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10/12/2008

Silver Spirit Partners
Level 29, Chifley Tower, 2 Chifley Square
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Attention: David Goodrich

Dear David

RE: MORUYA EAST VILLAGE – DWE CORRESPONDENCE

We refer to DWE correspondence of 5 June 2008 (Ref: ER20080), responding to the Environmental Assessment for the Moruya East Village, and respond to those issues associated with nature of the proposed riparian corridors and the works proposed within them.

In its correspondence, the Department categorised:

- the southern and northern watercourses located in the main development area as Category 3 watercourses
- the watercourse located to the west of the main development area as a Category 3 watercourse, and
- Racecourse Creek as a Category 2 watercourse.

The Department describes a Category 3 watercourse as being important for Bank Stability and Water Quality, recognising *'the critical role of riparian vegetation for stabilising the bed and banks of watercourses and filtering catchment run-off and the contribution this makes to overall catchment health and retention of land (e.g. protection of property and assets)'*. A Category 3 watercourse is recommended to have a minimum Core Riparian Zone (CRZ) width of 10 metres (measured from the top of the bank) along both sides of the watercourse. Generally no vegetated buffer is required.

Southern and Northern Riparian Corridors

The Department requested additional information with regard to the southern and northern watercourses, comprising:

- The location of the proposed development relative to the watercourses
- The location of the centreline of the watercourses
- The location of the top of the bank
- The minimum riparian corridor widths (measured from top of bank) consistent with a Category 3 watercourse.

This information is provided in attached EDAW AECOM Drawing No. SK14C.

We note that given the ephemeral nature of the subject watercourses, there is generally little or no evidence of a top of bank. The nature of the watercourses is generally one of ephemeral, relatively non-meandering grassy swales in their upper reaches, transitioning as the grade becomes more gentle to a marshy, low-lying character, incorporating a few minor impoundments of water, and a more meandering swale, defined in the main by a relatively lush growth of reeds and other low riparian vegetation within it.

As can be seen from the drawing, the proposed riparian corridors will be substantially larger than the minimum 20m CRZ requirement (notionally shown as extending 10 metres either side of the centreline of the watercourse), comprising of both a CRZ and managed buffering vegetation.

EDAW AECOM Drawing No. SK03C provides a typical detail plan of the riparian corridor. As can be seen from this, the CRZ is defined within a pathway system running down both sides of the corridor (as seen downstream of the bridge), and varies in width. The Department's total CRZ requirement (i.e. 20 metres wide x the length of the watercourse) will be exceeded.

The perspective view on the same drawing indicates the nature of the natural community to be restored, the structural character of which will be consistent with nature of an ephemeral watercourse. The corridor will contain a diverse range of species consistent with the adjacent bushland remnants and our best understanding of the species that would have been present prior to development. All plantings will be of local provenance.

The Department raises a number of concerns with regard to the subject watercourses, which we outline and address below.

Roads and Development within the Riparian Corridors

Concern is expressed with regard to the provision of roads and other development within the riparian corridors, including:

- pathways, seating and exercise areas
- water quality treatment measures such as constructed wetlands
- other 'extensive works'.

As can be seen from EDAW AECOM Drawing No. SK14C, the riparian corridors are subject to three (3) road crossings only, necessary for achieving functional site access. As acknowledged by the Department, these crossings will be bridges, a measure which it supports. Otherwise, there are no roads present within the riparian corridor.

No pathways, seating, exercise areas or other similar development will be located within the CRZ, with the exception of a limited number of narrow, informal gravel 'sheep tracks' proposed where the CRZ is wide enough to accommodate it (refer EDAW AECOM Drawing No. SK03C – item 9). In addition to providing pedestrian and in some cases cycle access, some pathways will perform an emergency access function (refer EDAW AECOM Drawing No. SK03C – item 6) and most pathways will comprise a management edge between the CRZ and riparian buffer areas.

We confirm that no formal water quality measures will be undertaken within the CRZ, although we note the corridor will naturally perform an informal water quality function.

With regard to the nature and extent of the works to be undertaken within the CRZ, we propose that minimal disturbance occur within the corridor, and that the works will essentially be restricted to replanting, some minor reshaping including the incorporation of ephemeral wetlands and scour protection. Particularly with regard to the lower reaches of the subject watercourses, there may be some need for minor re-routing of the existing formed swale where it comes close to the development edge. However, we believe that given the low-lying, marshy nature of the watercourse in this area where a precise line of watercourse is often not well defined, this minor work can be readily undertaken without impacting upon the required functions of achieving bank stability and water quality, or compromising the ecological values of the corridor. The works within the riparian corridor will be characterised by their soft engineering nature, with the exception of some limited minor proposed urban interventions, as indicated by Item 2 on EDAW AECOM Drawing No. SK03C.

Asset Protection Zones

An integrated bushland management / bushfire management plan is proposed for the development. The plan in EDAW AECOM Drawing No. SK03C illustrates a typical application, where riparian buffer vegetation is managed by a Bush Regenerator to achieve fuel loads specified by a Consultant Bushfire Specialist, generally by means of hand removal. As can be seen, the buffer areas adjoin housing development and are clearly identified by a pathway, ensuring no erosion over time of the CRZ boundary. The Bush Regenerator would be trained by the Consultant Bushfire Specialist to assess specified fuel levels for the riparian buffer areas, and the work periodically audited by the Consultant Bushfire Specialist to ensure compliance. The approach maximises ecological outcomes for the corridor as a whole, while meeting bushfire safety requirements.

Wetland

As per our previous correspondence, we are no longer proposing to physically remove the large patches of *Juncus acutus* within the floodplain, which would have created ephemeral low-lying areas subject to periodic flooding. We provide an updated Concept Plan (EDAW AECOM Drawing No. SK01E) that reflects this change, i.e. no 'blue' areas of water are shown.

We trust the above demonstrates that the proposal will provide a strong, soft engineering riparian corridor outcome that exceeds the CRZ area requirements of the Department, incorporates additional corridor habitat well in excess of that required, and meets required bank stability, water quality and ecological functions in a manner sympathetic to the proposed urban setting.

It should also be noted that currently the property is actively used for agricultural purposes, primarily beef cattle. The impacts of this rural use upon the ecological systems are significant in terms of erosion and nutrient runoff. The proposed development and associated riparian corridor restoration works will effectively cause an order of magnitude improvement over the current environmental condition of the site.

Yours faithfully,



Mark Blanche
Director Environment

Attachments:

- Concept Plan – SK01E
- Riparian Corridor – Detail Plan and Perspectives – SK03C
- Proposed Riparian Corridors – SK14C