Appendix C
Robb Jetty Ecological Assessment

C

CLIENTS | PEOPLE | PERFORMANCE

LandCorp

Report for Cockburn Coast; Robb Jetty

Ecological Assessment

March 2012

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

This Report on Cockburn coast; Robb Jetty Ecological Assessment ("Report"):

1. *has been prepared by GHD Pty Ltd ("GHD") for LandCorp;*
2. *may only be used and relied on by LandCorp;*
3. *must not be copied to, used by, or relied on by any person other than LandCorp without the prior written consent of GHD;*
4. *may only be used for the purpose of assessment of Flora and Fauna at the three study site and the purpose of the report detailed in section 1.2 (and must not be used for any other purpose).*

GHD and its servants, employees and officers otherwise expressly disclaim responsibility to any person other than LandCorp arising from or in connection with this Report.

To the maximum extent permitted by law, all implied warranties and conditions in relation to the services provided by GHD and the Report are excluded unless they are expressly stated to apply in this Report.

The services undertaken by GHD in connection with preparing this Report:

- *were limited to those specifically detailed in section 1.3 and 1.4 of this Report;*
- *This scope of works to complete the Level 2 flora and a Level 1 fauna survey of the Robb Jetty area aims to satisfy all scoping requirements documented within the tender;*
- *The assessment is based on the Project footprint provided by LandCorp, as provided in the project brief and shown in Figure 1. Any changes to the project, outside the description provided above, are outside the scope of this assessment*
- *The opinions, conclusions and any recommendations in this Report are based on assumptions made by GHD when undertaking services and preparing the Report listed in section 1.4*

GHD expressly disclaims responsibility for any error in, or omission from, this Report arising from or in connection with any of the Assumptions being incorrect.

Contents

1. Back Ground 1

1.1 Project 1

1.2 Purpose of study 1

1.3 Scope of works 1

1.4 Assumptions 1

2. Previous Studies 4

3. Robb Jetty Study site 5

3.1 Desk Top Investigation 5

3.2 Field Survey 5

Table Index

Table 1 Vegetation Condition rating scale 6

Table 2 Fauna Species recorded during field survey 8

Appendices

A Figure 1

B Site Photos

1. Back Ground

1.1 Project

The Cockburn Coast Area has been subject to various development pressures in recent times. This recent pressure is additional to the area's long history of industrial development including transport, agriculture and heavy industry. The City of Cockburn is planning the development of the Cockburn Coast Area, including the Robb Jetty Area (the study area) which is situated between Rockingham Road and Robb Road in the City of Cockburn, the location of the study area is shown in Plate 1 and Figure 1, Appendix A.

1.2 Purpose of study

This report (The Cockburn Coast; Robb Jetty Ecological Assessment Report) has been commissioned by LandCorp as a technical study to support the Local Structure Plan. This study has been conducted to provide information on the Ecological attributes of the Robb Jetty study area. This report will assist in supporting the City of Cockburn's Development Area Provisions for the Cockburn Coast Project. The work is also a requirement of the City of Cockburn prior to adoption of the Scheme Amendment No. 89 for final approval.

1.3 Scope of works

This scope of works for this project involves both desktop and field components. The field component consisted of a level 2 flora and fauna survey of the Robb Jetty Study site and aimed to satisfy all scoping requirements documented within the request for tender. The survey was undertaken in accordance with;

- Environmental Protection Authority (EPA) guidelines for flora surveys as outlined in Guidance Statement No. 51 Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (EPA, 2004a);
- EPA Guidelines for Terrestrial Biological Surveys as an Element of Biodiversity Protection, Position Statement No. 3 (EPA, 2002); and
- EPA Assessment of Environmental Factors for Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia. Guidance Statement No.56 (EPA, 2004b).

1.4 Assumptions

The assessment is based on the site footprints provided by LandCorp in the project brief and shown in Plate 1 and Figure 1, Appendix A. Any changes to the site or scope, outside the description provided above, are outside the scope of this assessment.

GHD has relied upon external data, namely publicly available databases, to identify species previously recorded in the area. The accuracy of this data lies with the provider, not with GHD.

LEGEND

- Robb Jetty Study Area
- Previous Study Area

1: 15,000 (at A4)

0 125 250 500 750

Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

N

GHD CLIENTS|PEOPLE|PERFORMANCE

LANDCORP powered by SLIP ENABLER

Cockburn Coast
Ecological Assessment

Job Number	61-27936
Revision	0
Date	20 Mar 2012

Locality Map

Plate 1

180 Lonsdale Street Melbourne VIC 3000 Australia T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com W www.ghd.com

N:\AU\Perth\Projects\61\27936\GIS\Maps\MXD\6127936_G002_A4Fig1_Rev0.mxd

Data source: GHD, Robb Jetty Study Area - 20130308, Previous Study Area - 20091221; Landgate: 2011 Metro West Mosaic - 20120319, Road Names - 20120319; GA: 250K Australian Topogrpahic Series - 2006. Created by:radeleon

2. Previous Studies

Previous assessments of the wider Cockburn Coast area for LandCorp conducted by GHD in December 2009 reported limited environmental constraints. The two previous study areas are shown on Plate 1 (page 3); these studies included the foreshore area immediately adjacent to the current Robb Jetty study area. The previous study areas are shown in Plate 1 (page 3). The project was assessed as at variance with two of the ten clearing principles because parts of the vegetation were regarded as potential Black Cockatoo feeding habitat. PATN (statistical) analysis of the flora quadrat data from that study aligned none of the flora quadrats with Threatened or Priority Ecological Communities that may be present in the vicinity of the site. The majority vegetation in the 2009 survey area was reported to be in completely degraded or degraded condition.

Two specially protected fauna species were recorded utilising the study site during the 2009 study; Carnabys Cockatoo (*Calyptorhynchus latirostris)* and the priority three skink *Lerista lineata.* The 2009 study also recorded the presence of *Lomandra maritima* which indicates the study area may be used by the threatened Graceful Sunmoth (*Synemon gratiosa*), and a targeted survey was recommended. A Graceful Sunmoth survey was undertaken in March 2011 in areas of likely habitat.

3. Robb Jetty Study site

3.1 Desk Top Investigation

A desktop review for the Rob Jetty study site was undertaken using the Department of Sustainability, Environment, Water, People and Community's (DSEWPaC) *Environmental Protection and Biodiversity Conservation Act* (EPBC Act) data base and the Department of Environment and Conservations' *NatureMap* data base for the potential presence of threated or conservation significant flora and fauna. This review revealed;

- 23 conservation significant species of flora potentially occurring near the study site. None of these were recorded during the site survey in March 2012 and none of these plants are likely to occur within the highly degraded study site.
- Eleven (11) conservation significant terrestrial fauna species have been previously reported within 5 kms of the study site. Nine of these species are unlikely to occur in the highly modified study site due to lack of habitat. Two species of conservation significant Black Cockatoo may utilise the study site;
  - *Calyptorhynchus latirostris* (Carnaby's Black Cockatoo) is listed as Endangered by the EPBC Act and Threatened by the WC Act, and;
  - *Calyptorhynchus banksii naso* (Forest Red-tailed Black Cockatoo) is listed as vulnerable by the EPBC Act.

3.2 Field Survey

3.2.1 Vegetation and Flora

Using quadrat and opportunistic sampling methodologies the flora and vegetation of the study site was assessed on 1st March 2012. The location of the assessment points (quadrats and photo points) are shown in Figure 1, Appendix A. Field surveys were undertaken with regards to the EPA Guidance Statement No. 51, *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* and included the following:

- A representative number of quadrats located in each vegetation type. In accordance with EPA Guidance Statement 51, 4 quadrats were sampled. The site has one vegetation type identified by means of a combination of aerial photography, topographical features and field observation. Quadrat sampling sites were an area of 10 m x 10 m and the position of each site was recorded using a GPS unit.
- In addition to quadrat sampling, opportunistic sampling was conducted throughout the site to provide more thorough spatial coverage

Where field identification of plant taxa was not possible, specimens were collected in a systematic manner and then later identified at the West Australian Herbarium by comparison with the reference collection and use of identification

3.2.2 Vegetation condition

The vegetation condition of the site was assessed using the vegetation condition rating scale developed by Keighery (1994) that recognises the intactness of vegetation, which is defined by the following:

- Completeness of structural levels;
- Extent of weed invasion;
- Historical disturbance from tracks and other clearing or dumping; and
- The potential for natural or assisted regeneration.

The scale, therefore, consists of six (6) rating levels as outlined in Table 1.

Table 1 Vegetation Condition rating scale

Vegetation condition rating	Vegetation condition	Description
1	*Pristine or Nearly so.*	No obvious signs of disturbance.
2	*Excellent*	Vegetation structure intact, disturbance affecting individual species, and weeds are non-aggressive species.
3	*Very Good*	Vegetation structure altered, obvious signs of disturbance.
4	*Good*	Vegetation structure significantly altered by very obvious signs of multiple disturbances retains basic vegetation structure or ability to regenerate it.
5	*Degraded*	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not in a state approaching good condition without intensive management.
6	*Completely Degraded*	The structure of the vegetation is no longer intact and the area is completely or almost without native species.

A long history of multiple disturbances including clearing and infrastructure developments within the site and in the surrounding areas has resulted in vegetation of the study site being completely modified from the original state and degraded. The site is considered to be in condition six as the area is completely or almost without native species. There are site photos included in Appendix B.

3.2.3 Flora diversity

The current vegetation of the site is dominated by introduced species. The most common weeds included the grasses *Bromus diandrus, Cynodon dactylon* (couch grass) and *Erharta calycina* (Veldt grass). A variety of other weeds including Cotton Bush (*Gomphocarpus fruiticosus*) and African Box thorn (*Lycium ferocissimum*) were recorded throughout the site. Three weeds listed as Declared Plants under section 37 of the *Agricultural and Related Resources Protection Act 1976* (WA) were recorded during the site survey. The three species were;

- Paterson's curse (*Echium plantagineum)* was spread across the site. The location of this weed has not been mapped because it is wide spread and common throughout the whole site.
- Tamarix tree (or Athel pine, *Tamarix philoxeroides)* have been planted extensively across the site.
- Bridal Creeper (*Asparagus asparagoides*) was identified in two locations

The location of these weeds is presented on Figure 1, Appendix A.

There were a small number of native flora species recorded on the site. These species were: *Trachymene coerulea*, *Acacia rostellifera, Rhagodia eremaea, Agonis flexuosa, Spyridium globulosum, Eucalyptus platypus (*native to eastern Australia*),* Moreton Bay Fig trees *(Ficus macrophylla,* also native to eastern Australia*)* and Tuart *(Eucalyptus gomphocephala).* The *Eucalyptus platypus* trees have been extensively planted while many of the other species appear to have sprouted from seed stored within the soil. As has been mentioned there is a long history of disturbance and vegetation modification within the area and as a result there is no intact remnant vegetation community remaining within the site.

Mapping is included within Appendix A and and site photos are included at Appendix B.

3.2.4 Fauna Survey

The fauna assessment was consistent with a Level 1 assessment (reconnaissance survey) in accordance with *Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia – Guidance Statement No. 56*, EPA, Perth.

The fauna assessment undertaken was a reconnaissance survey only and thus only sampled those species that can be easily seen, heard or have distinctive signs, such as tracks, scats, diggings etc. Many cryptic and nocturnal species would not have been identified during a reconnaissance survey

3.2.5 Fauna Habitat

Fauna habitat value at the Rob Jetty study site is limited due to the highly modified and degraded condition of the site due to a long history of multiple disturbances and development in the area. The site would provide habitat for assembles of small reptiles, some birds species and small ground mammals, though the mammals are all likely to be introduced taxa (such as house mice, rats and cats).

3.2.6 Significant Tree Survey

This project does not trigger referral to DSEWPaC with regard to the Black Cockatoos listed under the EPBC act. Four trees were recorded during the field survey that may potentially be used as feeding resources and roosting sites by the two species of conservation significant Black Cockatoos that occur in the Cockburn Area. These trees consist of three Pine trees (*Pinus pinaster,* an introduced species) and one Tuart tree (*Eucalyptus gomphocephala,* growing along the edge of the study area). These trees are mapped on Figure 1.

3.2.7 Fauna Diversity

Eighteen (18) fauna species were recorded during the field survey on the 1st March including 14 native and five introduced species, these are listed in table 1. Two migratory species were recorded; the Black-faced Cuckoo-shrike and Rainbow Bee-eater, however these species are wide spread and not considered to be a significant presence at this site. No conservation significant fauna species were recorded during the field survey.

Table 2 Fauna Species recorded during field survey

Family	Species	Common name	Status
Campephagidae	*Coracina novaehollandiae*	Black-faced Cuckoo-shrike	Migratory (EPBC Act)
Columbidae	*Phaps chalcopters*	Common Bronze wing	
Columbidae	*Columba livia*	Domestic Pigeon	Introduced
Columbidae	*Streptopelia senegalensis*	Laughing Turtle-Dove	Introduced
Corvidae	*Corvus coronoides*	Australian Raven	
Cracticidae	*Cracticus tibicen*	Australian Magpie	
Dicruridae	*Rhipidura leucophrys*	Willey Wagtail	
Dicruridae	*Grallina cyanoleuca*	Magpie-lark	
Hirundinidae	*Hirundo neoxena*	Welcome Swallow	
Laridae	*Larus novaehollandiae*	Silver Gull	
Meliphagidae	*Phylidonyris nigra*	White-checked honey eater	
Meliphagidae	*Phylidonyris novaehollandiae*	New Holland Honey eater	
Meliphagidae	*Anthochaera carunculta*	Red Wattle bird	
Meropidae	*Merops ornatus*	Rainbow Bee-eater	Migratory (EPBC Act)
Psittacidae	*Trichoglossus haematodus*	Rainbow Lorikeet	Introduced

Psittacidae	*Cacatua sanguinea*	Little Corella	
Mammals			
Leporidae	*Orytolagus cuniculus*	Rabbit	Introduced
Felidae	*Felis catus*	Cat	Introduced

3.2.8 Assessment of Ecological risk

Clearing and development of the Robb Jetty site would have no risk to flora and fauna that is listed as threatened under the EPBC Act by and there for the project would not trigger referral to the DSWEPaC.

The presence of four trees that are potentially significant habitat for the Black Cockatoo will not create a risk to the development of the study site, as the project will not trigger referral to DSEWPaC because;

- There are no known nesting trees within the site
- Clearing of the three Pine trees (foraging habitat) and one Tuart tree (potential nesting and roosting tree on the edge of the study site) will not be greater than 1 ha.

Furthermore, there was no evidence of Black Cockatoos use of the Rob Jetty site indicated during the field survey. Evidence of roosting and feeding is provided through chewed debris and scats at the base of trees.

The Rob Jetty Chimney (mapped in Figure 1 , Appendix A and shown in Plate 8, appendix B) is registered by the Heritage Council of WA as a place of Heritage (http://register.heritage.wa.gov.au/viewplace) and is situated within the study area at 88 Bennett Avenue. The heritage register documentation for the Chimney (otherwise known as Rob Jetty Abattoir) is limited to the chimney only and this will not be impacted on by this project. There is a row of Moreton Bay fig trees that are growing in association with the Rob Jetty Chimney that are included in the City of Cockburn's Local Government Inventory of Heritage Places as part of the Significant Trees list (shown in Plate 9, Appendix B). There are specific management requirements for these trees which detail the manner in which the trees can be pruned. Heritage trees should be removed only in order to protect public safety or private or public property from imminent danger. The Fig trees may have some habitat value as roosting trees for native fauna (even though Moreton Bay fig trees are an introduced species).The cultural significance of these trees is outside the scope of this ecological study however the current structure development plan for the Rob Jetty Area includes provision to retain these trees.

3.2.9 Conclusion

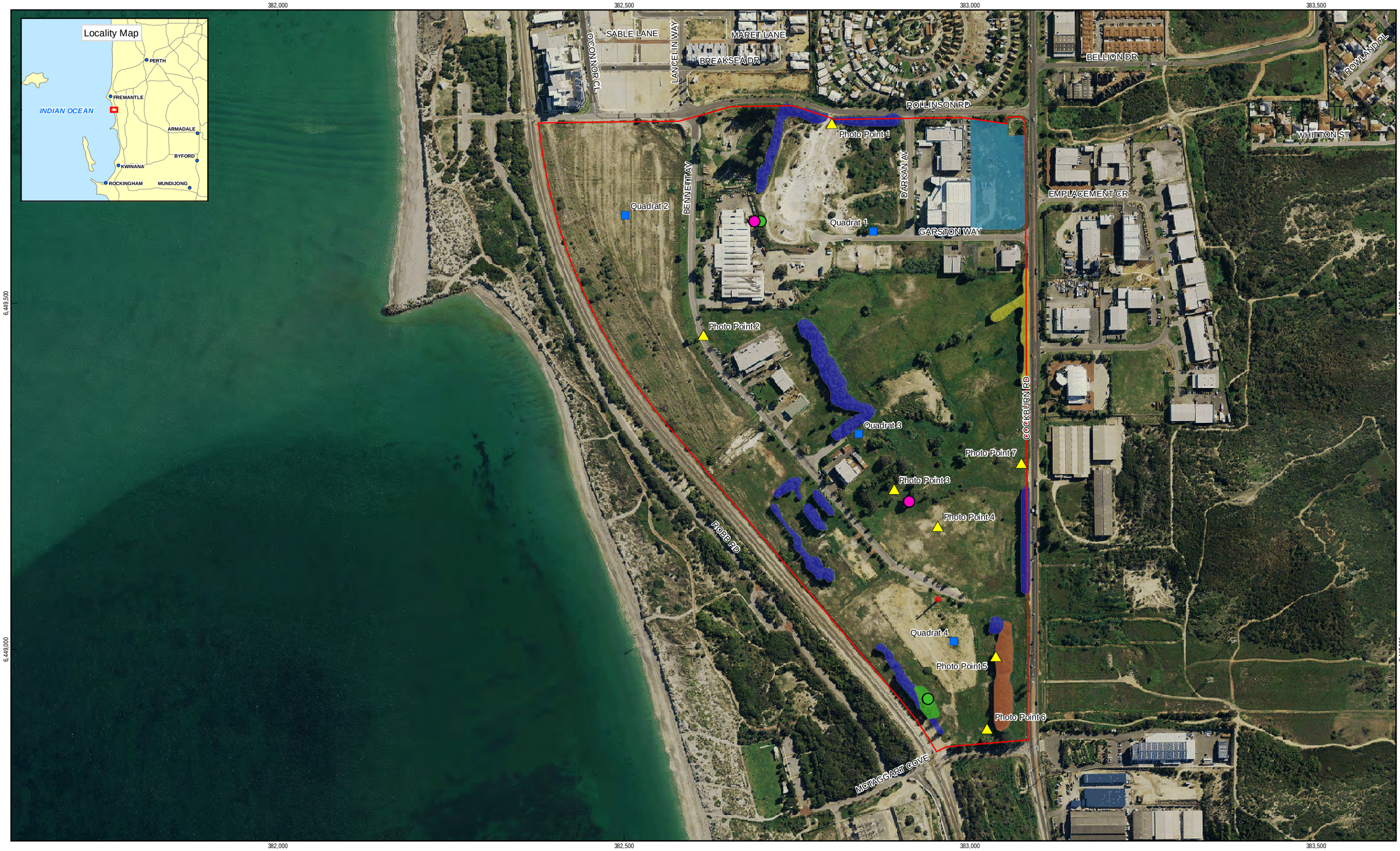
There are no ecological aspects to the study site that require further investigation or trigger referral to DSWEPaC. There were no conservation significant fauna or flora recorded during the field survey. Furthermore, clearing vegetation and development of the highly modified and degraded Robb Jetty study area would not impact on any conservation significant flora or fauna species list under state or federal legislation. There are two points of note arising from this Ecological assessment;

- The three Declared Weeds, Paterson's curse (*Echium plantagineum),* Tamarix trees (*Tamarix philoxeroides)* and Bridal Creeper (*Asparagus asparagoides*), should be managed during construction phase to prevent the spread of these plants.
- Current plans to retain the Moreton Bay Fig trees growing in association with the Robb Jetty Chimney should be maintained.

Appendix A

Figure 1

Ecological Aspects of the Robb Jetty Study Area.



1:5,000 (at A3)

0 25 50 100 150 200 250

Metres

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Grid: Map Grid of Australia 1994, Zone 50

N

LEGEND

- Quadrat
- Photo Point Location
- Significant Tree
- Bridle Creeper
- Study Boundary

Areas of Interest

- Bridle Creeper
- Moreton Bay Fig Trees
- New Car Park
- Robb Jetty Chimney
- Tamarix Trees
- Tamarix Trees - Mixed with other planted tree species

CLIENTS|PEOPLE|PERFORMANCE

powered by SLIP ENABLER

Cockburn Coast
Ecological Assessment

Job Number	61-27936
Revision	0
Date	16 Mar 2012

Robb Jetty Ecological Aspects

Figure 1

G:\61\27936\GIS\Maps\MXD\6127936_G001_Rev0.mxd

Data source: [illegible] Metro West Mosaic - 20120308, Road Names - 20120315; GHD: Study Boundary - 20120308, Areas of Interest - 20120308, Quadrat -20120313, Photo Point Location - 20120313, Significant Tree - 20120313, Bridle Creeper - 20120313; GA - Topo 250k Series 3 - 20060905. Created by: radeleon, cagilbert

239 Adelaide Terrace Perth WA 6004 Australia T 61 8 6222 8222 F 61 8 6222 8555 E permail@ghd.com.au W www.ghd.com.au

Appendix B

Site Photos

Plate 1 Quadrat one; the study site is highly modified with multiple historic disturbances.

Plate 2 Quadrat 2; the area in the north west corner of the study site has been historically covered in blue metal.

Plate 3 Quadrat 3; there are several areas across the study site that have been used to dump land fill.

Plate 4 Quadrat 4; There are extensive areas through the site that have been completely cleared.

Plate 5 Photo point 1. There are several areas across the site where domestic and industrial waste has been dumped

Plate 6 Photo point two. Much of the vegetation within the study site has been planted

Plate 7 Photo point three. The site has multiple disturbances including weeds an historic clearing.

Plate 8 Robb Jetty Chimney (a Heritage listed place) is within the study site)

Plate 9 Photo point five. There is a row of large Morton Bay fig trees growing near the Rob Jetty Chimney.

Plate 10 Photo point 6. *Tamarix philoxeroides* (Tamarix trees) are common throughout the site.

Plate 11 Photo point 7. Introduced grasses are common throughout the site.

GHD

GHD House, 239 Adelaide Tce. Perth, WA 6004
P.O. Box 3106, Perth WA 6832
T: 61 8 6222 8222 F: 61 8 6222 8555 E: permail@ghd.com.au

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
1	Jo Kuiper	Meranda Toner (in lieu of Johan Hurter)		Meranda Toner (in lieu of Anna Napier)		17/09/2012