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Your Reference: CDE-699 and CDE-845

Our Reference: 2007-08

Brisbane Stormwater Management Pty Ltd
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Date: 28 August 2007

The Chief Executive Officer
Caboolture Shire Council
P.O. Box 159
Caboolture, Q4510

Attn: Mr Tilake Arachchige, Stormwater Management Engineer

Dear Tilake,

Re: [REDACTED] Male Road, Caboolture

I refer to the flooding and stormwater detention aspects of MRG Water Consulting P/L's revised submissions of June 2007 and August 2007 in relation to the proposed residential development of the abovementioned properties.

MRG's June 2007 submission was intended to address the issues which I raised in my review of their earlier (February 2007) submission. While it adequately addressed those issues, it also attempted to cover an issue of regional floodplain storage which I raised in my review of Bayside Consulting's January 2007 Stormwater Management Plan. This latter issue of regional floodplain storage was inadequately covered by MRG, as discussed at my meeting with MRG and Bayside Consulting on 17 August 2007, and this instigated the revised submission of August 2007. The significant difference between the June 2007 submission and the August 2007 submission is that the normal water level in the proposed wetland basin is lowered by a further 0.6 metres, down to EL 5.2, to provide the required regional floodplain storage.

My review of these submissions confirms that the revised designs will provide adequate storage in the local floodway and basin to offset the impacts of the development on the local runoff. This is significant with respect to the downstream property through which the runoff must flow, to get to King John Creek. The local floodway profiles (particularly, the 100 year flood levels) through the development itself now appear to be adequately described.

My review also confirms that the August 2007 submission (as distinct from the June 2007 submission) will increase the regional floodplain storage on the site by at least the amount of the development's stormwater detention requirement. This is significant with respect to properties further downstream along King John Creek. Much of this storage provision will now be at a lower level than existing (as low as EL 5.2, versus EL 7 existing), but this is probably not a significant shortcoming. The proposed 1116 cubic metre excavation of the drainage easement downstream of the site will further increase the storage provision.

The revised submissions (particularly the August 2007 submission) therefore adequately address my previous concerns regarding local floodway levels, local floodway storage and regional floodplain storage. There are several side-issues which Council could consider either now or at the Op Works stage, including:

1. The August 2007 submission has further increased the height of the overfall from the floodway (IL 6.5) to the wetland (normal water level 5.2, invert 4.0). A substantial amount of scour protection may be required in this area, to prevent headward erosion of the overfall.
2. The wetland is now proposed to be confined by an almost-vertical wall (about 3-on-1), extending about 3.4 metres in height from the floor of the wetland (EL 4.0) to the surrounding fill level (EL 7.4, minimum). This wall will require some serious design, including a careful check for stability during rapid drawdown after a local storm, and there is an obvious need to ensure that the top of the wall (including the floodway overfall) is not accessible by the public.
3. The proposal to excavate the downstream easement may require the agreement of, or at least consultation with, the downstream property owner.

Please do not hesitate to contact me if I can be of further assistance in this matter. In the meantime, I have attached a copy of my calculations together with my invoice, and I remain,

Yours faithfully,

Denis Ogle, RPEQ 2405, Director