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Walker Corporation
PO Box 3456
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Wednesday, 8 November 2006

Attention: Sally Lewis

PROPOSED RESIDENTIAL DEVELOPMENT AT MACQUARIEDALE RD, APPIN – PRELIMINARY RIPARIAN CORRIDOR INVESTIGATION

1. Background

Patterson Britton & Partners (*PBP*) have been engaged by Walker Corporation (*Walker*) to assist in definition of appropriate riparian corridor extents for a proposed residential development site at Macquariedale Rd, Appin.

This preliminary report is in support of the proposed rezoning stage of the development process. Our advice should be considered in conjunction with the advice from Anne Clements and Associates (*ACA*) and Pam Hazelton (*PH*).

The site is located immediately west of the Appin township on Lot 1, DP558807, Lot 1, DP 209779 and Lot 201, DP 749272. The western boundary is Ousedale Creek and the creek has three tributaries located on the subject site (refer **Figure 1**).

The site is within the Wollondilly LGA.

2. Information Gathering

The information gathering phase of the investigation involved a detailed site inspection, collection and review of available background reports/drawings, liaison with the Department of Natural Resources (*Darrell Goldrich*, *Greg Brady and Jan Grose*) and coordination with ACA and PH.

A detailed site inspection was undertaken by PBP on the 29th of September, 2006 in conjunction with ACA and PH. A flora assessment report has been prepared by ACA and should be read in conjunction with our report.

Principals Greg Britton BE MEngSc FIEAust Andrew Chitty BE MIEAust CPEng Peter Coltman BE MEngSc MIEAust
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Associates Stephen Aebi BE MIEAust Neville Boyes OMIEAust Scot Cranfield Cameron Druery BE MIEAust
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Alexandra Stone BE MIEAust Chris Yates BE MIEAust

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3. Riparian Corridor Objectives

Riparian land is defined as land which adjoins or directly influences a body of water (*Tubman & Price 1999*). It forms the transition between terrestrial and aquatic environments.

"*Riparian land provides a number of important environmental and other values which can include:*

- *A diversity of habitat for terrestrial, riparian and other aquatic species;*
- *A food source for a diversity of aquatic and terrestrial fauna (such as organic material, fruiting and flowering plants);*
- *Promotion of the movement and re-colonisation of individual species and plant and animal populations;*
- *Shading and temperature regulation;*
- *Conveyance of flood flows;*
- *Settlement of high debris loads;*
- *Reduction of bank and channel erosion through root systems binding the soil;*
- *Water quality maintenance through the trapping of sediments, nutrients and other contaminants;*
- *An interface between developments and waterways;*
- *Visual amenity; and*
- *A sense of place with green belts naturally dividing localities and suburbs" (*DNR Draft Wollongong Riparian Corridor Management Study - *May 2003*).

The minimum environmental objectives for riparian land are summarised by DNR in the Draft Wollongong Riparian Corridor Management Study (*May 2003*) as follows:

- Delineating the riparian zone on a map and zoning it appropriately for environmental protection;
- Providing a minimum core riparian zone width;
- Providing additional width to counter edge effects on the urban interface;
- Providing continuity for movement of terrestrial and aquatic habitat;
- Rehabilitating/re-establishing local provenance native vegetation;
- Locating services outside the core riparian zone wherever possible;
- Locating playing fields and recreational activities outside the core riparian zone; and
- Treating stormwater runoff before discharge into the riparian zone or watercourse.

In addition to environmental objectives, there are other considerations which are important to the sustainable function of a riparian corridor such as flooding and geomorphology. Objectives such as containing significant flooding within the riparian corridor and allowing sufficient room for geomorphologic processes to occur are equally valid objectives.

The detailed list of the natural resource outcomes to be pursued when considering riparian lands is detailed in Section 2.6 of the DNR Draft Wollongong Riparian Corridor Management Study (*May 2003*).

For the purposes of this study the stream category definitions as adopted by DNR in the May 2003 Wollongong Riparian Corridor Management Study have been adopted ie a Category 1 stream is an environmental corridor providing important linkages for wildlife, a Category 2 stream provides basic habitat and preserves the natural features of a watercourse and a

Category 3 stream has limited habitat value but contributes to the overall health of a catchment.

The DNR recommended minimum riparian corridor widths for each category are:-

- Category 1 – 40m from top of bank
- Category 2 – 20m from top of bank
- Category 3 – no minimum

4. Riparian and Protected Waterways

The site is bounded on the western side by Ousedale Creek and is intersected by three minor tributaries which drain in a westerly direction (refer to **Figure 1** for details).

The three minor tributaries that cross the site drain small catchment areas. The tributaries are generally ephemeral and have formed extensive gullies.

Ousedale Creek is considered a Category 2 stream as are the tributaries. The recommended widths of the riparian zones are mainly governed in hydrology terms by the steep gully topograph of the streams. The recommended riparian widths from the creek centreline (to permit depiction on **Figure 1**) are 50m for Ousedale Creek and 30m for the tributaries. These distances readily accommodate the DNR zone width recommendations.

5. Preliminary Riparian Corridor Widths

The recommended preliminary riparian corridor widths are presented on **Figure 1**. The recommended widths take into account the natural topography, creek channel widths, flooding, geomorphology, category and DNR recommendations.

Yours faithfully
PATTERSON BRITTON

Mark Tooker
Principal

Review / Verification by Date

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FIGURE 1

LEGEND:

- Creek Centreline
- Recommended Riparian Corridor Extents
- Site Boundary

NOT TO SCALE

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& Partners Pty Ltd

J6685/FIG1_CorridorExtents.jpg

MACQUARIEDALE RESIDENTIAL REZONING
PRELIMINARY RIPARIAN CORRIDOR EXTENTS