, specifically the application of 'Stone Pitching' finish for a portion of the overland flow channel is not represented in the modelling;*

Response 9: The stone pitching of the channel is no longer proposed. The remaining land use zones are considered appropriate.

- *The adopted downstream boundary conditions (fixed tailwater) is not representative of flooding behaviour and, combined with a high hydraulic roughness value (see above) could act to mask potential downstream impacts;*

Response 10: The adopted boundary condition is set to the obvert of the downstream trunk stormwater pipe. Adoption of a fixed tailwater level is intended to determine the extent of flooding if the flood peaks of the downstream catchment and the developments external catchment occur coincidentally. The tailwater level is 47.7m AHD. The DSIL of the existing culverts on the low side of the development is 48.21m AHD. Therefore, the tailwater level does not result in a fixed level that would influence the results or affect the capacity of the existing culverts. In addition, the downstream channel would overtop at a level of 47.8m AHD. There is a consistent grade falling away from the development site beyond the channel which means the risk of there being a backwater effect is low.

- *Exclusion of (trunk) stormwater pipe network (existing and proposed) from the model ignores the potential for surcharging during events larger than the pipe network capacity (e.g. 1% AEP and 1 in 500 AEP) and likely underpredicts inundation;*

Response 11: The existing trunk stormwater discharges to the waterway corridor upstream of the site. Flows in excess of the pipe capacity would follow the road to the low point in Princess St and flow overland through the private property to the waterway corridor. Therefore, it is considered appropriate to assume flows in the modelled events would reach the channel. If the upstream system was to surcharge and otherwise bypass through some other area the peak flow through the site would be less than that modelled.

It is also noted that the first length of the downstream trunk stormwater system has been modelled with a tailwater level equal to the obvert level.

- *Modelling used a time step much smaller than the typical range of 1/2 to 1/5 of cell size. Timesteps this small raise concerns about model stability;*

Response 12: The modelling timestep has been chosen as the maximum depth of flow and velocity in the model exceed the grid size. Therefore a smaller time step has been selected to ensure the accuracy of the model and to manage any mass balance errors. The final mass balance error in the 1% AEP event is 0.08%.

- *Insufficient detail reported for modelled structures (i.e., culvert dimensions, numbers and invert levels), making checking configuration of key structures difficult.*

Response: Invert levels have been added to the report. Please refer figure 14.

Should you require further information in this regard, please do not hesitate to contact me at the Sunshine Coast office.

Yours faithfully,



Jared Hill CPEng | RPEQ 19891

Partner | Sunshine Coast Civil Manager

Westera Partners Pty Ltd