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Mr Warwick Stimson
Stimson Consultant Services
PO Box 4308
WINMALEE NSW 2777

2nd October 2012

Dear Warwick,

ANIMAL WELFARE LEAGUE NSW SITE – REVISED DEVELOPMENT LAYOUT REVIEW OF FLOOD IMPACTS

I refer to recent discussions with Rolfe Chrystal at *Architects of Arcadia* regarding the revised layout of the proposed redevelopment of the Animal Welfare League NSW (AWL) site at 1605 Elizabeth Drive, Kemps Creek.

The site is located about 700 metres west of the intersection of Elizabeth Drive and Western Road in the Penrith Local Government Area. South Creek general flows in a northerly direction and forms the northern and western boundaries of the property (refer **Figure 1**).

WorleyParsons was engaged by AWL in May 2011 to undertake a Flood Impact Assessment (FIA) for the previously proposed development of the AWL site, which involved the construction of up to six buildings and selective filling of the site.

WorleyParsons' FIA report¹ issued in September 2011 assessed local flood characteristics and determined that the proposed development would not result in significant flood level impacts across adjacent properties during the 100 year average recurrence interval (ARI) event, nor would the development lead to off-site increases in flow velocity, or any significant redistribution of flow. At the time of issuing that report, the extent of the floodway corridor for South Creek was determined according to local-scale interpretation of flood characteristics and was estimated to be at least 200 metres west of the existing 'Surrender' building at the site (refer **Figure 1**).

Subsequent to preparation of the FIA report for AWL, WorleyParsons continued with work for Penrith City Council as part of its engagement for the South Creek Flood Study. This work involved further assessment of the floodway corridor for the South Creek floodplain using detailed encroachment modelling to test the impacts of blockage on both a global and local scale.

The additional investigations determined that parts of Elizabeth Drive and the AWL site would be classified as floodway, including areas up to the floodway line shown in **Figure 1**.

Floodways are those areas where a significant volume of water flows during floods and, even if only partially blocked, would cause a significant increase in flood levels and/or a significant redistribution

¹ WorleyParsons (2011), 'Proposed Development At Animal Welfare League NSW Site, Kemps Creek - Flood Impact Assessment'.



of flood flow, which may in turn adversely affect other areas. Development is not appropriate within floodway areas.

In the case of the floodway at the AWL site, the results of WorleyParsons previous report did show an impact on flood levels at the upstream side of proposed buildings (*refer **Attachment 1**, Figure 10 from that report*). However, the impacts were limited to areas within the site or the adjacent Elizabeth Drive road reserve, with no additional flooding over Elizabeth Drive being predicted.

In light of the revised floodway corridor alignment, AWL has proposed an alternative development layout (*development Option 3A*), and has asked WorleyParsons to provide comment on the potential flood impacts associated with the new layout.

The revised layout (*refer **Figure 1***) has been configured to be outside of the floodway corridor. It is generally similar to the previous layout at the eastern section of the site; however, with a reduction in length of the proposed Row 3 and relocation of proposed Row 4 to the south of the other rows. The workshop/store has also been relocated to the south of the existing 'Surrender' building.

In terms of the potential impacts that the revised layout may have on local flood characteristics, it is expected that the overall extent of impacts will be reduced compared to that previously predicted (*refer **Attachment A***). The addition of Row 4 approximately 21 metres from the Elizabeth Drive reserve is expected to result in flood level impacts on the south side of the structure during the 100 year ARI event. Similarly, the proposed workshop/store building may also create located flood level impacts immediately upstream from the structure. However, as was the case for the previous layout, flood level increases would be limited to the northern side of the Elizabeth Drive road reserve.

As per the figure in **Attachment A**, an increase in flood level of 0.3 metres would still be more than 0.7 metres below the minimum surface level of Elizabeth Drive and therefore, would not manifest as any additional flooding across the roadway. The revised development layout is expected to have similar or less impacts than that shown in **Attachment A**, because the proposed buildings are now located outside of any flow path that is now classified as floodway corridor.

The impact on flow velocity would be to reduce velocities on the upstream/south side of the proposed buildings. There may be localised increases in velocity as waters flow between buildings, but similar to flood modelling results for the previous layout, it is expected that they would be contained within the AWL site.

Accordingly, the revised development layout (*Option 3A, shown in **Figure 1***) for the Animal Welfare League NSW site at Elizabeth Drive is not expected to have any flood related impacts greater than those presented in WorleyParsons' September 2011 Flood Impact Assessment Report, and therefore it is considered that the conclusions in that report remain valid.

If you have any queries relating to the above, please give me a call on 8923 6866.

Yours faithfully
WORLEYPARSONS

Warick Honour
Senior Engineer, Water Resources

FIGURE 1





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ATTACHMENT A

FIGURE 10 FROM SEPT 2011 FLOOD IMPACT ASSESSMENT REPORT

FIGURE 10

