150126 HW/BM

28th April 2010

The General Manager
Liverpool City Council
Locked Bag 7064
LIVERPOOL BC NSW 1871

Attention: Mr J Organ

Dear Jeff,

RE: FLOODPLAIN MANAGEMENT
PROPOSED HOXTON PARK AIRPORT REDEVELOPMENT
COWPASTURE ROAD, HOXTON PARK

We thank you for your comments of 23rd April 2010 relating to the finalisation of the flooding and floodplain management issues for the above described site. We respond to your issues as follows;

1.0 *"Clarification of the impact of the filling of the floodway as a result of the filling for the access road construction is required. Sufficient justification should be provided to enable to make a technical or merit based decision, in accordance with its policy, to allow this filling to occur."*

As described in the previous floodplain studies, the TUFLOW modelling indicates that the introduction of filling proposed as part of the Hoxton Park Airport redevelopment results in flood level increases within the Hinchinbrook Creek Floodplain. These increases, with the exception of an insignificant backwater increase along the frontage of Ward place, are confined to the floodway itself and do not adversely impact existing properties. The issue of the increase along the Ward Place frontage has been dealt with as part of the various reports regarding the flooding behaviour of the area. It is also noted that any local increases in floodplain velocity do not compromise the floodplain integrity no trafficability of surround roadways.

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The minor filling to provide 1:100 year ARI flood free access is at the periphery of the floodplain and in generally consistent with the rezoning submission albeit moved toward the east. Given the required footprint of the Big W facility and the requirement from both under Councils DCP and Woolworths to provide 1:100 ARI flood free access, the filling is an integral and necessary part of the proposal.

To mitigate the impacts of the filling, the road alignment was modified from the original proposal to include to floodway between he service station site and the high flow culvert bank, "Culvert 1" under Cowpasture Road.

Given that the filling of the floodplain is both very minor in terms of the overall floodplain volume and that the increases are minor and contained within the existing floodplain itself, the impacts of the development proposal is not considered to significantly impact on the Hinchinbrook Creek floodplain.

2.0 "The report indicates an impact on the "Bus Depot" site. Clarification is sought as to the model accuracy and/or the impact on the site or any structures proposed or being constructed on this site.

Currently there are two tilt up structures being constructed on the Bus Depot site, one in the north east of the site the other in the south west. As noted in the URS flooding investigation, the modelling undertaken in TUFLOW indicates increases in flood level from the baseline condition to the post developed condition across the bus depot site. These increases were represented as discrete ranges of flood depth impact in the URS report figures. The depth impacts pertinent to the bus depot site were -50mm to +50mm change (represented as "yellow" cells on the TUFLOW grid) and +50mm to +150mm (represented as "blue" cells on the TUFLOW grid).

As noted in the previous reporting, the TUFLOW finite difference grid was implemented on a 10m x 10m model discretisation. At this resolution, the -50mm to +50mm flood impacts should more appropriately be considered as the no flood impact criteria. It is also noted that the TUFLOW modelling indicates that there is no significant increase in the modelled flow velocities across the bus depot site.

With regard to the south western building under construction, the URS report indicates that this area is within the ±50mm flood impact area. The TUFLOW output data for each of the cell boundaries in this area was further interrogated in this region. The absolute depth changes over the building pad area affect the north eastern 10% of the building by a maximum of 30mm. Resolution of the TUFLOW modelling to less than the 50mm accuracy is to overstate the validity of the modelling results. Based on this, it is considered that there is not measurable increase in flooding affectation for the south western building as a result of the Hoxton Park airport redevelopment proposal.

In relation to the north eastern building under construction, interrogation of the cell boundary model results indicates modelled absolute maximum flood depth increases of approximately 70mm. Whilst this is a marginal increase from the existing conditions, the floor level being constructed is of the order of 1.0m above this level and as such it is considered that this increase does not adversely impact on the development of the bus depot site.

Whilst there is a marginal numerical increase in flooding levels to the northern portion of the bus depot site is must be noted that the "developed" scenario was based on very preliminary information regarding Basin 6 and it outlet. As can be seen by the flood impact figures from URS/Golders, the outlet to the Basin 6 area, known as Northern Basin the in URS report, indicates construction of the floodway locally increases depth and velocity in the main floodway. It is noted that the area of marginal increase in flood levels on the bus depot site are generally adjacent to the areas of increase in flood depth due to the assumed basin 6 configuration hence the configuration of basin 6 is a significant factor locally within the floodplain adjacent to the bus depot site.

Yours faithfully,

Hugh Williams
Senior Civil Engineer
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Central Coast