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Overview of Ecological & Wetland Issues Affecting Precinct 2A, Old Bar

Hill Top Planners

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1. Background

The Old Bar Precinct 2A development area is located on a low hill adjacent to a wetland that is covered by *State Environmental Planning Policy 14 - Coastal Wetlands* (SEPP 14) and is designated as wetland number 571. The property boundary covers part of the wetland (Figure 1).

A causeway constructed across the wetland as part of historical landuse activities (Figure 1) effectively limits tidal inundation such that downstream of the cause way the wetland is tidal estuarine, comprising an extensive area of saltmarsh plus mangroves along the banks of the tidal creek (Photo 1). Upstream of the causeway, Swamp Oak forest dominates, and this gradually gives way to a Melaleuca-dominated forest (Photos 2 & 3).

Photo 1. Estuarine wetland vegetation downstream of the causeway, showing salt meadow (dominated by *Juncus* spp.) in the right foreground, salt flat (dominated by *Sarcocornia quinqueflora* and *Sporobolus virginicus*) in the left middle-ground, mangroves (dominated by *Avicennia marina*) in the back ground, which are, in turn, backed by Swamp Oak (*Casuarina glauca*) and eucalypts.

Photo 2. Swamp Oak (*Casuarina glauca*) immediately upstream of the causeway.

Photo 3. Swamp Oak merging into Melaleuca forest. In the foreground is *Melaleuca ericifolia.* Further upstream, other species of Melaleuca occur, along with *Eucalyptus robusta.*


causeway
subject site
SEPP 14 wetland no. 571
wetland boundary identified by Greater Taree City Council & DIPNR
N
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PO Box 55 Kotara 2289
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Projection
MGA / GDA94
Scale
1:5,000
Drafter
Geoff Winning
Prepared
19 January 2006
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Subject Site
and Wetland Extent
Figure 1

2. Ecological & Wetland Issues Affecting Proposal

In addition to the wetlands being covered by SEPP 14, virtually all of the remnant natural communities within and adjoining the subject site are listed as endangered ecological communities (EECs) in Part 3 of Schedule 1 of the *Threatened Species Conservation Act 1995* (TSC Act), being Coastal Saltmarsh, Swamp Oak Floodplain Forest and Swamp Sclerophyll Forest on Coastal Floodplains.

However, the part of the subject site that is to be developed comprises pasture with only a small number of scattered trees. Development of these areas would not result in any direct ecological impacts of any consequence.

Thus, the main ecological issue for the proposed development is the suite of potential indirect impacts on the wetland and other ecological communities adjoining the site. Principal among the potential impact are water-borne impacts such as increased stormwater runoff, stormwater sediment load and stormwater nutrient load. Additional indirect impacts include intrusion by people and vehicles, rubbish dumping, predation by domestic pets, etc.

To mitigate some of these potential indirect impacts, the Department of Planning required that a 40 metre buffer be provided along the edge of the wetland, and that this be included in the local environmental plan (LEP) for the site as zone 6(a). The relationship between the LEP zones and the wetland boundary are shown in Figure 2. There is also a need to treat stormwater runoff from the site prior to discharge into the wetland.

The local environmental study (LES) prepared by Greater Taree City Council (GTCC) for the site supported the inclusion of bushfire asset protection zones (APZs) and stormwater treatment within the 6(a) 'buffer' zone.

An assessment has been undertaken of bushfire protection requirements, with the following preliminary recommendations:

- minimum APZ requirement adjacent to saltmarsh = 20m.
- minimum APZ requirement adjacent to forest = 40m (comprising 10m OPA and 30m IPA).

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LEP Zones

Figure 2

3. Preliminary Mitigation Measure Identification

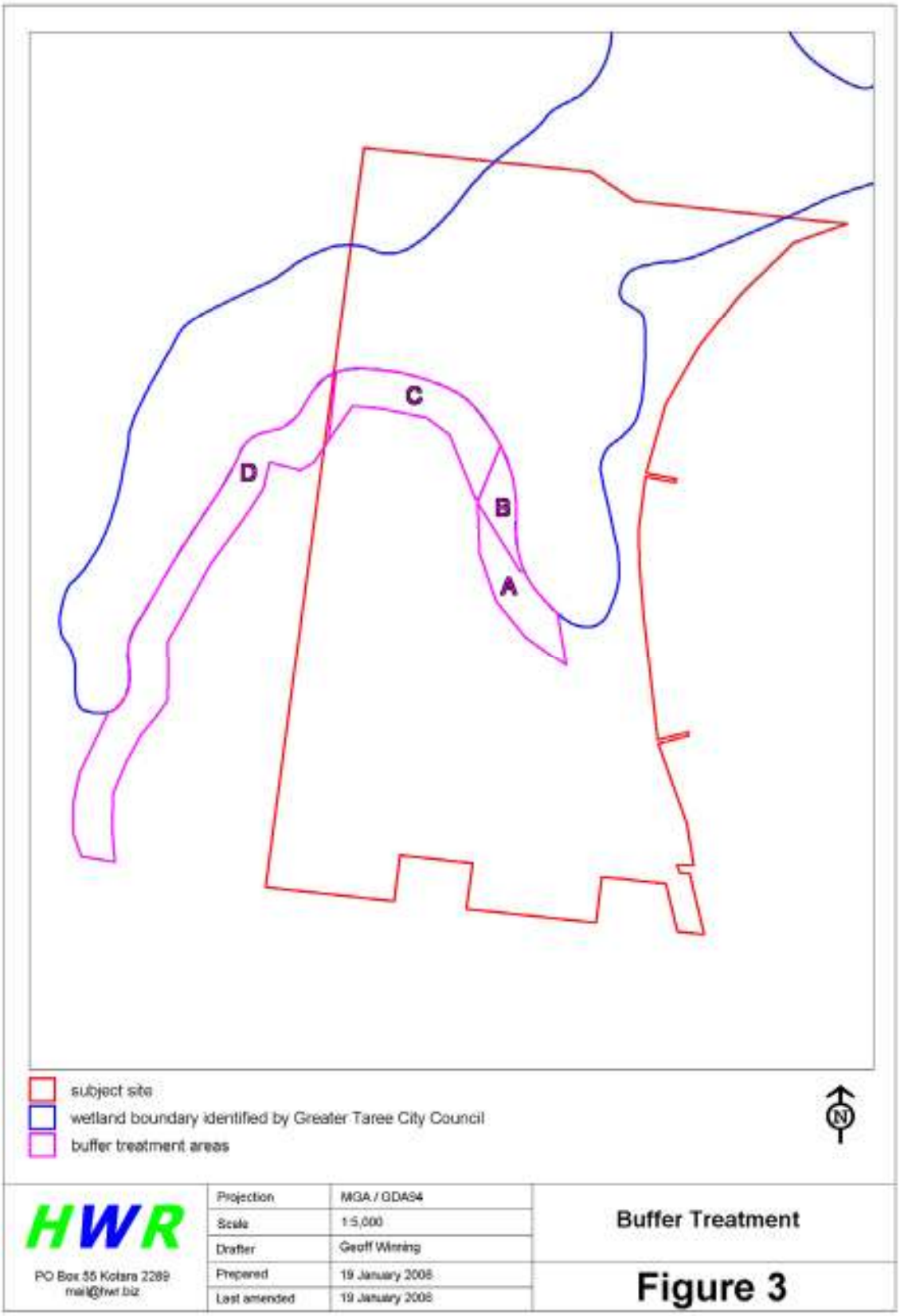
While the proposal would be subject to a full assessment of potential ecological and wetland issues, and mitigation measures would arise from this assessment, the iterative planning process that has been undertaken to date has identified a number of potential approaches to mitigating identified potential impacts. These measures would be more fully addressed as part of the assessment process but are included here to provide an indication of the direction of thinking on these issues.

Stormwater can affect estuarine wetlands through increased sediment load, increased nutrient load, and decreased salinity (by leaching of salt from soil). The salinity issue would be mitigated by ensuring all stormwater runoff from developed surfaces would be discharged (after treatment) into the natural wetland upstream of the existing limits of tidal inundation.

Treatment of stormwater runoff from developed surfaces would be addressed by a stormwater management system incorporating constructed treatment wetlands. This system would be integrated into the buffer area. Constructed wetlands would be more or less linear, filling much of the width of the buffer area. The aim is to provide a landuse in the buffer that does not compromise bushfire protection requirements, provides wildlife habitat, and has a reduced maintenance requirement (to minimise ongoing maintenance costs for GTCC). The constructed wetland system would be well above the modelled requirements for the proposed development.

The preliminary buffer recommendations are:

- A perimeter road should be constructed such that the outer edge of the pavement coincides with the outside edge of the 6(a) zone. Verge, etc. associated with the road and nominally included within the road easement to be included within the 6(a) zone.
- Pathway / cycleway to be included within 6(a) zone adjacent to road easement.
- Assumed combined road verge / cycleway width of 10m, leaving 30m of buffer width to be treated as follows (see Figure 3).
- Area B - This area contains a large area of marginal wetland vegetation and should not be revegetated nor mown. A low barrier should be constructed between the cycleway and the remnant marginal wetland vegetation. Infrequent removal of self-sown trees would be required.
- Area C - This area has excellent views across the saltmarsh and would make an ideal parkland for informal passive recreation. The whole 30m width should be planted with clumps of trees (8-10 trees per clump) and isolated trees with a wide separation between trees and clumps (min 20m). This area would need to be mown. A low barrier should be constructed along the outer edge of the 6(a) zone to ensure no mower incursion into the wetland.
- Areas A & D - The first 10m on the outside of the cycleway should be planted with isolated trees and isolated clumps of trees (as described above). The remaining 20m should be excavated / embanked, as required, to create a shallow linear wetland (or series of separate wetlands) which would provide stormwater treatment, additional habitat and fire protection. These linear constructed wetlands would replace the proposed swale and pond system. More detailed design criteria are obviously required if this treatment is considered acceptable.


C
D
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subject site
wetland boundary identified by Greater Taree City Council
buffer treatment areas
N
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Buffer Treatment
Figure 3