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17 May 2012

Dear Michael,

## **RESPONSE TO OEH COMMENTS REGARDING ECOLOGICAL SURVEYS AND LANDSCAPE PLAN AT CRONULLA SHARKS REDEVELOPMENT SITE**

This letter outlines our response to two issues raised in the letter dated 7 May 2012 from the Office of Environment and Heritage to the Department of Planning and Infrastructure. The issues are:

- The adequacy of the ecological assessment
- Proposed landscaping within the foreshore setback

It is understood that other matters raised in the OEH letter will be dealt with separately by JBA Planning. This includes issues related to noise

### **ECOLOGICAL SURVEYS**

The following comments are restricted to the adequacy of the ecological field survey undertaken over the summer of 2011/12 to supplement the desktop assessment done previously. Our desktop assessment was based on various data sources including the NSW Wildlife Atlas records, which have results of wader surveys that were undertaken by OEH up to 2007. We understand that it is considered unlikely that new species would have been recorded since 2007 (pers. com. OEH ecologist Debbie Andrew).

Specifically we are responding to the OEH recommendation that 'baseline surveys of the adjacent estuarine areas along the northern boundary of the proposed development be undertaken over a 12 month period to determine whether impacted areas serve as roosting, breeding or foraging habitat for threatened birds and microbats and if they have a role as a movement corridor for these or other threatened fauna'.

#### **Guidelines**

Frog, bat and bird surveys were conducted in accordance with the *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft* (DEC 2004), and *Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna Amphibians* (DECC 2009). These guidelines in relation to the survey effort are shown in **Table 1**.

Green and Golden Bell Frog surveys were undertaken at four locations over 2-3 nights. These four locations represent one habitat stratification unit, modified, and a reference site at Elouera Road Wetlands. The total survey effort of 169 minutes averaged approximately 45 minutes of survey per night within the survey area and 17.5 minutes at the reference site. A transcription error in the original report meant that survey times appeared to overlap with survey times for birds, but this has been corrected.

Bat surveys were undertaken using ultrasonic call recording (Anabat) at five locations for one night and one location for two nights. These six locations represent four habitat stratification units; mangrove, grassy playing field, wetland, and carpark. The habitat stratification unit, mangrove, is considered to be preferred habitat on-site for threatened bat species. Anabat recordings were undertaken all night at three mangrove locations and for approximately one hour at one mangrove, one playing field, one wetland, and one carpark location.

Bird surveys were conducted over nine days spread over 12 weeks. Within those nine days, 15 bird surveys were undertaken which each included opportunistic bird observations and at least 30 minutes of dedicated migratory bird survey conducted from the boardwalk that extends into Woollooware Bay. Timing of dedicated bird survey was undertaken to coincide with high and low tides as this results in more representative sampling of migratory waders than dawn or dusk surveys. In addition, a total of 865 minutes of opportunistic bird survey was undertaken across the site in conjunction with other surveys. This time takes into account the transcription error in the original letter mentioned above.

### **Spatial extent**

As indicated in ELA's report dated 17 February 2012, surveys were conducted using a spotting scope (range of approximately 500 m) from the end of the boardwalk which is located on the margin of the mangroves and open water of Woollooware Bay. This boardwalk allowed visual access over the entirety of the mudflats located in the western half of the bay. Suitable wading bird habitat was not present to the east and north of the boardwalk viewing platform. The spotting scope did not allow views to Towra Point in the north east.

An aerial photograph showing the extent of coverage during field survey will be provided.

### **Temporal extent**

The field survey was conducted during November 2011 to February 2012. The summer months are known to be the optimum period when target species, particularly migratory birds, are likely to be present in the area. While there may be seasonal and annual variations due to breeding, climate, etc., it is likely that the survey captured the majority of the species present in the area. This in combination with the OEH records identified earlier indicates that there is likely to be no further value in extending the survey period over the remaining months of the year.

## **PROPOSED LANDSCAPING WITHIN THE FORESHORE SETBACK**

The current landscaping drawings by Aspect Studios include reference P11017\_Cronulla Sharks\_EA07\_C and P11017\_Cronulla Sharks\_EA03\_D.

The landscaping concept for the foreshore setback was initially developed by Aspect Studios and ELA in consultation with Sutherland Shire Council (Ian Drinnan 23/6/2011). The concept aims to recreate a 'natural' vegetation succession from the existing mangroves, to saltmarsh and swamp oak floodplain forest vegetation communities. This approach would significantly improve on current conditions, which feature a bitumen carpark on the eastern side, grass on the western side, and the entire foreshore degraded by weeds and rubbish.

Council agreed that planting zonation and species will be selected consistent with saltmarsh and swamp oak communities, and be of local provenance (propagules or tubestock will be sourced so that there is no impact on existing populations of these species). The vegetated buffer will be continuous along the foreshore to improve connectivity for a range of habitat types, and assist recovery of these endangered ecological communities.

The proponent has committed to establishment and maintenance of the foreshore buffer zone by suitably qualified and experienced bush regenerators to ensure high quality ecological integrity and amenity. We understand that funding for on-going management will be provided through the Sharks Club (eastern section) and strata management of the residential development (western section).

If you have any questions please do not hesitate to contact me on **(02) 8536 8612** or [bethm@ecoaus.com.au](mailto:bethm@ecoaus.com.au).

Sincerely,

A handwritten signature in black ink, appearing to read 'Beth Medway', with a stylized flourish at the end.

**Beth Medway**  
**Senior Consultant**

**Table 1: Survey effort in relation to guideline requirements**

TARGET SPP OR GROUP	GUIDELINE REQUIREMENTS	ELA SURVEY EFFORT (NOV 2011 – FEB 212)
Green and Golden Bell Frog	<p>DEC 2004:</p> <ul style="list-style-type: none"> <li>Systematic day habitat search: One hour per stratification unit; Varies according to the seasonal peak of activity of target species;</li> <li>Night habitat search of damp and watery sites: 30 minutes on two separate nights per stratification unit</li> <li>Nocturnal call playback: At least one playback on each of two separate nights</li> <li>Night watercourse search: Two hours per 200m of water body edge</li> </ul> <p>DECC 2009:</p> <ul style="list-style-type: none"> <li>Combination of tadpole surveys, call surveys and active searching both during the day and night</li> <li>Small areas of habitat (less than 0.3 hectares) should be surveyed for a minimum of one hour on three separate occasions during the species' activity period</li> </ul>	<p>Call back and active search (night time spotlight) were conducted for:</p> <ul style="list-style-type: none"> <li>Three nights at three locations</li> <li>Two nights at one location.</li> </ul> <p>Searches were conducted in the study area for an average of 45 minutes per night.</p> <p>Searches were conducted at the reference site for an average of 17.5 minutes per night.</p> <p>Total search time was 169min.</p> <p>All searches conducted within a three days of rainfall.</p> <p>Active daytime searches were conducted in conjunction with daytime bird surveys</p>
Bats	<p>DEC 2004:</p> <p>Effort per 100 ha of preferred habitat (October to March) utilising technique assessed to be most appropriate:</p> <ul style="list-style-type: none"> <li>Ultrasonic call recording: Two sound activated recording devices utilised for the entire night for two nights.</li> </ul>	<p>Ultrasonic call recording (Anabat) surveys conducted for:</p> <ul style="list-style-type: none"> <li>One night at three locations; 1800 to 0600</li> <li>One night at four locations (three new); ~1hour between 1930 and 2100</li> </ul> <p>Preferred habitat (mangrove) surveyed at three locations for one entire night, and at one location for one hour on a separate night.</p>
Migratory birds	<p>DEC 2004:</p> <p>Methodology has not been resolved as yet but it is likely that a species-time curve approach should be utilized for surveying diurnal birds. In addition:</p> <ul style="list-style-type: none"> <li>Wetland census: One hour at dawn or dusk, for each identified wetland</li> <li>Water source census: A 20-minute census at dawn or dusk, for each identified water source.</li> </ul>	<p>Targeted bird surveys were conducted during nine days over 12 weeks and included 15 sessions, 30 min per session</p> <p>Surveys were conducted from a fixed location and timed to coincide with high and low tides rather than dawn and dusk (which represents better viewing time for migratory waders).</p> <p>Opportunistic surveys conducted on nine different days over 865 minutes during a range of tidal and weather conditions</p>