



**ANNE CLEMENTS & ASSOCIATES PTY. LIMITED**  
(ABN 41 077 242 365, ACN 077 160 939)  
Environmental and Botanical Consultants  
PO Box 1623, North Sydney 2059  
Phone: (02) 9955 9733, Facsimile: (02) 9957 4343  
Email: [mail@acabotanic.com](mailto:mail@acabotanic.com)

23 October 2014

Sofie Mason-Jones  
Principal Environmental Planner  
WorleyParsons Services Pty Ltd  
Level 12, 141 Walker St  
North Sydney NSW 2060  
P: +61 2 8456 7385

**RE: Review of latest plans for Doltone House Webster Street Evacuation  
Route and Carpark**

Dear Sofie,

## **1.0 Introduction**

For the existing proposal, the following reports have been prepared:

Report	
A.	<i>Upgrading of the existing Deepwater Motorboat Club Lot D DP 391154 and Lot A DP 405225, No 30 and 31 Webster St, Milperra.</i> A. Flora assessment B. Assessment of Significance dated 10 March 2014
B.	<i>Assessment of Significance: Upgrading the existing Webster Street for the provision of a flood evacuation route for the upgrading of the existing Deepwater Motorboat Club, Milperra.</i> dated 2 September 2014
C.	Summary of Proposed Tree Removal for the upgrading of the existing Deepwater Motorboat Club Lot D DP 391154 and Lot A DP 405225, No 30 and 31 Webster St, Milperra with Upgrading of the existing Webster Street for the provision of a flood evacuation route. dated 30 September 2014)

The proposed revision (outlined in email correspondence from Chris Thomas of WorleyParsons Services Pty Ltd dated 21 October 2014) is as follows:

*The proposal to raise Webster Street to a minimum elevation of 2.7 mAHD has the potential to impact on the catchment and flood hydrology of the area. Each of these is discussed in the following.*

### **Catchment Hydrology**

*The minor extension to the height of Webster Street will have no impact on the catchment hydrology of Deepwater Reserve or the adjoining parklands. This is because there is no proposal to alter the 3 cell box culvert that crosses Webster Street. ... provides the tidal connection between Georges River and the lagoon ... within Deepwater Reserve. Hence, tidal flows will operate as they have previously and runoff from the local catchment around Deepwater Reserve and from the upgraded Webster Street will discharge in a similar fashion to the way it currently does.*

### **Flood Hydrology**

*The minor extension to the height of Webster Street will reduce the frequency of overtopping of Webster Street by floodwaters from the Georges River.*

*That is, it will take a larger flood for floodwaters to rise to the height required to overtop the upgraded roadway. However, the tidal connection between the Georges River and the lagoon within Deepwater Reserve will still operate as it currently does and will therefore distribute floodwaters into the lagoon in the same manner as is currently the case. ...*

### **2. Impacts of Raising Webster Street to minimum elevation of 2.7 mAHN on adjoining Vegetation**

*This needs to be determined by Anne Clements & Associates based on an increase in the footprint of the road formation shown in Figures 4 and 5 of the Flood Report. The concept design for the road formation (refer to Figure 5) includes batter slopes from the edge of road formation that grade at 1(V) in 3(H). Therefore, an increase in road crest level of between zero and 0.3 metres, will result in an increase in a northerly and southerly extent of the toe of the batter by between zero and 0.9 metres. This corresponds to a zero increase in the toe extent at Chainage 250 (refer dashed line in Figure 4) extending to a 0.9 metre increase in the toe extent at Chainage 540 (refer Figure 5).*

## **2.0 Revised vegetation impacts along Webster Street**

To the north of Webster Street, the vegetation consisted of the water dependent degraded ecosystems (Swamp Oak Floodplain Forest, Mangroves, stands of *Phragmites australis* and further north a lagoon). The hydrology of these ecosystems from the “minor extension to the height of Webster Street will have no impact on the catchment hydrology of Deepwater Reserve or the adjoining parklands” (from the engineer advice of WorleyParsons dated 21 October 2014).

From the engineer advice, the revised proposal “will result in an increase in a northerly and southerly extent of the toe of the batter by between zero [Chainage 250] and 0.9 metres [Chainage 540]”.

From mapping an approximate line from the current extent of batter at Chainage 250, to 0.9 m beyond the current batter extent at Chainage 540 on the north and south of Webster Street (attached Figure 1), it is concluded that:

- approximately 150 m<sup>2</sup> of mapped Swamp Oak Floodplain Forest adjoining Webster Street is likely to be impacted; and
- Between located Chainage 510 and 530, three locally native but possibly planted trees (one *Melaleuca styphelioides* (Prickly-leaved Paperbark), one *Casuarina glauca* (Swamp Oak) and one *Eucalyptus tereticornis* (Forest Red Gum), as

photographed at Observation Point 22, see Figure A8b and Appendix A1b of Report A), will likely require removal. From onsite inspection, these trees are growing on an area of modified soil, with an understorey of *Phragmites australis* and a groundlayer dominated by exotic species such as *Acetosa sagittata* (Turkey Rhubarb) and *Bidens pilosa* (Farmer's Friend).

To the south of Webster Street, the 0.9 m extension to the previously proposed southern batter extent is likely to have no additional ecological impacts (Figure 1).

### **3.0 Revised vegetation impacts in proposed carpark**

If the proposed carpark (Figure 3 of WorleyParsons Services Pty Ltd 2014, see attached Figure 2) were to be raised to a minimum elevation of 2.7 mAHD, then an additional 3 m<sup>2</sup> of River-flat Eucalypt Forest may be impacted by the extent of batter slope in the north of the proposed carpark (Figure 2).

### **4.0 Conclusions from revised Assessments of Significance**

Maintaining the existing hydrology is essential for the long-term survival of the water dependent ecosystems north of Webster Street. The road and associated drainage have been designed by the hydro-engineer to satisfy this requirement.

The total potential loss from the revised proposal increases from less than 0.6% (0.015 to 0.03 ha) in the previous proposal to less than 0.9% (0.03 to 0.045 ha) in the revised proposal with the increased elevation of sections of the road of more than 5 ha of *Swamp Oak Floodplain Forest*.

The total loss of 3 m<sup>2</sup> for the revised proposed raising of the carpark is a decrease from 0.2 ha loss in the previous application for the car park with a flood evacuation route to Maxwell Avenue and widening of Maxwell Avenue, of the approximate mapped 12 ha of *River-flat Eucalypt Forest*.

The revised proposal to increase the level of the road to a minimum elevation of 2.7 mAHD does not change the conclusion reached in the Assessment of Significance (Report B dated 2 September 2014). The revised proposal with the use of Webster Street decreases the total loss of *River-flat Eucalypt Forest* to at most 3 m<sup>2</sup>.

Hence this revised proposal is not likely to adversely place the local occurrence at risk of extinction, and is not likely to substantially and adversely modify the composition of the ecological community *Swamp Oak Floodplain Forest* or *River-flat Eucalypt Forest* of such that its local occurrence is likely to be placed at risk of extinction.

### **5.0 Recommendations**

The recommendation in Reports A and B should be adhered to, namely:

#### **5.1 From Report A (part A)**

##### **5.1.1 Vegetation adjoining the Webster Street intersection with Henry Lawson Drive**

There is a a modified mown road verge on the northern side of the Deepwater Park entrance adjoining the intersection with Henry Lawson Drive in Deepwater Park. The vegetation adjoining the mown grassy verge is constrained as it meets the criteria for

both the Commonwealth listed Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest and state listed Cooks River/Castlereagh Ironbark Forest intergrading with/or Shale-Gravel Transition Forest. North of Webster Street, at least seven plants of *Acacia pubescens* was recorded with the most conspicuous plant recorded in the corner of the vegetation adjoining Webster Street to the north.

**It is recommended** if any upgrading of this intersection is required then:

- it should be restricted to existing cleared and disturbed edges, where practicable;
- it should be carefully planned and the edge of the vegetation mapped by a botanist/ecologist with a licenced surveyor;
- it should be closely supervised and works photographed by an ecologist;
- the monitoring and reporting of these works should be included as part of the implementation of the Conservation Management Plan for the Motorboat Club site.

### **5.1.2 Vegetation within the proposed expanded car park area and proposed new service road**

The vegetation of this area includes healthy remnant local native trees. The expanded carpark area and immediate surrounds of the Motorboat Clubhouse consists of surveyed planted and remnant trees with almost no native understorey or groundlayer species. The groundlayer consists of bituminised carpark, overgrown groundlayer weed species with limited patches of native groundlayer species (*Einadia hastata* and *Atriplex semibaccata*) and rubbish dumpings (garden waste and building materials). The healthy native remnant trees are a constraint that need to be considered in the design and location of the proposed new service road and the 275 space car park.

In terms of conservation constraints, the vegetation of the proposed expanded car park area and proposed new service road does not satisfy the listed criteria for any endangered ecological communities under the NSW Threatened Species Conservation Act 1995, but the remnant trees are part of the formerly occurring River-Flat Eucalypt Forest on Coastal Floodplains.

**It is recommended that:**

- soil level changes around the healthy local-native remnant trees should be avoided and/or minimised, where practicable;
- current fill around the bases of the healthy local-native remnant trees being retained should be removed to increase their longevity;
- in the proposed carpark, as many as practicable of the healthy local-native, remnant trees located along the northern edge of the car park should be retained;
- the spill-over carparking bays consist of porous pavement such as “Grass Protecta” used in the Macquarie University carpark (Appendix A2). Porous pavements allow natural watering of the retained trees, whilst minimising risk of root compaction, as well as increasing the conservation value of the carpark;
- the grass used in the spill-over carparking bays should not be the invasive exotic grasses Kikuyu and Buffalo Grass, especially given the closeness to bushland. *Cynodon dactylon* (Common Couch) is a suitable grass, supplemented by native provenance grasses (such as *Microlaena stipoides* and *Oplismenus imbecillis*) and herbs (such as *Dichondra* sp., *Viola* sp.);
- trees in the car parking include *Backhousia myrtifolia* grown from seed collected onsite, if practicable, in consultation with the relevant authorities;

- the loss of healthy remnant trees be offset either by planting additional local native trees grown from seed collected onsite or nearby and/or as part of bush regeneration efforts in the adjoining Deepwater Park (see Section B4.0).

### **5.1.3 Vegetation located around the function centre, restaurant (where former pool is currently located) and entry gate**

This area was largely previously cleared and remained cleared for the activities of the Motorboat Club.

There are healthy remnant trees of conservation significance, including the regionally significant *Eucalyptus baueriana*.

#### **It is recommended that:**

- soil level changes around the healthy local native, remnant trees being retained be avoided or minimised, where practicable;
- current fill around the bases of the healthy local-native remnant trees being retained be removed to increase their longevity;
- as many as practicable of the healthy local native, remnant trees be retained, where practicable;
- any grass used in the landscaping should not be the invasive exotic grasses Kikuyu and Buffalo Grass, especially given the closeness to the surrounding bushland. *Cyndon dactylon* (Common Couch) is a suitable grass, supplemented by native provenance grasses (such as *Microlaena stipoides*, *Oplismenus aemulus*) and herbs (such as *Dichondra*, *Viola*);
- trees in the landscaping include *Backhousia myrtifolia* grown from seed collected onsite, if practicable, to complement the locally significant stand along Webster Street, in consultation with the relevant authorities;
- the loss of healthy remnant trees be offset by planting additional local native trees grown from seed collected onsite or nearby.

as part of the orderly operation of the Motorboat Club site:

- all non-local native ground layer and shrub species be controlled;
- the planted garden plant *Opuntia ficus-indica* close to the boundaries of the Deepwater Motorboat Club site and the adjoining Park be removed; and
- rubbish and dumping be removed as soon as practicable to minimise risk of further dumping; and
- the venue and surrounding parkland be open for use by the general public to increase use of the Deepwater Park by the general population and decrease parking of cars in the bushland.

**In summary**, the conservation offsetting should form part of a conservation management plan and should include:

- careful bush regeneration of the River-Flat Eucalypt Forest on Coastal Floodplains growing near the boundaries of the Motorboat Club site. There was at the time of survey 0.286 ha of highly degraded River-Flat Eucalypt Forest on Coastal Floodplains on the Motorboat Club site;
- planting of an additional local-native provenance trees and shrubs on the Motorboat Club site to offset losses of onsite remnant trees (Figure A9c);
- all native plantings should be grown from local native seed collected on or near the Motorboat Club site or nearby; and
- to ensure that the local native plants are of sufficient size, tubestock of local native plants should be grown to the required size with plant orders placed shortly after approval has been granted.

## 5.2 From Report B

The trees close to the existing Webster Street or in the existing carparks be retained in the proposed carparking bay, where practicable, especially:

- the two *Eucalyptus moluccana* approximately 20 m tall, located 2 m south of existing carparking bays at approximately Chainage 270 m;
- the three *Eucalyptus moluccana* approximately 20 m tall, located 5 m south of existing carparking bays at approximately Chainage 290-300 m; and
- the one *Casuarina glauca* approximately 18 m tall, located at Chainage 375 within the existing carparking bay, depending on soil level changes.

Attached figures:

1. Impacts from revised proposal on the trees and constrained (endangered) vegetation overlaid on Figures 4 and 5 of WorleyParsons Services Pty Ltd
2. Impacts from revised proposal on constrained (endangered) vegetation overlaid on Figure 3 of WorleyParsons Pty Ltd

Dan Clarke

Dr AnneMarie Clements