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Fiona Stanley Hospital Project

**Response to Public Submissions
on Preliminary Documentation for
Assessment under EPBC Act**

Prepared for
Department of Health
by Strategen

May 2008

Fiona Stanley Hospital Project

Response to Public Submissions on
Preliminary Documentation for
Assessment under EPBC Act

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1. INTRODUCTION

The Fiona Stanley Hospital Project (FSHP) development proposal (the proposed action) consists of the development of an area of land (the Project Area) for the construction of the Fiona Stanley Hospital and Health Precinct (FSHHP). The proposed action includes clearing and site preparation, relocation of topsoil and vegetative material off-site for rehabilitation projects in the nearby Beeliar Regional Park, construction of associated roads and hospital buildings, and the installation of services.

The proposed action was referred to the Department of the Environment, Water, Heritage and the Arts (DEWHA) for determination on whether there was a potential for significant impact on a Matter of National Environmental Significance (NES), therefore being a Controlled Action, and requiring assessment and approval under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The proposed action was referred because the bushland in the Project Area, 25ha of which will be cleared, is known to be frequented by Carnaby's Black Cockatoo *Calyptrorhynchus latirostris*, for feeding habitat.

On 18 February 2008, the DEWHA advised that it had determined that the proposed action is a Controlled Action and will need to be assessed through Preliminary Documentation. The DEWHA subsequently requested additional information in relation to potential impacts of the proposed action. In particular, DEWHA was concerned about indirect impacts to a population of Grand Spider Orchid (*Caladenia huegelii*) located at the Beckley Bushland site nearby. It was postulated that the proposed action may affect wasp pollinators, which are required by the Grand Spider Orchid to reproduce. The proponent prepared a document addressing the request for additional information made by DEWHA relating to the issue of potential impacts on the Beckley Bushland Grand Spider Orchid population which was submitted in March 2008.

The original referral documentation and the additional information were made available to the public on 14 March 2008 after which followed a four week public review and comment period. Public submissions on the documentation were received up to 14 April 2008. In all, eight submissions were received; being from the Urban Bushland Council of Western Australia, the Friends of Ken Hurst Park, the Friends of Murdoch Bushland and five individuals whose number included two lecturers and a student of the adjacent Murdoch University and Challenger TAFE.

2. PURPOSE OF DOCUMENT

This report is a summary of the public submissions made on the FSHP that related to Matters of NES and of the project's responses to these public submissions. The response document complies with requirements of the Assessment on Preliminary Documentation process under the EPBC Act. Issues or concerns raised that clearly do not relate to Matters of NES have not been included or responded to in this document but are being considered by the project under separate processes wherever possible.

3. OTHER RELATED DOCUMENTATION

The following other documents submitted to the DEWHA, together with this document, form the Preliminary Documentation for the assessment of the FSHP:

- *Fiona Stanley Hospital Project – Referral of Proposed Action;*
- *Fiona Stanley Hospital Project - Further information required for Assessment by Preliminary Documentation under the EPBC Act (Strategen 2008b); and*
- *Fiona Stanley Hospital Project – Provision of Additional Information.*

4. KEY ISSUES RAISED AND RESPONSES

The following are the key issues raised in the public submissions (i.e. those relating to Matters of NES). A general response to each key issue has been provided. Section 5 provides a complete breakdown of all relevant comments made and an individual response to each.

4.1 ALTERNATIVE SITES

That the site was set aside historically for a hospital does not mean that it is the best site. Other sites nearby could be just as suitable if not better.

The referral documentation states that the decision to introduce a hospital and a university in the Murdoch area was first officially considered by the then Town Planning Department in 1968. This intent is still reflected in the zoning of the Project Area as ‘Public Purposes’ (Hospital) under both the Metropolitan Region Scheme and the local government (City of Melville) Town Planning Scheme. These statements were not intended to suggest that the appropriate zoning of the land provides the only justification for proceeding with the proposed action at this site, but is put forward to explain the background to regional planning, which includes a hospital at this location.

No other suitable site that satisfies the criteria for a southern tertiary hospital has been identified that is:

- of suitable size (in excess of 20ha);
- as well located to service the health needs of the southern metropolitan area; and
- as well suitably serviced by transport infrastructure.

The Project Area meets these requirements as it:

- provides adequate space for the development of the Hospital; allows for related health facilities to be co-located within the Project Area; and enables a hospital replacement strategy to be implemented on the same Project Area in 30 to 50 years time (a crucial part of modern major health facility planning);
- is located in the heart of the rapidly growing southern metropolitan population corridor (while still being closely located to the existing major population concentration immediately to the north of the Project Area);
- is located adjacent or close to the major vehicular transportation routes (these being the Kwinana Freeway which is the major north/south traffic route of the Perth south metropolitan

area, and the Roe Highway which provides excellent connections to the eastern suburbs of Perth);

- is located immediately adjacent a major bus/rail interchange on the Perth to Mandurah rail line; and
- is in close proximity to Jandakot airport (for major trauma and other emergencies from outside the metropolitan area).

In addition to the above, the Project Area is also:

- located immediately adjacent to a significant private hospital (St John of God Hospital Murdoch), which will maximise the synergies between the private and public health systems and allow for the potential sharing of health facilities and/or services; and
- is located near existing education infrastructure including Murdoch University and Challenger TAFE, which will assist in facilitating potential partnerships and educational synergies.

Suggested site on Bibra Drive, Bibra Lake

The Friends of Ken Hurst Park have suggested that a site bounded by Farrington Rd, Bibra Drive, Hope Road and Baker Court in Bibra Lake, to the south of the proposed Project Area, would be suitable for the FSH and appears to satisfy many of the required criteria.

In response to this submission, the project has undertaken a due diligence of Lots 51, 393, and 551 Bibra Drive, Bibra Lake, which is land described by the submitter (refer to Appendix 1). The due diligence has found that the land has numerous encumbrances that affect suitability of the land. These are:

- existing leasing agreements for Lot 551 between the Metropolitan Regional Planning Authority, Leeming-Lakeside Baptist Church and City of Cockburn which run to 2011, with an option to extent for further 24 years and 11 months;
- two caveats over Lot 551;
- three sewer easements traversing the properties;
- two overhead high voltage power transmission lines (330KV and 132KV);
- a public road running dissecting the properties (Bibra Drive);
- an existing school on site (Bluegum Montessori School); and
- an existing and operating recreation centre (Lakeside Recreation Centre).

Lot 51, which is located between Lots 551 and 393 does not have any improvements, however the land has been reserved for a future highway. The highway would run through the middle of the site, eliminating also Lot 393 to the south from use.

If using the assumption that it was possible to acquire this land, the total area available is still only 11.25 ha and is insufficient for the project needs. In addition to this there are particular health related restrictions regarding the construction of health facilities within close proximity to high voltage power transmission lines due to the possible effects of Electromagnetic Fields (EMF).

Suggested site at Casuarina, Town of Kwinana

Another submitter suggested government land in the Kwinana area that was affected by a bushfire in the summer of 2007/08. The land in question is in the suburb of Casuarina and is an C Class Reserve under the management of the Department of Corrections and is immediately adjacent to a high

security prison (Casuarina Prison). This parcel of land is not available to the project primarily because it is a designated Bush Forever Protection Area, consisting of Jarrah-Banksia woodland and two wetlands; one of high conservation significance. In addition, the site is within a semi-rural setting approximately 35km south of the Central Business District (CBD) and 20kms further south than the proposed FSH site in Murdoch. This area does not have many of the advantages the proposed FSH site possesses in terms of its location within a densely populated area (hospital catchment area), public transport infrastructure, co-location with a large private hospital (for health related synergies), and close proximity to Jandakot Airport (for regional medical emergencies requiring air transport).

4.2 SCALE OF CLEARING

There is concern that the clearing footprint for the site is almost the entire area when the hospital only covers 12ha. Too much clearing for infrastructure such as car parks and roads. Clearing has not been 'minimised'.

While it may be the case the core hospital building footprint is approximately 12 hectares, this building cannot function or operate effectively in isolation. The proposed FSH is a tertiary hospital facility that sits within a 'health precinct', which consists of the core Hospital building, research and educational facilities, central plant / services, car parking, administration and clinical consultation buildings, short-term accommodation, and ancillary services such as St John Ambulance which are all required for an efficient tertiary facility to function. The proposed clearing footprint is required to accommodate all these components for the project to 'work' as a tertiary facility. The facility's design ensures the Project Area has sufficient area to accommodate the future needs for an on-site hospital replacement strategy to be implemented in 30 to 50 years time (a crucial part of modern major health facility planning). Equally, car parks are an essential requirement of the FSHP. Although the use of public transport is being encouraged, and is facilitated by the co-location with the Murdoch (South Street) Bus / Rail Interchange, for a hospital to be accessible, there must be sufficient car parks for patients and visitors who are not able to ride bikes, or catch buses or trains. A combination of 'at grade' and 'decked' car parking facilities will be constructed. In the future, new hospital buildings are likely to be constructed over the at grade car parks.

The clearing footprint has been extensively reviewed many times in consideration of absolute land requirements. The original Clearing Permit 1773/1 allowed for up to 30ha to be cleared for the purpose of the development of the Fiona Stanley Hospital. The clearing footprint has since been reduced to up to 25ha as detailed in the amended Clearing Permit 1773/2. In addition, due to the recent study that found a portion of the proposed Southern Conservation Area was dieback infected, the project undertook a further review of its requirements and have been able to avoid the dieback infected area by rationalising the proposed road network allowing the Southern Conservation Area to be moved eastwards.

4.3 CUMULATIVE IMPACT ON CARNABY'S BLACK COCKATOO

Submissions raised that continual clearing of Carnaby's Black Cockatoo feeding habitat on Swan Coastal Plain is of major concern and therefore the impact of this proposal is significant. There is widespread concern about cumulative loss of feeding habitat in the region and habitat fragmentation leading to long term decline in the Carnaby's Black Cockatoos.

The referral documentation recognises the concern of the cumulative impact of clearing. The FSHP does not believe the clearing of the Project Area alone will significantly affect the species but that the

issue of cumulative impact must be addressed. The proposed mitigation strategy is based on measures addressing the cumulative impact of this clearing, by providing **no net loss** in available habitat in the local area in the longer term, and providing additional direct and indirect mitigation measures for the species. These measures involve:

- Onsite:
 - minimising the effect of onsite clearing where possible;
 - the retention of two Conservation Areas; and
 - appropriate landscaping with species suitable for Carnaby's Black Cockatoo feeding.
- Offsite:
 - immediately protecting an area of breeding habitat for the species in the wheatbelt;
 - the restoration / rehabilitation of a similar size area of habitat in the Beeliar Regional Park on the Swan Coastal Plain;
 - supporting 'contributing' offsets, such as funding for wildlife care and financial initiatives to increase community involvement in habitat restoration; and
 - research projects which will increase knowledge on the species to improve future decisions on clearing proposals.

The intended outcome of this mitigation strategy is for there to be a net benefit to the species as a result of this project.

The project acknowledges that clearing of Carnaby's Black Cockatoo habitat is of high importance, and this is demonstrated by the breadth and resources involved in off-site mitigation commitments, to be implemented under the framework established by the Memorandum of Understanding (MOU) between the Department of Environment and Conservation (DEC), Department of Housing and Works (DHW), and Department of Health (DoH) (refer to Appendix 2).

4.4 AVAILABILITY OF DATA ON CARNABY'S BLACK COCKATOO FOR IMPACT PREDICTION

There is not enough research or data on Carnaby's Black Cockatoo to make reliable predictions.

There is currently insufficient data to make a quantitative assessment of the scale and significance of the impact of clearing on the Swan Coastal Plain to the Carnaby's Black Cockatoo. The assessment of the proposed actions impact against the EPBC Act Policy Statement 1.1 (Significant Impact Guidelines) in Table 5 of the Referral Documentation is based on a desktop review of available information, interviews, and a qualitative assessment of the scale of clearing compared to available habitat to the species. The precautionary principle has therefore been applied in this case. The substantial commitment made by the project to off-site mitigation, including land acquisition, rehabilitation, research and other conservation initiatives, is in light of the difficulty in quantitatively being able to determine that the action will not have a significant impact on the species. The intention of the mitigation strategy is to have a net benefit for the species over the longer term.

The research program being funded as part of the off-site mitigation will allow for the future identification of the critical habitat requirements for the Carnaby's Black Cockatoo. This program, the scope of which has been prepared by DEC, will ultimately assist with the assessment of future developments that may affect Carnaby's Black Cockatoo habitat. The research may also aid sensitive urban development and appropriate planning for areas known to contain Carnaby's Black Cockatoo habitat, thus ensuring the long-term survival of the species in the region. The species will therefore benefit from this work and initiative.

4.5 USE OF SITE BY RAINBOW BEE-EATERS

The site is used for breeding by the Rainbow Bee-eaters.

Rainbow Bee-eaters have been identified using an area of the site for nesting. The proposed action is not likely to have a significant impact on this species or its habitat. Only one pair of Rainbow Bee-eaters was observed during the 2006 fauna survey, and although others could potentially have been present yet not recorded, the Project Area is not considered to be a key habitat for this migratory species. This is supported by what is known of the species and its distribution and habitat needs in the metropolitan area (adapted from Department of Environment and Water Resources 2007):

- the species has a widespread distribution and a variety of habitats that it has been recorded in across Australia;
- although not properly estimated, the total population size of the species is assumed to be reasonably large, based on reporting rates for the species (i.e. the Atlas of Australian Birds has received more than 30,000 records of the Rainbow Bee-eater since 1998);
- the mobility of the species suggests that it is unlikely that any local or regional population would be genetically isolated from the remainder of the Australian population;
- although trends in the extent of occurrence have not been quantified, records indicate that the distribution of the species (and, hence, the extent of occurrence) has expanded in south-western Australia. The Rainbow Bee-eater was rare around Perth during the 19th century, and was recorded only infrequently before the 1920s. However, the bird had begun to visit Perth regularly and in larger numbers by the late 1970s, and it colonised Rottnest Island in 1977; and
- historical disturbance does not represent a major issue to this species and it is common in cleared and semi-cleared habitats.

The proposed action's clearing footprint is unlikely to have a significant impact on the Rainbow Bee-eater given the available habitat for the species and the fact that its extent of occurrence and area of occupancy is possibly increasing in the region, not declining.

The areas of highest potential use by the species will be enhanced through the reconstruction of the artificial lake to the north of the Southern Conservation Area, which is to be used as a stormwater infiltration basin, and the establishment of denser stands of vegetation (propagated from seed collected on-site) around the basin. These and plantings of local wetland species within the basin will provide habitat for Rainbow Bee-eaters and other species.

4.6 LACK OF RESEARCH AND POTENTIAL IMPACT ON GRAND SPIDER ORCHID POLLINATOR

There is a lack of research and understanding of the wasp pollinator for Caladenia heugeli and we cannot be sure clearing will not threaten the survival of remaining populations of the orchid.

As detailed in the document addressing the request for additional information made by DEWHA in regard to this issue (*Further information required for EPBC referral*, Strategen 2008), it is not immediately possible to assess whether the Thynnine wasp pollinator for the Grand Spider Orchid exists in the Project Area. The actual species as yet is unknown and has not been trapped and identified anywhere to date. Consequently, in assessing the potential for an indirect impact to the Grand Spider Orchid, the FSHP has assumed the wasp species may be present and evaluated the

potential for recorded individuals of the orchid to be reliant on wasps from the Project Area for procreation.

The nearest known Grand Spider Orchid population is more than 280 m away in the Beckley Bushland on the eastern side of the Kwinana Freeway South Street Interchange. No individuals have been found in the Project Area. As described in Section 4.5 of Strategen (2008), a study of Peakall (1990) provides some insight into the travel distances that could be expected for orchid pollinating wasps in the wild. In this study, males of the wasp species *Zaspilothynnus trilobatus* were marked and recaptured as they were searching for females or labellum decoys of the orchid *Drakaea glyptodon*. The males were found to travel up to 132 metres with a mean of 32 metres in their search for females. It has been concluded that even if the wasp pollinator did exist on site, it is unlikely that it would travel to the Beckley Bushland from the FSH Project Area. On this basis, the potential for the clearing to affect individuals of the Grand Spider Orchid through removing habitat of pollinating wasps is very low. The DEC has undertaken a peer review of this assessment and concurred that “the pollinating wasps could exist in the Project Area, but are unlikely to be still associated with the Beckley Bushland” (K Atkins, DEC, pers. comm. 30 April 2008). This is because “of the impediments relating to the current distance of cleared land that separates the sites which appear most likely to be too great for the wasp to traverse, would prevent pheromone transfer between the sites and hence no attraction to embark on such a flight, and would cause overheating of any wasp that did attempt to do so” (K Atkins, DEC, pers. comm. 30 April 2008).

The project has provided for the retention of a similar sized area of vegetation to that of the Beckley Bushland at its closest point. DEC has provided advice, “while the question cannot be answered definitively, with existing knowledge, the proposed retention of the Conservation Area in the north east section of the Project Area would appear to be the most appropriate location in terms of vegetation, topography, and proximity to Beckley Bushland if the wasp was present in the area, and was to be maintained as a potential source for pollination of *Caladenia huegelii* in Beckley Bushland” (K Atkins, DEC, pers. comm. 30 April 2008).

Refer to Appendix 3 for the full peer review report of Dr Ken Atkins, Manager of Species and Communities Branch, DEC.

4.7 ROLE OF ON-SITE LANDSCAPING IN MITIGATION

The proposed on-site offsets only replace a small fraction of the feeding habitat for the Carnaby’s Black Cockatoo, particularly the roof top gardens, landscaping, greenways and nest boxes and rehabilitation within the conservation areas will add little to the habitat value of the Project Area. Measures are insubstantial compared to the scale of clearing.

The management measures applied in the design of the FSHP site layout and landscaping plan, and to be implemented during and following development of the precinct, are to maximise the potential for the Project Area to continue to be utilised by Carnaby’s Black-Cockatoo during and following development.

As detailed in the referral documentation, the mitigation strategy is to initially address the potential loss of on-site values for Carnaby’s Black Cockatoo through retention of 3ha of high value woodland within the FSH Project Area (including at least 50 percent of the tall Marris of the site) and on-site landscaping using plant species able to be used by the Carnaby’s Black Cockatoo. In particular, the proposed landscaped greenways (see Figure 10 in EPBC Act Referral document), will include Marri

and Banksia trees, while streetscapes and plazas will include other species suitable for the Carnaby's Black Cockatoo.

The Carnaby's Black Cockatoo Management Plan submitted as part of the referral documentation includes targets for use of native plants in each of the three categories of open space, and within that, targets for use of species that are found currently on site (see Table 1 below). These targets have been further developed to increase the number of native species that can be used that are not found naturally on site but may provide a suitable food source for Carnaby's Black Cockatoo, consistent with the strategy as described above. The intention of the project in regard to lawns/turf has also been clarified.

The Carnaby's Black Cockatoo is a highly adaptable species, demonstrated by its known use of planted pines and other exotic trees with nuts (e.g. Macadamia trees). The measures described are intended to maintain suitable trees on site, so they will still frequent the area.

It is acknowledged that the on-site measures cannot fully mitigate the potential impact to Carnaby's Black Cockatoo on their own. It is for this reason, off-site mitigation, including direct offsets such as the acquisition of valuable breeding and foraging habitat to the species in the wheatbelt and rehabilitation of woodland in nearby Beeliar Regional Park. Contributing offsets, such as research and conservation initiatives, are proposed to address the issue of the net loss in habitat value on site.

There will be a monitoring program through to the completion of development in late 2013 to examine the Carnaby's Black-Cockatoo use of the Project Area, surrounding vegetation remnants and areas of off-site rehabilitation. This will be in the form of a bird census by a qualified zoologist three times a year as well as opportunistic sightings by trained on-site personnel as part of regular site inspections and audits.

Table 1 Landscaping targets for Carnaby's Black Cockatoo foraging

Area	Original referral target	Revised target *
Greenways	Planted with 100 percent native species, with 100 percent of tree species and 70 percent of understorey species being those found in Project Area	Planted with 100 percent native species, with 100 percent of the total number of trees planted and 70 percent of the understorey cover ¹ being species those found in Project Area or are native species suitable for Carnaby's Black Cockatoo
Streetscapes	Planted with 100 percent native species, with 70 percent of tree species and 50 percent of understorey species being those found in Project Area	Planted with 100 percent native species, with 70 percent of trees planted being species found in Project Area or are native species suitable for Carnaby's Black Cockatoo
Other areas of open space within FSH, including urban plazas, internal gardens, and roof gardens	Planted with 70 percent native species, with 60 percent of tree species and 50 percent of understorey species being those found in Project Area	Planted with 70 percent native species, with 60 percent of trees planted and 50 percent of understorey cover being species found in Project Area or are native species suitable for Carnaby's Black Cockatoo. Non-natives species will be selected in consideration of potential suitability for additional food source in these areas (e.g. Macadamia trees)

* In all cases, the targets exclude areas of turf and paving. Turf areas are required to perform other functions in some areas e.g. drainage, passive recreation. Note, suitable trees for Carnaby's Black Cockatoo such as Marri's can still be planted in these turf or paved areas.

4.8 SIZE AND LOCATION OF CONSERVATION AREAS

Although general support for conservation areas, 10% of Project Area is too small, and does not include good condition dampland, the Banksias of which are of high value to Carnaby's Black Cockatoo.

The footprint for the FSH Project has been reduced to the minimum possible for the effective establishment and efficient operation of a tertiary health facility. The clearing footprint has been extensively reviewed many times in consideration of absolute land requirements.

The proposed northern and southern Conservation Areas support Marri and Banksia woodland, both high value foraging habitat for the Carnaby's Black Cockatoo, and are excellent and very good condition respectively as per the Keighery condition rating scale. The *Melaleuca preissiana/Banksia littoralis* dampland contains impressive tall stands of these trees however was not selected because it contains a much higher number of weeds in its understorey and the Melaleucas are not known high value feed for the Carnaby's Black Cockatoos. Although the dampland will be cleared, the project is committed to planting seedlings of *Melaleuca preissiana* and *Banksia littoralis* in a recreated dampland area as part of the enhancement of the artificial lake to the north of the southern Conservation Area, which is to be used as both a key landscape feature and a stormwater detention basin.

The mature Banksias and Marris in the proposed Conservation Areas are representative of the highest value areas for Carnaby's Black Cockatoo in the Project Area.

4.9 ROLE OF OFF-SITE MITIGATION MEASURES

Proposed off-site offsets, such as rehabilitation, are commendable but they will take a long time to mature and there is no guarantee that the Carnaby's Black Cockatoos will utilise the different sites.

The immediate impact on the species of clearing feeding habitat in the Project Area will be reduced through on-site retention of key areas of vegetation and developing the project in stages to reduce the immediate impact of clearing at any one time.

Carnaby's Black Cockatoo is a highly adaptable species, demonstrated by its known use of planted pines and other exotic trees with nuts (e.g. Macadamia trees) across the urbanised environment of the Perth Metropolitan Region. There is every reason to expect they will use planted trees in greenways for foraging if they are the appropriate species. This likelihood is increased by the retention of 3ha bushland within the Project Area and existence of adjacent bushland with foraging habitat value. The provision of corridors/linkages between bushland remnants is beneficial to the species as 'stepping stones' across the Project Area and wider region.

In regards to rehabilitation, Carnaby's Black Cockatoos are already known to visit areas adjacent to proposed rehabilitation areas in Beeliar Regional Park. There is no reason not to expect they will use rehabilitated areas over time.

Measures described in Memorandum of Understanding (MOU) do not 'avoid or reduce impacts', but mostly refer to another site and are unenforceable.

The MOU is intended to demonstrate the commitment of the FSHP to the environmental initiatives and outline the support and resources of three state government agencies. It is an administrative

document that seeks to ensure mutually beneficial working arrangements and to clarify the relationship between the Department of Health (DoH), Department of Housing and Works (DHW) and Department of Environment and Conservation (DEC), in view of DEC's responsibilities for conservation and land management in Western Australia. These initiatives have the objective of ensuring that the FSHHP site is planned and developed in the most environmentally sensitive way possible, while maintaining biodiversity and promoting a co-operative approach to the protection and management of the environment on the Swan Coastal Plain.

The MOU addresses both on-site and off-site management initiatives.

Efforts to avoid and minimise the on-site impact have already been implemented in planning by reducing the clearing footprint, designating two Conservation Areas and including plant species suitable for Carnaby's Black Cockatoo feeding in landscaping plans. The DEC will provide advice to DHW and DoH on the appropriateness of proposed management for the retained Conservation Areas and the landscaping plans.

The off-site initiatives described in the MOU including direct offsets such as the acquisition of valuable habitat to the species in the wheatbelt and rehabilitation of woodland in nearby Beeliar Regional Park, and contributing offsets such as research and conservation initiatives, are intended to address the issue of the cumulative impact to the species through on-going clearing on the Swan Coastal Plain.

Financial initiatives of the MOU only indirectly benefit the Carnaby's Black Cockatoos.

The financial initiatives being provided for are substantial. They include those providing direct benefits such as acquisition of Carnaby's Black Cockatoo habitat in the wheatbelt for conservation purposes and rehabilitation of habitat in Beeliar Regional Park. Other indirect benefits come from funding to assist wildlife rehabilitation, which has the potential to save the lives of injured birds that may then mature to breeding capability, and financial initiatives for community groups to become involved in habitat restoration for the species.

In summary, the major environmental management and conservation initiatives to be delivered under the MOU (Key Outcomes) are:

1. on-site mitigation and conservation measures to be undertaken as part of the development of the FSHHP (funded by DoH at an estimated cost in excess of \$5,000,000);
2. rehabilitation of land in the Beeliar Regional Park (DoH to provide funding of \$750,000 and DEC to provide resources, including in-kind contributions, totalling \$750,000);
3. research into Carnaby's Black Cockatoo (DoH to provide funding of \$275,000);
4. community participation in conservation programs (DoH to provide funding of \$575,000); and
5. securing additional habitat for Carnaby's Black Cockatoo (DoH to provide funding of \$250,000).

5. COLLATION OF ALL RELEVANT PUBLIC COMMENTS AND RESPONSES

The following is a collation of the relevant comments made in submissions followed by an individual response to each (Table 2).

Table 2 Responses to comments made in public submissions relating to Matters of NES

Statement (adapted from original submission)	Issue	Response
Submission 1		
1. Will the offsets provided, namely the purchasing of 25ha of land for conservation, contain comparable levels of biodiversity and be recognised feeding grounds for Carnaby's Black Cockatoos as this site is?	Quality of offsets	<p>The purchase of 25ha of land in the wheatbelt is for the offsetting of potential impact to the Carnaby's Black Cockatoo, not to biodiversity in general. The land to be purchased in the wheatbelt is important feeding habitat for the Carnaby's Black Cockatoo, and can also support nesting trees for the species,</p> <p>Other mitigation measures, namely the use of topsoil and seed material from the FSH Project Area for the purpose of rehabilitation will contribute to maintaining regional biodiversity in the long term by restoring vegetation with many of the species currently found within the Project Area.</p>
2. Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia	Habitat for fauna	<p>The Project Area is known to be used by one Threatened fauna species listed under the EPBC Act, namely Carnaby's Black Cockatoo, which frequents the Project Area for feeding purposes. The Project Area is not a breeding site for these fauna as they are known to breed in the wheatbelt.</p> <p>The 2005 GHD field survey did not identify any evidence of any other EPBC listed fauna species within the Project Area.</p>
3. Due to the orchid rich nature of the site it is reasonable to suggest that the Thynnine wasp pollinator for the Grand Spider Orchid (<i>Caladenia huegelii</i>) inhabits the project site in large numbers. We can ascertain by the large numbers of orchids that require wasp pollination within the project area and their similarity to the Grand spider Orchid (<i>Caladenia huegelii</i>) that it is highly likely the pollinator for the Grand spider orchid inhabits the project site.	Grand Spider Orchid thynnine pollinator possibly inhabiting the project site. Considered rare in the Perth region	<p>No flora species listed under the EPBC Act or declared rare or priority species were identified within the Project Area during the 2005 field survey. A full flora survey and supplementary threatened flora survey were conducted in Spring 2005 and Spring 2007 respectively to ensure the Project Area had been subject to comprehensive searches for the Grand Spider Orchid. No evidence of the Grand Spider Orchid or any other listed threatened species was recorded during these surveys.</p> <p>In assessing the potential for indirect impact to the Grand Spider Orchid, the project has assumed the wasp species may be present and evaluated the potential for individuals of the orchid may be reliant on for procreation. It was found the potential for the clearing to affect individuals of the Grand Spider Orchid through removing habitat of pollinating wasps they are reliant is low. The DEC has peer reviewed this assessment and determined that the basis of this conclusion is sound (Refer to Section 4.6 and Appendix 2).</p>
4. Habitat fragmentation is the exact process that the clearing of the Fiona Stanley Hospital site will exacerbate thus potentially jeopardising the future of this wasp. Under the precautionary principle as applied to the "significant impact" wording in the EPBC act 1999 the clearing of the site is highly dubious and at least requires further scientific assessment. This point has been dismissed because of the distance between the Beckley population of <i>Caladenia huegelii</i> and the		<p>The closest roadside vegetation to the south of Beckley Bushland is 163m away (as can be measured from Figure 2 in the document titled Further information required for EPBC referral (Strategen 2008)), to the south of the eastern car park and freeway south on-ramp, and is straggly and in poor condition. The suggested possibility of wasps getting to Beckley Bushland by crossing further south would involve the wasps traversing first the Kwinana Freeway (approx. 80m wide reserve), through a narrow band of scattered trees and shrubs, and then across 163m of road and car</p>

Statement (adapted from original submission)	Issue	Response
project site but this distance does not examine the possibility of the wasps crossing the Kwinana Freeway further down and using roadside vegetation as shelter to move along the Freeway to access the Beckley site.		park. The total distance (> 280 m) and the open conditions would likely to be prohibitive for wasp movement based on available information on these types of wasp (Refer to Section 4.6 and Appendix 2).
5. It must be acknowledged at least that the clearing of this site (in reference to the wasp's inability to travel long distances) will cause the mortality of large numbers of potentially rare <i>Caladenia huegelii</i> wasp pollinators.		There is no method to assess the voracity of the claim that the clearing will result in mortality of large numbers of potentially rare <i>C. huegelii</i> wasp pollinators. As described in Response to Item 3 above, the FSH has assumed the wasp species may be present and evaluated the potential for known populations of the Grand Spider Orchid in Beckley Bushland to be dependent on them if they were present. The conclusion was even if this particular wasp was present; it would be unlikely to fly to Beckley Bushland (see Section 4.6).
6. Have surveys been done in other nearby areas including Murdoch University on the presence of <i>Caladenia huegelii</i> and to determine whether wasp pollinator distribution affects those orchid's ability to reproduce there?		The GHD (2005) flora survey included areas of bushland adjacent to the FSH Project Area, including areas immediately east of Challenger TAFE, and bushland south of Farrington Road (refer to Appendix 5 of EPBC Act Referral Document) and no populations of Grand Spider Orchid were found. Other areas of bushland nearby (within 200m) include Quenda Swamp, which does not support typical habitat for the Grand Spider Orchid, and the Kwinana Freeway reserve, which was surveyed as part of the South West Metropolitan Railway Project. Intact vegetation that may have the potential to support the Grand Spider Orchid in Murdoch University Bushland is approximately 450m from the FSH Project Area at its closest point. The Orchid has not been historically recorded in this bushland and even if present, it would be unlikely that it is dependent on pollinators from the FSH Project Area, based on available information (see Response to Item 3 above).
7. Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland. The two wetlands in question are Quenda wetland and melaleuca swamp. Both are protected wetlands and associated roads that are a part of this development will be built within 50 metres of the environmentally sensitive Melaleuca Swamp zone which is Ramsar listed as part of the Beelihar chain of wetlands. Clearing may alter the hydrological balance of the wetlands		The Melaleuca Swamp is a conservation category wetland, but is not part of a Ramsar listed wetland system. It is located within the Murdoch University campus and has other infrastructure such as an industrial laundry service, detention centre, public works depot, electrical sub-station, TAFE campus, fire station and police station between it and the Project Area. The nearest Ramsar wetland is Thomsons Lake, 6 km to the south of the Project Area.
8. Dense vegetation is not being retained around the artificial wetland to the detriment of the Rainbow Bee-eater (<i>Merops Ornatus</i>) inhabitants of the site which are a protected migratory species	Rainbow Bee-Eaters	The areas of highest potential use by the species will be enhanced through the redevelopment and expansion of the artificial lake to the north of the southern Conservation Area, and the establishment of denser stands of vegetation (propagated from seed collected on-site) around the basin. These and plantings of local wetland species within the basin will provide habitat for Rainbow Bee-eaters and other species. Historical disturbance does not represent a major issue to this species and it is common in cleared and semi-cleared habitats (Morris 1976, 1977; Wolstenholme 1925).
9. In relation to EPBC act 1999 "significant impacts" need to be more thoroughly considered using the precautionary principle, particularly with regard to removing large areas of known feeding ground of Carnaby's Black Cockatoo (<i>Calyptorhynchus latiostris</i>)	Carnaby's Black Cockatoo feeding area	The potential impact on the species due to the clearing of feeding habitat in the Project Area will be reduced through a combination of on-site retention of key areas of vegetation and the re-establishment of flora species that are a suitable food source for the Carnaby's Black Cockatoo in hospital landscaping and street scaping.

Statement (adapted from original submission)	Issue	Response
		<p>As detailed in the referral documentation, the mitigation strategy is to first address the potential loss of on-site values for Carnaby's Black Cockatoo is minimised through the retention of 3ha of high value woodland within the FSH Project Area and on-site landscaping using plant species suitable for use by the Carnaby's Black Cockatoo.</p> <p>Off-site mitigation, including direct offsets such as the acquisition of valuable habitat to the species in the wheatbelt and rehabilitation of woodland in nearby Beeliar Regional Park, and contributing offsets such as research and conservation initiatives, are to address the cumulative impact to the species through on-going clearing on the Swan Coastal Plain.</p>
<p>10. In the Government's referral of the proposed action it is stated that "the area is known to be visited by groups of Carnaby's Black-Cockatoo for feeding purposes". The project site is an established feeding ground for the Cockatoo and the clearing of this area will affect the recovery of this endangered species.</p>	<p>Carnaby's Black Cockatoo feeding area</p>	<p>The referral documentation recognises the site is used for feeding purposes. The on-site management measures are intended to ensure the Project Area can still be used by the species and the off-site mitigation measures to ensure the cumulative effect of this clearing does not significantly affect this species.</p>
<p>11. It is also stated in the GHD report (2007) that "The Project Area is also not adjacent to Tuart forest or woodland with tree hollows suitable for nesting. Male Carnaby's Black-Cockatoos will only travel a relatively short distance to bring food to females during the nesting period (approximately 1-2 kilometres) (Johnston & Kirby 2006)" (GHD 2007). This information is a direct contradiction to the information displayed by the Commonwealth Department of the Environment and Heritage threatened species online fact sheet which clearly states "Male Carnaby's Black-Cockatoos (<i>Calyptrorhynchus latirostris</i>) feed the female at her nest during the incubation period and fly over 12km to ensure she gets the food she needs during nesting" www.environment.gov.au/biodiversity/threatened/publications/black-cockatoo.html Such a large discrepancy between information sources does not hold well for the accurate assessment of "significant impacts" on this species as per the EPBC act 1999 by the WA Government. A much larger area needs to be researched in order to ascertain whether the site can be regarded as feeding – breeding habitat which is essential for the survival of this species.</p>	<p>Carnaby's Black Cockatoo feeding area</p>	<p>Carnaby's Black Cockatoos usually breed in the wheatbelt. After breeding, the cockatoos move to higher rainfall areas along the coast in search of food sources such as banksia and hakea heathlands. They do not naturally breed on the Swan Coastal Plain, however clearing in the wheatbelt has resulted in some changes to breeding behaviour.</p> <p>There are discrepancies between information regarding travelling distances of nesting Carnaby's Black Cockatoo and interpretation. By way of correction, the Johnston & Kirby 2006 study referred to suggests that feeding grounds within 2km of nesting trees should be of particular focus of efforts, it does not state that Carnaby's Black-Cockatoo do not travel further distances from nest trees for feeding.</p> <p>The on-site management measures are intended to ensure the Project Area can still be used by the species for feeding purposes.</p>
<p>12. The destruction of Carnaby's feeding habitat is an issue of high importance and is one of the reasons why the Commonwealth Department of the Environment, Water, Heritage and the Arts advised against similar land clearing in Jandakot (EPBC 2007/3599). It is important to note here that the Fiona Stanley project site is one quarter the size of the proposed Jandakot land clearing and contains vegetation of similar feeding importance. I would question whether this proposal would have been approved if the land was within Commonwealth jurisdiction and was for commercial development.</p>	<p>Carnaby's Black Cockatoo feeding area</p>	<p>The project agrees that any clearing of Carnaby's Black Cockatoo feeding habitat is of high importance and this is demonstrated by the breadth and resources involved in the on-site and off-site mitigation commitments, to be implemented under the framework established by the interagency MOU.</p>

Statement (adapted from original submission)	Issue	Response
Submission 2		
<p>13. Are we to seriously believe that destroying this species feeding habitat, (which includes areas of mature 30m high marri trees) can be off-set by scattered vegetation in streetscapes and rooftop gardens, vegetation which will take many years to reach maturity before it will meet the species feeding requirements? Is it even feasible to establish a banksia-marri woodland on a roof garden? Not surprisingly the effectiveness of such measures are not supported by any research, and I can only conclude that at best this is wishful thinking, and not a serious proposal intended to be a substitute for what is acknowledged as a Black-cockatoo feeding habitat. This is the only proposal put forward in the referral documents which directly address the impact clearing of this site will have on the Black-cockatoos.</p>	<p>Disappointed that most offsets occur off-site. Considers landscaping of the grounds and retention of small remnants is insufficient to offset the cleared vegetation.</p>	<p>The management measures being applied in the design of the FSHP site, and to be implemented during and following the development of the Hospital site, are to maximise the potential for the Project Area to continue to be utilised by Carnaby's Black-Cockatoo.</p> <p>As detailed in the referral documentation, the mitigation strategy is to first address the potential loss of on-site values for Carnaby's Black Cockatoo which is minimised through the retention of 3ha of high value woodland within the FSH Project Area ((including approximately 50 percent of the tall Marris on the site) and on-site landscaping using plant species suitable for use by the Carnaby's Black Cockatoo.</p> <p>Carnaby's Black Cockatoo is a highly adaptable species, demonstrated by its known use of planted pines and other exotic trees with nuts (e.g. Macadamia trees). The measures described are intended to maintain suitable trees on site, so that they will still frequent the Project Area.</p> <p>Off-site mitigation, including direct offsets such as the acquisition of valuable breeding habitat for the species in the wheatbelt and the rehabilitation of woodland in nearby Beeliar Regional Park, and contributing offsets such as research and conservation initiatives, are intended to address the overall net loss in habitat value of the Project Area.</p> <p>There will be a monitoring program through to the completion of development in late 2013 to examine the Carnaby's Black-Cockatoo use of the Project Area, surrounding vegetation remnants and areas of off-site rehabilitation. This will be in the form of a bird census by a qualified zoologist three times a year as well as opportunistic sightings by trained on-site personnel as part of regular site inspections and audits.</p>
<p>14. The other measures concern off-site proposals, such as the restoration of degraded habitat in the nearby Beeliar Regional National Park and acquiring alternative habitat in the wheatbelt. These measures while commendable are not relevant to the nature and extent the impact of the total destruction of the feeding habitat of this species.</p>		<p>The offset strategy is to address the residual impact after on-site retention and restoration efforts are exhausted and is consistent with the Commonwealth Draft Policy Statement 4.1 "Use of environmental offsets under the Environment Protection and Biodiversity Conservation Act 1999".</p>
<p>15. References to breeding habitat as an issue is not relevant as it is acknowledged that Black Cockatoos breed in the wheatbelt and only come down to the Swan Coastal Plain between January and July each year to get food and water for their new born.</p>	<p>Species do not breed on site</p>	<p>It is agreed that Carnaby's Black Cockatoos usually breed in the wheatbelt and, after breeding, move to higher rainfall areas along the coast in search of food sources. However, although they naturally may not have bred on the Swan Coastal Plain, broad scale clearing in the wheatbelt has resulted in some changes to breeding behaviour.</p>
<p>16. In respect to the other major issue raised, that of feeding habitat, it is acknowledged that the loss of feeding habitat is of concern for the species future. It therefore does not sit well for the proponent to surmise that it appears unlikely that the project alone could lead to a decrease in the size of the Carnaby's Black Cockatoo population. The comment that: 'given the scale of clearing compared to the extent of feeding habitat available to the species and the relative higher importance of larger areas of pine plantation on the CP it</p>	<p>Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population</p>	<p>The potential impact on the species of clearing feeding habitat in the Project Area will be reduced through a combination of on-site retention of key areas of vegetation and re-establishment of flora species suitable as a food source in hospital landscaping and street scaping.</p> <p>It is recognised that ongoing clearing is significant to the species. Off-site mitigation, including direct offsets such as the acquisition of valuable breeding habitat for the species in the wheatbelt and rehabilitation of woodland in nearby Beeliar Regional Park, and contributing offsets</p>

Statement (adapted from original submission)	Issue	Response
<p>seem unlikely the species will be significantly affected' This disregards the fact that the increase in urban development and loss of critical feeding habitat has forced this species to utilise roadside vegetation as a food source, and also runs counter to the proponents earlier comment that the 'cumulative effect of such clearing represents some uncertainty to the assessment'. The species has suffered a 50% population decline during the last 50 years, with the main reason attributed to loss of habitat in the wheatbelt and on the Swan Coastal Plain. In view of these facts, an area of 25ha represents a substantial loss of feeding habitat.</p>		<p>such as research and conservation initiatives, are intended to address the cumulative impact to the species through on-going clearing on the Swan Coastal Plain.</p>
<p>17. The Proponent's comment on the species mobility in moving between feeding habitat on the Swan Coastal Plain adds nothing to support its claims, as it is accepted that Carnaby's Black Cockatoos regularly travel long distances from the wheatbelt to the Swan Coastal Plain to feed.</p>	<p>Large travel distance of species</p>	<p>Noted.</p>
<p>18. The proponent's responses of 'appears unlikely but difficult to assess' to three significant impact criteria, while at the same time acknowledging the adverse impacts that clearing will have is a clear acknowledgment of the 'precautionary principle', yet continues to insist that there is no conflict between this and a development which will have a significant impact on a threatened species.</p>	<p>Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population</p>	<p>The precautionary principle has been applied in this case. The substantial commitment made by the project to off-site mitigation, including land acquisition, rehabilitation, research and other conservation initiatives, is in light of the difficulty in quantitatively being able to determine that the action will not have a significant impact on the species. The intention of the mitigation strategy is to have a net benefit on the species in the long term.</p>
<p>19. Use of nest boxes to "add value" on site is a fanciful proposal, as it is known that the species do not breed on the Swan Coastal Plain.</p>	<p>Species do not breed on site</p>	<p>Broad scale clearing in the wheatbelt has resulted in some changes to breeding behaviour. Carnaby's Black Cockatoo has been noted to have been increasingly observed nesting on the Swan Coastal Plain.</p>
<p>20. Weed and dieback management plans for 3ha of retained vegetation has minimal bearing on the greater fact of clearing 25ha of remnant bushland.</p>		<p>These management plans, as well as others addressing construction management, are intended to ensure the Conservation Areas are maintained to the highest standard and protected in the long term as a food source for Carnaby's Black Cockatoo.</p>
<p>21. An environmental induction program and education for staff is largely meaningless, as is a construction management process, as it is highly unlikely that, once construction begins, birds will continue to utilise the site.</p>	<p>Education does not replace cleared area</p>	<p>The Project Area will be cleared in stages and 3ha of bushland plus adjacent areas will remain throughout and following construction. Key contractor personnel will be trained in identifying Carnaby's Black Cockatoo for both monitoring and fauna care purposes. A summary of their conservation significance will be included in the training of all contractor personnel to assist with protection of the Carnaby's Black Cockatoo during construction activities.</p>
<p>22. While the proposal to rehabilitate degraded areas of that (Beeliar Regional Park) park are commendable, these measures will have little or no impact in creating an alternative feeding habitat. It will be many years before mature fruiting trees will establish, and no guarantee that Carnaby's Black Cockatoo will return to the area when that occurs.</p>	<p>Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population</p>	<p>The immediate impact on the species of clearing feeding habitat in the Project Area will be reduced through on-site retention of key areas of vegetation and developing the project in stages to reduce the immediate impact of clearing at any one time.</p> <p>In regards to the rehabilitation, Carnaby's Black Cockatoo is a highly adaptable species and is already known to visit areas adjacent to proposed rehabilitation areas in Beeliar Regional Park. There is no reason not to expect it will use rehabilitated areas over time.</p>

Statement (adapted from original submission)	Issue	Response
<p>23. The MOU is a puzzling document to have been put forward as a 'measure to avoid or reduce impacts'. The environmental and conservation initiatives are not measures aimed at the management and conservation of the project area, but of a different and aligned site.</p>	<p>Refers to management of the site</p>	<p>The MOU is intended to demonstrate the commitment of the FSHP to the environmental initiatives and outline the support and resources of three state government agencies. It is an administrative document that seeks to ensure mutually beneficial working arrangements and to clarify the relationship between the DoH, DHW and DEC, in view of DEC's responsibilities for conservation and land management in Western Australia. These initiatives have the objective of ensuring that the FSHHP site is planned and developed in the most environmentally sensitive way possible, while maintaining biodiversity and promoting a co-operative approach to the protection and management of the environment on the Swan Coastal</p> <p>The MOU addresses both on-site and off-site management (see Section 4.9)</p>
<p>24. While I understand the intention behind creating or rehabilitating habitat similar to that proposed to be cleared, I question why this has not been undertaken in the past under the (Beeliar Regional) Park) management plan, as the need must have been identified some time ago. Once again I point out that any revegetation will not provide a viable feeding habitat for many years to come.</p>	<p>Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population</p>	<p>Suitable physical and biological resources are required to undertake revegetation projects.</p> <p>The topsoil and plant material to be sourced from the Project Area provides an excellent opportunity to restore degraded areas in Beeliar Regional Park to a state that would not otherwise be able to achieve with traditional replanting efforts.</p>
<p>25. Financial initiatives set out in the MOU amount to some \$2,500,000. These initiatives will benefit a hodge-podge of recipients, and apart from the initiative of \$275,000 for research, will only benefit Carnaby's Black Cockatoo indirectly.</p>	<p>Offsets don't benefit Carnaby's Black Cockatoos</p>	<p>Initiatives will deliver direct benefits through the acquisition of habitat for conservation and rehabilitation of habitat. Other indirect benefits come from the funding to assist wildlife rehabilitation have the potential to save the lives of injured birds, which may then mature to breeding capability, and financial initiatives for community groups to become involved in habitat restoration for the species.</p>
<p>26. Even that initiative is flawed as there has already been extensive research on Carnaby's Black Cockatoos. DEC's library lists 25 research papers and articles, which includes a thesis of 371 pages and numerous reports ranging from 25 to 71 pages in length. A cynical but realistic view suggests that any further research can only be on the impacts of further clearing of their habitat.</p>	<p>Offsets don't benefit Carnaby's Black Cockatoos</p>	<p>Currently there is conflicting research results and insufficient data regarding the Carnaby's Black Cockatoo. DEC has advised that key information to allow for conservation planning for the species in this rapidly developing region is not available. The proposed research will allow for identification of the critical habitat requirements that will allow for sensitive urban development and appropriate planning for areas, thus ensuring the long-term survival of the species in the region. The research will also support the Commonwealth in its decision-making processes when development proposals are referred to the DEWHA for determination as to whether those developments constitute significant actions.</p>
<p>27. The predominant measure of the long-term upgrade of a nearby regional national park cannot cloud the fact that there are no immediate measures put forward which avoid or reduce the immediate impact this project will have on the feeding habitat of a threatened species. To assist this species after they have been driven from their habitat, whether that be by research, conservation projects or rehabilitating birds injured while feeding on roadside vegetation, is not an acceptable measure or one which meets the prescribed criteria.</p>	<p>Does not meet prescribed criteria</p>	<p>The management measures being applied in the design of the FSHP site, and to be implemented during and following development of the Hospital site, are to maximise the potential for the Project Area to continue to be utilised by Carnaby's Black-Cockatoo during and following development. There will also be an ongoing monitoring program to examine Carnaby's Black-Cockatoo use of the Project Area, surrounding vegetation remnants and areas of off-site rehabilitation.</p> <p>The offset strategy to address residual impact after on-site retention and restoration efforts are exhausted is consistent with the Commonwealth Draft Policy Statement 4.1: Use of environmental offsets under the Environment Protection and Biodiversity Conservation Act 1999.</p>

Statement (adapted from original submission)	Issue	Response
<p>28. As the agreement is not a legally binding document none of the proposals are enforceable. Is the purpose of the MOU merely an exercise in public relations or an expression of good intent, which carries no guarantee that the initiatives will be carried out? Or is its purpose to persuade the Department of Environment and Water Resources (the department) to approve the project? Or even an indirect invitation to the Department to set conditions in terms of the initiatives when approving the project. I submit that the MOU be either discounted, or alternatively given little weight, on the basis that it is an expression of intent only, is unenforceable and therefore carries no guarantee that the initiatives will be carried out. It is not a measure that avoids or reduces the impacts of the proposed action.</p>	<p>Off-sets No guarantee initiatives will be carried out</p>	<p>See Response to Item 23.</p>
<p>29. The fact that the site has been earmarked for a hospital since the 1960's is not justification for proceeding with this development.</p>	<p>Prefers alternative site</p>	<p>It is not suggested that the appropriate zoning of the land provides justification, only background into the planning for this site but is put forward to explain the background to regional planning, which includes a hospital at this location. No other suitable site that satisfies the criteria for a southern tertiary hospital has been identified that is:</p> <ul style="list-style-type: none"> - of suitable size (in excess of 20ha) - well located to service the health needs of the southern metropolitan area, and - suitably serviced by transport infrastructure. <p>Section 4.1 addresses site selection further.</p>
<p>30. It is difficult to understand how any of the proposals put forward by the proponent in mitigation are relevant to the criteria under the Act. I note that the proponent has not put forward any proposal to either retain a greater area of remnant bushland, particularly those areas in excellent condition which contain marri woodland utilised by Carnaby's Black Cockatoo, or revised the project infrastructure to exclude non-essential developments. Or even to apply principles of sustainable development such as an underground car-park or a multistorey car-park.</p>	<p>Questions "minimising clearing"</p>	<p>The offset strategy will address the residual impact after on-site retention and restoration efforts are exhausted and is consistent with the Commonwealth Draft Policy Statement 4.1: Use of environmental offsets under the Environment Protection and Biodiversity Conservation Act 1999.</p> <p>The original Clearing Permit allowed for up to 30-ha to be cleared for the purpose of the development of the Fiona Stanley Hospital. This has since been reduced to 25ha.</p> <p>The proposed northern Conservation Area includes almost all of the area of Marri woodland in excellent condition in the north-east corner of the Project Area.</p> <p>The required footprint of the project has been reviewed many times in consideration of absolute land requirements. The proposed southern Conservation Area has been recently shifted, requiring the deletion of two planned roads, to avoid a recently found dieback infected area.</p> <p>Sustainability principles are incorporated into project planning, which includes minimisation of footprint. The first stage of the development includes basement car parking bays and decked car parking bays.</p>

Statement (adapted from original submission)	Issue	Response
<p>31. The small area involved in this project predicated an 'all or nothing' outcome under the EPBC Act, particularly since on-site mitigation measures are flawed and contain no credible proposals to mitigate against the impacts on a threatened species or threatened ecological community. In fact, the denial by the proponents in the documentation that the project will have little or no impact on a threatened species or community is used as justification for not adopting any mitigation measures.</p>	<p>Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population. Off-sets insufficient.</p>	<p>The management measures being applied in the design of the FSHP site layout, and to be implemented during and following the development of the Hospital site, are to maximise the potential for the Project Area to continue to be utilised by Carnaby's Black-Cockatoo during and following development. There will also be an ongoing monitoring program to examine Carnaby's Black-Cockatoo use of the Project Area, surrounding vegetation remnants and areas of off-site rehabilitation.</p> <p>No Threatened Communities listed under the EPBC Act are affected by the proposed action.</p>
<p>32. The proponent's response to the DEWHA questions on the wasps which pollinate <i>Caladenia huegii</i>. It is submitted that they are either rare, too heat exhausted to travel 280m, the Kwinana Freeway, cars etc are a barrier to travel or they aren't even present on the site. What is accepted is that it would take several years research to make a scientific assessment of their habitat requirements. If that is the case then these responses are largely speculation and do not properly address the questions put forward by the department.</p>	<p>Pollinating wasps for rare flora</p>	<p>The responses are based on desktop review of available information on pollinating wasps and interviews with recognised experts in the field. DEC has also undertaken a peer review of the response and concur with the conclusions made in regard to the potential for indirect impact of the action on the Grand Spider Orchid are sound (see Appendix 3).</p>
<p>33. The proponent's documentation contains no acceptable on-site mitigation measures for either Carnaby's Black Cockatoos or <i>Caladenia huegii</i>. This is because to clear a site completely of native vegetation means there are no possible mitigation measures to be adopted. The off-site measures largely benefit the Department of Environment and Conservation and one of its reserves. It is difficult to see how these measures relate to the continued preservation of the threatened species and community on the Murdoch site.</p>	<p>Lack of on-site mitigation</p>	<p>The site is not being completely cleared of vegetation and the Project Area has been reduced from the original 30ha down to 25ha. The retention of 3ha within the Project Area and use of suitable species of flora for Carnaby's Black Cockatoo in landscaping is intended to ensure the Project Area will still be frequented by the species.</p> <p>The proposed off-site measures that address the residual impact after the on-site retention and restoration efforts are exhausted is consistent with the Commonwealth Draft Policy Statement 4.1: Use of environmental offsets under the Environment Protection and Biodiversity Conservation Act 1999.</p>
<p>Submission 3</p>		
<p>34. With the on-going loss of bushland we see the Beckley Bushland population of <i>Caladenia huegii</i> as a significant one. It is hard to understand that a rare orchid such as this species is so little studied that the pollinator is unknown. It makes it very difficult to make rational decisions to ensure sustainable management of the orchid.</p>	<p>Pollinating wasps for rare flora</p>	<p>The assessment of the potential impact on the Grand Spider Orchid was based on a desktop review of available information on pollinating wasps and interviews with recognised experts in the field. There is a lack of specific information of the actual species of pollinating wasp as it has not been identified.</p> <p>DEC has peer reviewed the responses and concur that the conclusions made in regard to the potential for indirect impact of the action on the Grand Spider Orchid are sound (see Section 4.6 and Appendix 3).</p>
<p>35. I understand for unpublished research at Botanical Gardens and Parks Authority (Kings Park) that the pollinator of <i>Caladenia heuglii</i> is likely to be larger and thus capable of moving longer distances. Weather in mid-September is mild and with winds from the west it is credible that the pollinator is blown across to Beckley from Murdoch bushland, as we have suggested.</p>	<p>Pollinating wasps for rare flora</p>	<p>Refer to Response to Items 3 and 34 above.</p>

Statement (adapted from original submission)	Issue	Response
<p>Submission 4</p> <p>36. I object to the dismissive approach to the Beckley Bushland because it only contains a few <i>Caladenia huegelii</i> orchids. This is a rare and endangered species which we know little about, least of all its pollinator.</p>	<p>Pollinating wasps for rare flora</p>	<p>The FSHP has not dismissed the issue of the Grand Spider Orchid in Beckley Bushland. It engaged its Environmental Consultants to undertake a new assessment examining the potential impact to the Grand Spider Orchid based on desktop review of available information on pollinating wasps and interviews with recognised experts in the field. There is a lack of specific information of the actual species of pollinating wasp as it has not been identified.</p> <p>DEC has peer reviewed the responses and concurs that the conclusions made in regard to the potential for indirect impact of the action on the Grand Spider Orchid are sound (see Appendix 3).</p>
<p>37. The total number of <i>Caladenia huegelii</i> listed is 1537 for 2006 although 13 sites were not surveyed at all. It also notes that 11 populations are already extinct or destroyed mainly due to urban development. The orchids within Ken Hurst Park may also be under threat following the recent deaths of a number of the banksia overstorey after a succession of very dry summers and the significant lowering of the water table. Those orchids on Jandakot Airport land (Bush Forever site 388) are also at risk from the proposed clearing of >100 ha of very good quality banksia woodland for commercial development. The Fraser Rd. population holds 54% of the known plants but the delay in securing this site has placed the remaining orchids at risk from illegal off road vehicles and future sand mining. These threatened populations make every site important to the continued survival of the orchid species.</p>	<p>Potential loss of rare flora</p>	<p>Acknowledged. The FSHP recognises the significance of any project that could affect the viability of Grand Spider Orchid populations. In this case, it is highly unlikely the proposed action has the potential to affect this species.</p>
<p>38. Equally the lack of information regarding the habits and identity of the pollinator suggest that it would be prudent to err on the side of caution to not destroy a likely source. The bushland to the south west of the Beckley Bushland is in direct line of the prevailing south west wind which could very possibly blow a pollinating wasp straight to the Beckley Bushland orchids.</p>	<p>Pollinating wasps for rare flora</p>	<p>The review of existing information concluded that even if they did exist on site it is unlikely that they would travel to the Beckley Bushland from the FSH Project Area. DEC has peer reviewed this assessment and concurred that “the pollinating wasps could exist in the Project Area but they are however unlikely to be still associated with the Beckley Bushland because of the impediments relating to the current distance of cleared land that separates the sites which appear most likely to be too great for the wasp to traverse, would prevent pheromone transfer between the sites and hence no attraction to embark on such a flight, and would cause overheating of any wasp that did attempt to do so” (K Atkins, pers. comm. 2008).</p> <p>However, the project has provided for the retention of a similar sized area of vegetation to the Beckley Bushland at its closest point. The DEC has provided advice, “while the question cannot be answered definitively, with existing knowledge, the proposed retention of the Conservation Area in the north east section of the Project Area would appear to be the most appropriate location in terms of vegetation, topography, and proximity to Beckley Bushland if the wasp was present in the area, and was to be maintained as a potential source for pollination of <i>Caladenia huegelii</i> in Beckley Bushland” (K Atkins, pers. comm. 2008).</p>

Statement (adapted from original submission)	Issue	Response
39. I submit that the entire portion of bushland south of the sewer line should be retained to support the continuation of those orchids present within the Beckley Bushland.	Potential loss of rare flora	There is no evidence of the Grand Spider Orchid or any other listed species being recorded during site surveys and there is no evidence that any portion of the Project Area is required to support the viability of the Grand Spider Orchid population in the Beckley Bushland. Therefore there is no need to retain all the bushland south of the sewer for the purpose of Threatened Flora conservation.
40. No mention is made regarding the effect on Carnaby's Black Cockatoo using the Murdoch bushland for foraging. This species is also at huge risk from the continuation of bushland clearing within the urban area. The small remnant that is proposed will do little to provide for the flock that moves through the area daily.	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population Conservation Area insufficient	The referral documentation and appended Carnaby's Black Cockatoo Management Plan fully details an assessment of the Project Area's value as foraging habitat for the species. The Conservation Areas are to be managed for the purpose of preservation of bushland in perpetuity and as an integrated part of the FSH grounds. FSH landscaping will complement and enhance the Conservation Areas through the use of species able to be used by the Carnaby's Black Cockatoo for feeding. Note, there is no anecdotal or recorded evidence of daily use of the site by Carnaby's Black Cockatoo.
41. It seems bizarre to me that cleared areas to the south of the Murdoch bushland (e.g. Bibra Lake and Cockburn, both adjacent to the Freeway) have not been utilized for the future hospital or for the supporting businesses planned for the future stages of the development.	Prefers alternative site	Refer to Section 3.1.
42. I would prefer though that the entire east-west extent of the bushland south of the sewer line, from the Police Station to the Kwinana Freeway, be retained as compensation for the loss of the northern section of bushland. This area of bushland could be the home of the pollinating wasp and it could continue to support flora and fauna diversity if it is retained in its entirety.	Pollinating wasps for rare flora	The footprint for the FSHP has been reduced to as minimum possible for the effective establishment and operation of a tertiary health facility. The original Clearing Permit allowed for up to 30ha to be cleared for the purpose of the development of the FHSP. This has since been reduced to 25ha. The required footprint of the FSHP has been reviewed many times in consideration of absolute land requirements. The proposed southern Conservation Area has been recently shifted, requiring the deletion of two planned roads, to avoid a recently found dieback infected area.
Submission 5		
43. We object to the currently proposed clearing of 25ha of native vegetation in the proposed Murdoch Activity Centre and surrounds (hereafter referred to as the "Murdoch site", bound by South Street to the north, Murdoch Drive to the west, the freight railway line to the south and the Kwinana Freeway to the east).	Opposes clearing in general	Acknowledged.
44. Although some alternative sites have been canvassed in the Department of Health's assessment of hospital needs, there do appear to be alternatives that have not been considered. One such site that appears to satisfy many of the required criteria is an area nearby, bounded by Farrington Rd, Bibra Drive, Hope Road and Baker Court. From an environmental perspective, this site has the significant advantage that it is mostly cleared land, and does not have the biodiversity of the Murdoch site. There has been little documentation of the impact of the clearing required for access off Roe Highway for the	Prefers alternative site	To date, no other site has been found that is: <ul style="list-style-type: none"> - of suitable size (in excess of 20ha); - as well located to service the health needs of the southern metropolitan area; and - as well suitably serviced by transport infrastructure. In response to this submission, the FSHP has undertaken a due diligence of Lots 51, 393, and 551 Bibra Drive, Bibra Lake, which is land described by the submitter (see Appendix 1). The due diligence has found that the land has numerous encumbrances that would affect availability of land. Assuming the encumbrances

Statement (adapted from original submission)	Issue	Response
currently proposed Murdoch site. However, the impact of clearing for access to the alternative site is likely to be less than that resulting from clearing the Murdoch site for the hospital, so this is a better outcome		can be lifted, lot 551 is the only available land that could be used. Lot 551 is 7.97 ha in size, which differs greatly to the 25 ha required for the project. The suggested site also cannot offer the advantages of the Project Area, for the purpose of supporting a tertiary hospital. Refer to Section 3.1 for further detail.
45. Most of the vegetation on the Murdoch site is Jarrah-Banksia Woodland in good to excellent condition. The Jarrah-Banksia woodland is used by Carnaby's Black Cockatoo, an endangered species. We have already lost and are continuing to lose large areas of Banksia woodland in the local area. While the Referral and preliminary documentation rightly indicates that clearing 25ha of Banksia woodland on the Murdoch site by itself will not compromise the continued existence of biodiversity including Carnaby's Black Cockatoo, it is the cumulative effect of these clearing activities that will.	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population	Off-site mitigation, including direct offsets such as the acquisition of valuable habitat to the species in the wheatbelt and rehabilitation of woodland in nearby Beeliar Regional Park, and contributing offsets such as research and conservation initiatives, are intended to address the issue of cumulative impact to the species through on-going clearing on the Swan Coastal Plain.
46. Further, while the Murdoch site is not utilised by Carnaby's Black Cockatoo for breeding, it is a feeding area which will only become more significant as/if continued clearing of Banksia woodland in nearby areas occurs, and as there is continued clearing of pine plantations and individual pine trees. This will begin to impact on the survival of mature Carnaby's Black Cockatoos during the non-breeding season or of non-breeding pairs.		The referral documentation recognises the site is used for feeding purposes. The on-site management measures are intended to ensure the Project Area can still be used by the species and the off-site mitigation measures to ensure the cumulative effect of this clearing does not affect the recovery of this species. The strategy was first to address the potential loss of on-site values for Carnaby's Black Cockatoo as much as practicable through retention of 3ha of high value woodland within the FSH Project Area and on-site landscaping using plant species able to be used by the Carnaby's Black Cockatoo.
47. We support the creation of the northern Conservation Area at the Murdoch site by the retention of the small diamond of high quality, dense <i>Marri-Banksia menziesii/attenuata-Melaleuca</i> vegetation at the northeast corner of the site, and of the Quenda wetland at the northwest corner of the site.		Acknowledged.
48. We object to the clearing of the high quality vegetation immediately north of the sewer line on the Murdoch site, especially of the natural dampland. This <i>Melaleuca preissiana/Banksia littoralis</i> dampland is unique in the area, and in the City of Melville generally, containing as it does tall, mature trees with a dark, but open, understorey. It is quite different from the Quenda wetland and the artificial wetland south of the sewer line. While it has a slightly weedy understorey, it is otherwise in very good condition and contains <i>Banksia littoralis</i> , which is a food source for Carnaby's Black Cockatoo. This dampland is a high quality biodiversity, education and cultural resource that should be retained.	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population Concerned about loss of dampland habitat	The proposed Northern and Southern Conservation Areas support Marri and Banksia woodland, both high value foraging habitat for the Carnaby's Black Cockatoo, and are excellent and very good condition respectively as per the Keighery condition rating scale. The <i>Melaleuca preissiana/Banksia littoralis</i> dampland contains impressive tall stands of these trees however the Melaleucas are not known high value feed for the Cockatoos. The mature Banksias and Marris in the proposed Conservation Areas are representative of the highest value areas for Carnaby's Black Cockatoo in the Project Area.
49. If this dampland is cleared, and the TAFE-created artificial perched wetland to the south of the sewer line is to be modified, then we suggest that the TAFE pond area be entirely re-contoured to re-create a <i>Melaleuca preissiana/Banksia littoralis</i> dampland similar to that lost by lowering the area to intersect the water table.	Concerned about loss of dampland habitat	The FSHP is committed to planting seedlings of <i>Melaleuca preissiana</i> and <i>Banksia littoralis</i> in a recreated dampland area and is suggested to be part of the enhancement of the artificial pond to the north of the southern Conservation Area, which is to be used as a stormwater infiltration basin.

Statement (adapted from original submission)	Issue	Response
<p>50. We are grateful to the Fiona Stanley Hospital project team for the expansion of the proposed Conservation Area north of the TAFE College. However, we would prefer that if the area of bushland north of the sewer line cannot be retained, then the entire east-west extent of the bushland south of the sewer line, from the Police Station to the Kwinana Freeway, be retained.</p>	<p>Current Conservation Areas insufficient</p>	<p>The footprint for the FSHP has been reduced to as minimum possible for effective establishment and operation of a tertiary health facility.</p> <p>The required footprint of the project has been reviewed many times in consideration of absolute land requirements. The proposed southern Conservation Area has been recently shifted, requiring the deletion of two planned roads, to avoid a recently found dieback infected area. Additional</p> <p>Note, the original Clearing Permit allowed for up to 30ha to be cleared for the purpose of the development of the Fiona Stanley Hospital. This was subsequently reduced to 25ha.</p>
<p>51. Alternatively, the entire eastern most section of bushland on the Murdoch site adjacent to Kwinana Freeway should be retained, and it should serve as the Greenway connecting the northern and southern Conservation Areas. This makes a lot more sense than clearing vegetation through the centre of the site and then revegetating it to create the Greenway, as proposed. Revegetated areas are never as diverse and sustainable as remnant bushland.</p>	<p>Current conservation and greenway areas insufficient</p>	<p>Linear corridors of vegetation are subject to higher edge effects (i.e. weed encroachment, erosion) as compared to 'square' blocks of vegetation as a result of their higher perimeter-to-area ratio. It is much preferable to have a block of vegetation as compared to a narrow corridor.</p>
<p>52. The Referral and associated Fauna Report makes numerous comments that the project and clearing of the Murdoch site "may impact" on fauna. In reality, we know that the clearing "will" impact on fauna. The loss of the majority of the vegetation will severely impact on local fauna.</p>	<p>Impact on fauna</p>	<p>Acknowledged.</p>
<p>53. The offset program proposed for the use of the Murdoch site is very good and comprehensive. However, we make the following comments and suggestions if the Murdoch site is to be used:</p> <ul style="list-style-type: none"> • share the topsoil/mulch resource with Ken Hurst Park to enable a number of unnecessary tracks to be closed and revegetated • undertake weed control in all of the remaining vegetation in the Murdoch Activity Centre area • close selected tracks within the remaining vegetation in the Murdoch Activity Centre area • undertake extensive re-revegetation of closed tracks and degraded area in the Murdoch Activity Centre area by planting tubestock or broadcasting seed • provide an offset for the Modong/Swamp Banksia dampland if it is to be cleared. It may be possible to re-create this dampland around or as part of the artificial wetland to be retained on the south side of the sewer line by excavating to the water table, and incorporating it into the Southern Conservation Area. 	<p>Enhancing off-sets</p>	<p>The FSHP will take these items into consideration and discuss them further with the submitter.</p>

Statement (adapted from original submission)	Issue	Response
54. Clearing of the Murdoch site would adversely affect matters of National Environmental Significance. This is not acceptable when there is potentially another site nearby that appears to meet all the criteria for a hospital. The alternative site would not require significant clearing and would not compromise matters of National Environmental Significance.	Prefers alternative site	Refer to Section 4.1 in regard to site alternatives
Submission 6		
55. During the very hot summer months there was a bushfire in the Kwinana area. I believe that some of the area is government land, Department of Corrections? It appears to be a very hot burn and therefore the understorey seed stock would have been wiped out, indicating a large expanse of potentially weed infested land. I would like to nominate that area as an alternative site for the new hospital. Why have you not assiduously pursued an alternative, more degraded site - knowing that it can be found?	Prefers alternative site	The land in question is in the suburb of Casuarina and is an C Class Reserve under the management of the Department of Corrections and is immediately adjacent to a high security prison (Casuarina Prison). This parcel of land is not available to the project primarily because it is a designated Bush Forever Protection Area, consisting of Jarrah-Banksia woodland and two wetlands; one of high conservation significance. In addition, the site is within a semi-rural setting approximately 35km south of the Central Business District (CBD) and 20kms further south than the proposed FSH site in Murdoch. The suggested site also cannot offer the advantages of the Project Area, for the purpose of supporting a tertiary hospital. Refer to Section 3.1 for further detail.
56. We can't determine whether the Carnaby's Black Cockatoo will survive our avarice, or be silenced forever – by the destruction of this worthy bushland site!	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population	It appears unlikely, based on current information and advice, that the action alone will result in a significant impact to the species however the substantial commitment made by the project to off-site mitigation, including land acquisition, rehabilitation, research and other conservation initiatives, is in light of the difficulty in quantitatively being able to rule out that the action will not have a significant impact on the species. The intention of the mitigation strategy is to have a net benefit for the recovery of the species over the long term
57. We can't determine if the Grand Spider Orchids at the remnant Beckley Bush would depend upon determined 'unknown species of wasps' traversing the traffic to find the last few orchids in the area.	Potential loss of rare flora	Refer to Section 4.6.
58. It is my opinion that this site in question is not only the most likely to survive over time or appear to have more relevance to the long term survival of Carnaby's Black-Cockatoo. I have also come to the understanding that efforts at regeneration, though commendable, never compare to natural bush such as now stands here. I believe this particular site to be highly significant to the survival of the Carnaby's Black-Cockatoo...The long term conservation of this low lying lush bushland site is vital to the survival of the local Carnaby's Black Cockatoo and is the correct approach in assumed custodianship.	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population	As detailed in the referral documentation, the mitigation strategy is to first address the potential loss of on-site values for Carnaby's Black Cockatoo is minimised through retention of 3ha of high value woodland within the FSH Project Area and on-site landscaping using plant species able to utilised by the Carnaby's Black Cockatoo.
59. I believe the precautionary principle to be the strongest approach and it is our obligation to find the means to take extremely cautious action. Spreading the seeds of destroyed bushland is nonsense no matter how sick and in need of hospitals we become as we divest ourselves even further from the natural environment.		The precautionary principle has been applied in this case. The substantial commitment made by the project to off-site mitigation, including land acquisition, rehabilitation, research and other conservation initiatives, is in light of the difficulty in quantitatively being able to determine the action will not have a significant impact on the species. The intention of the mitigation strategy is to have a net benefit for the recovery of the species over the long term.

Statement (adapted from original submission)	Issue	Response
60. The staged development will see the end result here being much greater loss than the initial clearing permit allows. They don't say that though. I find this misleading.		The first phase of the FSHP is due for completion in late 2013 and the proposed second phase at a later stage, but within the approved footprint. Note, the original Clearing Permit allowed for up to 30 ha to be cleared for the purpose of the development of the FSHP. This was subsequently reduced to 25ha.
Submission 7		
61. Whilst I understand the importance that both the government and the broader community place on the provision of hospital services, I believe that the retention of the valuable natural bush land at the Murdoch site is of far greater importance and another site should be found.	Prefers alternative site	Refer to Section 3.1 in regards to alternatives site.
62. I found the document relative to the pollinating wasps to be nothing more than a distraction. The Beckley bush land has also been so reduced and marginalised that it seems ridiculous to write a 13 page document linking these two issues.	Wasps	The DEWHA requested additional information in relation to potential impacts of the proposed development. In particular, DEHWA was concerned about indirect impacts to a population of Grand Spider Orchid (<i>Caladenia huegelii</i>) located at the Beckley Bushland site nearby. It was postulated that the proposal may affect wasp pollinators, which are required by the Grand Spider Orchid to reproduce.
63. Why is it proposed to retain the mandatory 10% of native bushland? This is too small to be a viable ecosystem particularly as the two conservation areas are well separated. Why not increase the retained areas to 20% of the project area (6ha)?	Conservation areas insufficient	The footprint for the FSHP has been reduced to as minimum possible for effective establishment and operation of a tertiary health facility. The required footprint of the project has been reviewed many times in consideration of absolute land requirements. Note, the original Clearing Permit allowed for up to 30ha to be cleared for the purpose of the development of the FSHP. This was subsequently reduced to 25ha
64. 1.4408ha of the bush land is described as being in excellent condition (northern conservation area) yet it is only proposed to retain 0.88 ha or 61% of this area. Why can't all of this best treed/bush area be retained?	Conservation areas insufficient	The bushland is in the northern part of the Project Area, at a 'pinch point' for access to the Fiona Stanley Hospital from South Street and the freeway. The areas of excellent vegetation to be cleared of this bushland are needed for essential roads (refer to Figure 8 in EPBC Act Referral Documentation). The footprint for the FSH Project has been reduced to as minimum possible for effective establishment and operation of a tertiary health facility. The required footprint of the project has been reviewed many times in consideration of absolute land requirements.
65. I note that offsets will need to be made in regard to the total Murdoch superblock which covers approximately 60ha. Mention is made of retaining 9ha of bush land overall. Will this be the case?	Cumulative clearing	This refers to the entire Murdoch superblock, of which the FSH Project Area is part of. The 3 ha of bushland retained within the FSH Project Area contributes to these figures as does areas such as the Quenda wetland north of St John of God Hospital and the Beckley Bushland.
Submission 8		
66. Populations of Carnaby's Black Cockatoo are "declining dramatically due to land clearing for agriculture in regional areas and for urban development around Perth. The past 45 years have seen a 50% decrease in the species range and abundance... (Birds Australia, Swan Coastal Plain Project, Bansi Shah). Shah's report concludes that the studies undertaken during the project "show that Carnaby's Black Cockatoos use the entire landscape of the Swan Coastal Plain, with a significant preference for large tracts of native	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population	The FSHP agrees that any clearing of Carnaby's Black Cockatoo is of high importance demonstrated by the breadth and resources involved in off-site mitigation commitments, to be implemented under the framework established by the interagency MOU. It is recognised that ongoing clearing is significant to the species. Off-site mitigation, including direct offsets such as the acquisition of valuable habitat to the species in the wheatbelt and rehabilitation of woodland in nearby Beeliam Regional Park, and contributing offsets such as research and conservation initiatives, are intended to

Statement (adapted from original submission)	Issue	Response
vegetation and pine plantations. These results have important conservation implications for the Carnaby's Black Cockatoo populations with respect to clearing, and possibly fragmentation, of the remaining native vegetation in and around the Perth Metropolitan area.		address the issue of cumulative impact to the species through on-going clearing on the Swan Coastal Plain.
67. The elimination of around 25ha of feeding habitat at the proposed site is one of these thousand cuts which will be detrimental to the Carnaby's Black Cockatoo group in the area. No matter how brilliant "on-site retention of 3ha of vegetation and re-establishment of flora species suitable as a food source in hospital landscaping and streetscaping", and "abutting vegetation", this can in no way compare with the destruction of 25ha of bushland habitat	Opposes clearing	Refer to Section 4.7.
68. The phrase 'moderately common' quoted from Johnstone, R. E. and C., 2004, is misunderstood by GHD Pty Ltd. Were Carnaby's Black Cockatoos moderately common, they would not be listed by the federal government as endangered and by the state government, WA Wildlife Conservation Act 1950, as threatened.	Data incorrect	Acknowledged.
69. There appears to be a correlation between food resources available and numbers of Carnaby's Black Cockatoos.	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population	Acknowledged. The rehabilitation of 25ha of woodland, using topsoil and seed sourced from the FSHPA, is intended to ensure there is no significant loss in available feeding habitat in the local area over the long term.
70. Strongly disagree with statement "The potential impact on the species of clearing feeding habitat in the project area will be reduced through a combination of on-site retention of key areas of vegetation and re-establishment of flora species suitable as a food source in hospital landscaping and streetscaping. This statement is nonsense because approximately 25ha of the 32.4ha area will be cleared; thus there is a large net loss of intact vegetation.	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population	It is the impact (or effect) of the clearing on Carnaby's Black Cockatoo that is the subject of this assessment and that effect, and the significance of the clearing to the species, can be 'reduced' through on-site and off-site mitigation measures. This is not meant to imply the actual clearing will be reduced but rather the effect and its significance. Over the long term, it is hoped that effectively there will be no net loss of feeding habitat in the local area through primarily the rehabilitation of habitat in Beeliar Regional Park, supported by the hospital landscaping, which shall enhance the residual value of the retained bushland in the Project Area.
71. The motions of providing greenways which are but a few metres wide and statements within the management actions are desperate attempts to be seen to be complying with the EPBC Act. Establishing roof gardens and installing nest boxes are also. desperate suggestions indeed.	Off-sets insufficient	Carnaby's Black Cockatoo are a highly adaptable species and there is reason to expect they will use planted trees in greenways for foraging if they are the appropriate species. This likelihood is increased by the retention of 3 ha bushland within the Project Area and existence of adjacent bushland with foraging habitat value. The provision of corridors/linkages between bushland remnants is beneficial to the species as 'stepping stones' across the Project Area.
72. Food is thus very likely to be a limiting factor for both the reproduction and the long-term survival of these long-lived birds. How then, can GHD Pty Ltd and the Department of Housing and Works and the Minister for Health, argue that the destruction of 25ha of valuable habitat is 'unlikely' to adversely affect the survival of this species?	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population	See Section 4.3 and 4.7.

Statement (adapted from original submission)	Issue	Response
73. The Urban Bushland Council agrees with the comments in the last line where the proponent states that "cumulative effect of clearing of such habitat is of concern". The Urban Bushland Council believes that the action will certainly modify, destroy and remove a significant part of the habitat, contributing to the decline of the species and in particular its breeding potential.	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population	See Section 4.3 and 4.7.
74. We can confirm that Rainbow Bee-eaters use the site as they were observed in the site on 15th February 2008. It is highly probable that Rainbow Bee-eaters use the site for nesting.	Rainbow Bee-eaters	Acknowledged. This has been confirmed in surveys. Refer to Section 3.5.
75. The Urban Bushland Council asserts that although valuable work may be done by way of measures proposed in the draft Carnaby's Black-Cockatoo Management Plan there will be no net environmental benefit.		Noted. See Section 4.3
76. The UBC sees no evidence presented by the proponent which indicates that Carnaby's Black Cockatoo will not be affected by the proposal. Indeed the fauna survey undertaken by GHD in October 2006 included only opportunistic surveying for Carnaby's Black Cockatoo. It is apparent that GHD Pty Ltd has not undertaken sufficient research on Carnaby's Black Cockatoo. Further a rigorous study of Carnaby's Black Cockatoo in the Jandakot/Murdoch area would reveal data such that conclusions could be based on science rather than supposition.	Concerned project could lead to decrease in size of Carnaby's Black Cockatoo population	<p>Carnaby's Black Cockatoo is a highly adaptable species and there is reason to expect it will continue to use the Project Area for, albeit reduced, foraging. This will be facilitated by the retention of 3ha bushland within the Project Area, use of suitable species for the Carnaby's Black Cockatoo in landscaping to reduce the net effect of clearing in the immediate area. It should also be noted that there is adjacent bushland with foraging habitat value hence the 3 ha of retained bushland will be part of a local network of small Conservation Areas, including Quenda Swamp to the north, Beckley Bushland on the eastern side of the freeway, bushland around Challenger TAFE and Murdoch University.</p> <p>The conclusions made in the referral documentation are reasonable based on current information and the offsets proposed appropriate to address any uncertainty associated with scale of impact.</p> <p>The research program being funded as part of the off-site mitigation, the scope of which has been developed by DEC, will allow for future identification of critical habitat requirements and support future Commonwealth's decision-making process when development proposals are referred to the DEWHA. The research will also allow for sensitive urban development and appropriate planning for areas such as the Gnaragara Park, thus ensuring the long-term survival of the species in the region. The species will therefore benefit from this work and initiative.</p>
77. We recommend that the state government's WA Threatened Species and Communities Unit of DEC be asked to survey the site for all threatened species and communities. It is understood that flora searches by the proponent have failed to find them.	Insufficient data	This is unnecessary as the Project Area has been subject to two separate Spring surveys (2005, 2007) in the appropriate flowering time for the Grand Spider Orchid. The 2007 targeted threatened flora search involved three orchid specialists conducting tight grid sampling across the Project Area. While no Grand Spider Orchid were located, the site proved to be very orchid rich with a total of 11, 145 individuals recorded across 27 species. None of these species are currently of conservation concern. Due to the intensity of the survey it is unlikely that any Grand Spider Orchids have remained undetected in the Project Area.
78. The UBC supports the Department of the Environment, Water, Heritage and the Arts in assessing the proposal under consideration is a controlled action under the EPBC Act.	Support designation of controlled action	Noted.

6. REFERENCES

Strategen (2008a). *Carnaby's Black Cockatoo Management Plan*. Unpublished report prepared for Department of Housing and Works, January 2008, Perth WA

Strategen (2008b). *Fiona Stanley Hospital Project - Further information required for Assessment by Preliminary Documentation under the EPBC Act*. March 2008, Perth WA.

