

## ENVIRONMENTAL SCOPING DOCUMENT

PROPOSAL NAME:	LOTS 2 AND 10 ROWLEY ROAD MANDOGALUP
ASSESSMENT NUMBER:	2197
LOCATION:	APPROXIMATELY 33 KILOMETRES (KM) SOUTH OF PERTH, WESTERN AUSTRALIA
LOCAL GOVERNMENT AREA:	CITY OF KWINANA
PROPONENT:	QUESTDALE HOLDINGS PTY LTD
PUBLIC REVIEW PERIOD:	4 WEEKS

### 1. Introduction

The Environmental Protection Authority (EPA) has determined that the above proposal is to be assessed under Part IV of the Environmental Protection Act 1986 (EP Act).

The purpose of the Environmental Scoping Document (ESD) is to define the form, content, timing and procedure of the environmental review, required by s. 40(3) of the EP Act. Questdale Holdings (the proponent) has prepared this draft ESD according to the procedures in the EPA's Procedures Manual.

#### **Form**

The EPA requires that the form of the report on the environmental review required under s. 40 (Environmental Review Document, ERD) is according to the Environmental Review Document template.

#### **Content**

The EPA requires that the environmental review includes the content outlined in sections 2 to 6.

#### **Timing**

Table 1 sets out the timeline for the assessment of the proposal agreed between the EPA and the proponent.

**Table 1      Assessment Timeline**

Key Assessment Milestones	Completion Date
EPA approves Environmental Scoping Document	21 November 2019
Proponent submits first draft Environmental Review Document	24 December 2019
EPA provides comment on first draft Environmental Review Document (6 weeks from EPA review of ERD)	14 February 2020 *
Proponent submits revised draft Environmental Review Document	28 February 2020
EPA assesses revised ERD (4 weeks after receipt)	27 March 2020
EPA authorises release of Environmental Review Document for public review (2 weeks from EPA approval of ERD)	9 April 2020
Proponent releases Environmental Review Document for public review for 4 weeks	27 April 2020
Close of public review period	25 May 2020
EPA provides Summary of Submissions (3 weeks from close of public review period)	15 June 2020
Proponent provides Response to Submissions	10 July 2020
EPA reviews the Response to Submissions (4 weeks from receipt of Response to Submissions)	7 August 2020
EPA prepares draft assessment report and completes assessment (6 weeks from EPA accepting Response to Submissions)	18 September 2020
EPA finalises assessment report (including two weeks consultation on draft conditions) and gives report to Minister (6 weeks from completion of assessment)	30 October 2020

\*: timeframe allows for Department of Water and Environmental Regulation office closure from 25 December 2019 to January 2020 and 1 public holiday (Australia Day)

### **Procedure**

The EPA requires the proponent to undertake the environmental review according to the procedures in the *Administrative Procedures* and the *Procedures Manual*.

### **Assessment under the Bilateral Agreement (or accredited assessment)**

The proposal has been referred and determined to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and is being assessed under the Bilateral

Agreement between the Commonwealth of Australia and the State of Western Australia made under section 45 of that Act. The relevant matters of national environmental significance (MNES) for this proposal are:

- Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community (BWSCP TEC) – Endangered
- Carnaby’s black cockatoo (*Calyptorhynchus latirostris*) – Endangered
- Forest Red-tailed black cockatoo (*Calyptorhynchus banksii naso*) - Vulnerable

This draft ESD includes work required to be carried out and reported on in the Environmental Review Document in relation to MNES. The Environmental Review Document will also address the matters in Schedule 4 of the *Environmental Protection and Biodiversity Conservation Regulations 2000*.

MNES that may be impacted by the proposal will be identified and the potential impacts on these matters addressed within each relevant preliminary environmental factor identified in Table 2. Proposed offsets to address significant residual impacts on MNES will also be discussed in the Environmental Review Document.

## 2. The proposal

The subject of this ESD is the proposal by Questdale Holdings Pty Ltd to undertake sand mining at Lots 2 and 10 Rowley Road Mandogalup. The proposal is located approximately 33 km south of Perth. The regional location of the proposal is shown in Figure 1 and the Proposal Area and indicative footprint of the proposal is also delineated in Figure 1.

The proposal involves extending an existing sand quarry extraction operation on Lots 2 and 10 Rowley Road, Mandogalup (‘the Proposal Area’) and clear vegetation for bushfire risk management. The Proposal Area consists of 43.67 ha within Lots 2 and 10 and involves the clearing of approximately 33.74 ha Banksia Woodlands of the Swan Coastal Plan (Floristic Community Type -FCT 28), 35.64 ha of potential Black cockatoo foraging habitat and 54 potential nesting habitat trees (>500mm DBH, *Eucalyptus marginata*).

The proponent proposes to extract sand at a rate of 195,000 tonnes per annum for a period of 10 years. Excavated material will be screened prior to loading. The sand extraction rate, and therein the life of the mine, is variable based on industry demand.

The key characteristics of the proposal are set out in Tables 2 and 3. The key proposal characteristics may change as a result of the findings of studies and investigations conducted and the application of the mitigation hierarchy by the proponent.

**Table 2 Summary of the proposal**

<b>Proposal Title</b>	Lots 2 and 10 Rowley Road Mandogalup Sand Mining
<b>Proponent Name</b>	Questdale Holdings Pty Ltd
<b>Short Description</b>	The proposal involves clearing and sand quarrying as an extension of an existing sand quarry extraction operation on Lots 2 and 10 Rowley Road, Mandogalup. The site is 33 km south of Perth and will operate for approximately 10 years. The proposal will include 4.10 ha of land to be set aside for conservation.

**Table 3 Proposed extent of physical and operational elements**

Element	Location	Proposed extent (this Proposal)
<i>Quarry and associated infrastructure</i>		
Quarry pit	Figure 1	34.64 ha
Screening machine		1
Site compound including: <ul style="list-style-type: none"> <li>• 4000l overhead diesel fuel tank within a fully lined containment bund.</li> <li>• Weighbridge and small office</li> <li>• Portable ablutions unit</li> </ul>	Figure 1	0.5 ha
Total	Figure 1	34.64 ha

### 3. Preliminary key environmental factors and scope of work

The preliminary key environmental factors for the environmental review are:

1. Flora and vegetation
2. Terrestrial fauna
3. Air quality
4. Social surroundings.

Table 4 outlines the work required for each preliminary key environmental factor and contains the following elements for each factor:

- EPA factor and EPA objective for that factor.
- Relevant activities – the proposal activities that may have a significant impact on that factor.
- Potential impacts and risks to that factor.
- Required work for that factor.
- Relevant policy and guidance – EPA (and other) guidance and policy relevant to the assessment.

**Table 4 Preliminary key environmental factors and required work**

Flora and vegetation	
<b>EPA objective</b>	To protect flora and vegetation so that biological diversity and ecological integrity are maintained.
<b>Relevant activities</b>	<ul style="list-style-type: none"> <li>• Vegetation clearing</li> <li>• Topsoil stripping and placement</li> <li>• Material extraction, processing (crushing/screening) and stockpiling</li> <li>• Material removal and haulage</li> <li>• Infrastructure establishment (roads, laydown, stockpiles)</li> <li>• Hydrocarbon and chemical management</li> <li>• Vehicle activity</li> <li>• Uncontrolled or unintended fire</li> </ul>
<b>Potential impacts and risks</b>	<ul style="list-style-type: none"> <li>• Loss of flora and vegetation through clearing for sand mining</li> <li>• Vehicle movements could potentially introduce and/or spread weeds and dieback</li> <li>• Dust generation could potentially smother adjacent native vegetation and flora, thereby retarding growth</li> <li>• Movement of soil due to erosion could potentially increase the risk of spreading weeds and dieback</li> <li>• Increased human presence may increase fire frequency.</li> </ul>
<b>Required work</b>	<ol style="list-style-type: none"> <li>1. Identify and characterise the values and significance of flora and vegetation within the proposed Proposal Area through Flora and Vegetation Surveys. Survey areas should include vegetation that may be directly and indirectly impacted to assist in determination of local and regional impacts. For surveys already undertaken, demonstrate alignment with Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, December 2016). Where multiple surveys have been undertaken to support the assessment, a consolidated report will be provided which integrates the results of the surveys. The consolidated report will provide justification to demonstrate that the surveys undertaken are relevant and consistent with EPA Guidance, and will ensure that database searches and taxonomic identifications are up-to-date.</li> <li>2. Identify, map and assess the values and significance of flora and vegetation within any areas likely to be directly or indirectly impacted by the proposal and describe these values in a local, regional and state context, including threatened/priority ecological communities, threatened/priority flora, and significant flora and significant vegetation as defined by EPA guidance. An analysis of the vegetation and significant flora species present and likely to be present within the disturbance footprint and the Development Envelope (including direct and indirect impact areas outside of the Development Envelope) will be undertaken. An assessment of the significance of flora and vegetation in a local, regional and cumulative context will be included. A quantitative assessment of levels of impact on significant flora, priority ecological communities and all vegetation units will be included, detailing: <ul style="list-style-type: none"> <li>• For significant flora: <ul style="list-style-type: none"> <li>○ number of individuals and populations in a local and regional context;</li> </ul> </li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>○ numbers and proportions of individuals and populations directly or potentially indirectly impacted; and</li> <li>○ numbers/proportions/populations currently protected within the conservation estate (where known).</li> </ul> <ul style="list-style-type: none"> <li>• For significant ecological communities and all vegetation units: <ul style="list-style-type: none"> <li>○ the area (in hectares) and proportions directly or potentially indirectly impacted; and</li> <li>○ proportions/hectares of the species, community or vegetation unit currently protected within the conservation estate.</li> </ul> </li> </ul>
	<p>3. The Federally listed Banksia Woodlands of the Swan Coastal Plain (Floristic Community Type -FCT 28) is mapped in the proposal area. The TEC should be assessed in the proposal area, including:</p> <ul style="list-style-type: none"> <li>• the occurrences of the TEC within the proposal area and adjacent area, relative to known extent;</li> <li>• determination of whether the TEC within the proposal area forms part of a larger patch of the Mandogalup Road Bushland (Bush Forever site 268) to the south-west of the site;</li> <li>• assessment of the TEC within the proposal area and adjacent area against the diagnostic criteria outlined in the <i>Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community</i>;</li> <li>• the potential impact of the proposal on the TEC occurrences, including consideration of the impacts of the development on fragmentation and edge effects, weed invasion and fire management</li> <li>• consideration of the management actions required to protect the occurrences from impacts including increased fragmentation, hydrological change, increased weed invasion, dust, inappropriate fire regimes, rubbish dumping and recreational impacts;</li> <li>• the management actions required for the occurrences to be rehabilitated;</li> <li>• location and size of an area recommended for retention of the TEC in relation to the future sustainability of the vegetation at the site before and after implementation of the proposed clearing;</li> <li>• floristic analysis and discussion of any uncertainties and other possibilities with regard to the identification of the FCT/s, given that FCTs can be similar in composition; and</li> <li>• Shapefiles of significant values including the Banksia Woodlands TEC, and condition mapping should be provided with the reports.</li> </ul> <p>4. Demonstrate that the proposal has been designed in accordance with the mitigation hierarchy. Avoid and minimise impacts including placement of any access roads and infrastructure within vegetated areas and demonstrate that the placement has had regard to utilising existing areas of disturbance.</p> <p>5. Describe and assess the extent of any potential direct, indirect and cumulative impacts as a result of both construction and operational elements of the proposal on flora and vegetation or ecological communities (including those protected under the <i>Biodiversity Conservation Act 2016</i> (BC Act) and EPBC Act) at a local and regional scale.</p> <p>6. Discuss management measures, outcomes/objectives sought to ensure direct and indirect residual impacts (following management) are not greater than predicted.</p> <p>7. Determine and quantify any significant residual impacts by applying the Residual Impact Significance Model (page 11) and WA Offset Template (Appendix 1) in the <i>WA Environmental Offsets Guidelines</i> (2014) and include reference to the Commonwealth</p>

	<p>Assessment Guide for any Matters of National Environmental Significance (MNES). Where significant residual impacts remain, an appropriate offsets package will be proposed, consistent with the WA Environmental Offsets Policy and Guidelines. Spatial data defining the area of significant residual impacts for each environmental value should also be provided (e.g. vegetation type, vegetation condition, specific fauna species habitat).</p> <p>8. To the extent that impacts to EPBC Act listed threatened species and communities cannot be avoided or mitigated, include the following information with regards to offsets:</p> <ul style="list-style-type: none"> <li>• the type of offset/s proposed;</li> <li>• the extent to which the proposed offset correlates to, and adequately compensates for, the residual significant impacts on EPBC Act listed threatened species and communities;</li> <li>• suitability of the location of any proposed offset site for EPBC Act listed species and communities</li> <li>• conservation gain to be achieved by the offset (i.e. positive management strategies that improve the site or averting the future loss, degradation or damage of the protected matter);</li> <li>• time it will take to achieve the proposed conservation gain;</li> <li>• level of certainty that the proposed offset will be successful;</li> <li>• current land tenure of any proposed land-based offset and the method of securing and managing that offset for 20 years or the period of the impact (whichever is less)</li> <li>• demonstrate that the proposed offset is consistent with each of the principles of the <i>EPBC Act Environmental Offsets Policy</i> and provide a completed offsets assessment guide and justification for any figures used to complete the offsets assessment guide.</li> </ul> <p>9. Demonstrate that the proposal has regard for the <i>Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community</i> (TSSC 2016).</p>
<p><b>Relevant policy and guidance</b></p>	<p><b>EPA Policy and Guidance</b></p> <ul style="list-style-type: none"> <li>• <i>Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016</i>, EPA (2016a)</li> <li>• <i>EPA (2016) Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2016</i>, EPA (2016b)</li> <li>• <i>Statement of Environmental Principles, Factors and Objectives</i>, EPA (2016c)</li> <li>• <i>Environmental Factor Guideline: Flora and Vegetation</i> (EPA 2016d)</li> <li>• <i>Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment</i> (EPA 2016e)</li> <li>• <i>WA Environmental Offsets Policy</i> (EPA 2011)</li> <li>• <i>WA Environmental Offsets Guidelines</i> (EPA 2014)</li> </ul> <p><b>Other Policy and Guidance</b></p> <ul style="list-style-type: none"> <li>• <i>How to use the Offsets Assessment Guide</i>:  <a href="http://www.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offsets-how-use.pdf">http://www.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offsets-how-use.pdf</a> (DoEE undated)</li> <li>• EPA (2013) Environmental Protection Bulletin No. 20: Protection of Naturally Vegetated Areas through Planning and Development.</li> <li>• DPaW, Relevant policy and guidelines relating to management of Phytophthora (Dieback) and invasive weeds.</li> </ul>

	<ul style="list-style-type: none"> <li>• <i>Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community</i>, Threatened Species Scientific Committee (2016)</li> <li>• <i>Banksia Woodlands of the Swan Coastal Plain ecological community - Guidance for referrals under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i> (draft), (DEE undated)</li> </ul>
<b>Terrestrial fauna</b>	
<b>EPA objective</b>	To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.
<b>Relevant activities</b>	<ul style="list-style-type: none"> <li>• Vegetation clearing</li> <li>• Topsoil stripping and placement</li> <li>• Material extraction, processing (crushing/screening) and stockpiling</li> <li>• Material removal and haulage</li> <li>• Infrastructure establishment (roads, laydown, stockpiles)</li> <li>• Hydrocarbon and chemical management</li> <li>• Vehicle activity</li> <li>• Uncontrolled or unintended fire</li> </ul>
<b>Potential impacts and risks</b>	<ul style="list-style-type: none"> <li>• Loss of habitat for fauna, including conservation significant species</li> <li>• Increased introduced predator and pest animals</li> <li>• Fauna mortality as a result of clearing activities and vehicle movements</li> <li>• Vehicle movements could potentially introduce and/or spread weeds and dieback</li> <li>• Dust generation could potentially smother native vegetation (fauna habitat), thereby retarding growth</li> <li>• Movement of soil due to erosion could potentially increase the risk of spreading weeds and dieback</li> <li>• Increased human presence may increase fire frequency.</li> </ul>
<b>Required work</b>	<ol style="list-style-type: none"> <li>10. Undertake a desktop study in accordance with EPA guidance to determine the fauna species and fauna habitats likely to be present within the development envelope, and to determine the level of survey required.</li> <li>11. Undertake terrestrial fauna surveys, and conservation significant fauna, of the impact (development envelope) and reference areas (i.e. control sites). All surveys and reporting must be undertaken in accordance with EPA guidance. The degree to which these requirements have been followed should be provided.</li> <li>12. Undertake targeted black cockatoo tree hollow assessment, prior to the submission of the ERD, to determine their suitability for nesting and to confirm if any suitable hollows are in use, or have been used by black cockatoos. Determination of suitability will not be restricted to a ground-based assessment. Determination of suitability will include an assessment of hollow characteristics such as entrance diameter, hollow width, hollow depth, floor structure etc. A targeted assessment will be undertaken to determine the extent and quality of black cockatoo foraging habitat and evidence of night roosting.</li> </ol>

13. Undertake mapping of fauna habitat types and identify the values and significance of fauna habitat and habitat connectivity within the development envelope and other areas likely to be indirectly impacted by the proposal and describe these values in a local, regional and state context. Identify the preferred habitat of significant terrestrial fauna species and illustrate in relation to the proposal any recorded locations of conservation significant terrestrial species.
14. Describe and assess the significance of the potential direct, indirect and cumulative impacts as a result of both construction and operational elements of the proposal on fauna and conservation significant fauna (including those protected under the BC Act and EPBC Act), at a local and regional scale.
15. Discuss the management and mitigation measures (including Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo), outcomes/objectives sought to ensure direct and indirect residual impacts (following management) are not greater than predicted.
16. Demonstrate that the proposal is not inconsistent with and has regard for any relevant conservation advice, recovery plan or threat abatement plan. For black cockatoos, this includes the following advice and plans:
  - *Forest Black Cockatoo (Baudin's Cockatoo Calyptorhynchus baudinii and Forest Red-tailed Black Cockatoo Calyptorhynchus banksii naso) Recovery Plan* (DEC 2008)
  - *Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan* (DPAW 2013)
  - *Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomic* (DoEE 2018)
  - *Approved Conservation Advice for Calyptorhynchus banksii naso (Forest Red-tailed Black Cockatoo)* (DEWHA 2009)
17. Determine and quantify any significant residual impacts by applying the Residual Impact Significance Model (page 11) and WA Offset Template (Appendix 1) in the WA Environmental Offsets Guidelines (2014) and include reference to the Commonwealth Assessment Guide for any Matters of National Environmental Significance (MNES). Where significant residual impacts remain after implementation of avoidance and mitigation measures, compensatory measures such as offsets will be proposed. Spatial data defining the area of significant residual impacts for each environmental value should be provided (e.g. vegetation type, vegetation condition, specific fauna habitat).
18. Demonstrate and document how the EPA's objective for this factor has been considered.
19. To the extent that impacts to EPBC Act listed threatened species and communities cannot be avoided or mitigated, discuss the following information with regards to offsets:
  - the type of offset/s proposed;
  - the extent to which the proposed offset correlates to, and adequately compensates for, the residual significant impacts on EPBC Act listed threatened species and communities;
  - suitability of the location of any proposed offset site for EPBC Act listed species and communities
  - conservation gain to be achieved by the offset (i.e. positive management strategies that improve the site or averting the future loss, degradation or damage of the protected matter);
  - time it will take to achieve the proposed conservation gain;
  - level of certainty that the proposed offset will be successful;
  - current land tenure of any proposed land-based offset and the method of securing and managing that offset for 20 years or the period of the impact (whichever is less)

	<ul style="list-style-type: none"> <li>• demonstrate that the proposed offset is consistent with the <i>EPBC Act Environmental Offsets Policy</i> and provide justification for any values used in offset calculations.</li> </ul> <p>20. For the relevant matters of national environmental significance provide an overall conclusion as to the environmental acceptability of the proposal, including:</p> <ul style="list-style-type: none"> <li>• a discussion on the consideration with the requirements of the EPBC Act, including the objects of the EPBC Act, the principles of ecologically sustainable development and the precautionary principle;</li> <li>• reasons justifying undertaking the proposal in the manner proposed, including the acceptability of the avoidance and mitigation measures; and</li> <li>• if relevant, a discussion of residual impacts and any offsets and compensatory measures proposed or required for significant residual impacts on MNES, and the relative degree of compensation and acceptability.</li> </ul>
Relevant policy and guidance	<p><b>EPA Policy and Guidance</b></p> <ul style="list-style-type: none"> <li>• <i>Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016</i>, EPA (2016a)</li> <li>• <i>EPA (2016) Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2016</i>, EPA (2016b)</li> <li>• <i>Statement of Environmental Principles, Factors and Objectives</i>, EPA (2016c)</li> <li>• <i>Environmental Factor Guideline: Terrestrial Fauna</i> (EPA 2016f)</li> <li>• <i>Technical Guidance – Terrestrial Fauna Surveys for Environmental Impact Assessment</i> (EPA 2004)</li> <li>• <i>Technical Guidance – Sampling Methods for Terrestrial Vertebrate Fauna</i> (EPA 2016g)</li> <li>• <i>WA Environmental Offsets Policy</i> (EPA 2011)</li> <li>• <i>WA Environmental Offsets Guidelines</i> (EPA 2014)</li> </ul> <p><b>Other Policy and Guidance</b></p> <ul style="list-style-type: none"> <li>• EPBC Act 1999.</li> <li>• <i>EPBC Act Environmental Offsets Policy</i> (October 2012)</li> <li>• <i>How to use the Offsets Assessment Guide</i>: <a href="http://www.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offsets-how-use.pdf">http://www.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offsets-how-use.pdf</a> (DEE undated)</li> <li>• <i>EPBC Act Referral Guidelines for Three Threatened Black Cockatoo Species</i> (Commonwealth of Australia 2012)</li> <li>• <i>Survey guidelines for Australia's threatened birds – Guidelines for detecting birds listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999</i>: <a href="https://www.environment.gov.au/system/files/resources/107052eb-2041-45b9-9296-b5f514493ae0/files/survey-guidelines-birds-april-2017.pdf">https://www.environment.gov.au/system/files/resources/107052eb-2041-45b9-9296-b5f514493ae0/files/survey-guidelines-birds-april-2017.pdf</a> (DEWHA 2010).</li> <li>• <i>Forest Black Cockatoo (Baudin's Cockatoo Calyptorhynchus baudinii and Forest Red-tailed Black Cockatoo Calyptorhynchus banksii naso) Recovery Plan</i>: <a href="https://www.environment.gov.au/system/files/resources/48e4fc8c-9cb7-4c85-bc9f-6b847cf4c017/files/wa-forest-black-cockatoos-recovery-plan.pdf">https://www.environment.gov.au/system/files/resources/48e4fc8c-9cb7-4c85-bc9f-6b847cf4c017/files/wa-forest-black-cockatoos-recovery-plan.pdf</a> (DEC 2008)</li> <li>• <i>Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan</i>: <a href="http://www.environment.gov.au/system/files/resources/94138936-bd46-490e-821d-b71d3ee6dd04/files/carnabys-cockatoo-recovery-plan.pdf">http://www.environment.gov.au/system/files/resources/94138936-bd46-490e-821d-b71d3ee6dd04/files/carnabys-cockatoo-recovery-plan.pdf</a> (DPAW 2013)</li> </ul>

	<ul style="list-style-type: none"> <li>• <i>Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomi</i>: <a href="http://www.environment.gov.au/system/files/resources/ee1f3b9f-6e2e-4a01-86f3-6abb167fb443/files/tap-phytophthora-cinnamomi-2018.pdf">http://www.environment.gov.au/system/files/resources/ee1f3b9f-6e2e-4a01-86f3-6abb167fb443/files/tap-phytophthora-cinnamomi-2018.pdf</a> (DoEE 2018)</li> <li>• <i>Approved Conservation Advice for Calyptorhynchus banksii naso (Forest Red-tailed Black Cockatoo)</i>: <a href="http://www.environment.gov.au/biodiversity/threatened/species/pubs/67034-conservation-advice.pdf">http://www.environment.gov.au/biodiversity/threatened/species/pubs/67034-conservation-advice.pdf</a> (DEWHA 2009)</li> </ul>
<b>Air quality</b>	
<b>EPA objective</b>	To maintain air quality and minimise emissions so that environmental values are protected.
<b>Relevant activities</b>	Sand mining and associated activities, including vehicle movements.
<b>Potential impacts and risks</b>	<ul style="list-style-type: none"> <li>• Dust generation from sand mining and associated activities, including vehicle movements may impact upon air quality and amenity at locations including: <ul style="list-style-type: none"> <li>○ existing residential areas approximately 50 m north-east of the Proposal Area</li> <li>○ proposed residential development immediately to the east of the Proposal Area</li> </ul> </li> <li>• Dust generation may also impact upon vegetation should extensive deposition on vegetation occur</li> <li>• Crushing and screening of materials</li> <li>• Stockpiling of bulk materials</li> <li>• Operations that include transport, loading, unloading and storage of bulk materials</li> </ul>
<b>Required work</b>	<p>Dust:</p> <ol style="list-style-type: none"> <li>21. Identify the potential sources of dust emissions during the life of the Proposal</li> <li>22. Provide an evaluation of cumulative impacts for the assessment of air quality impacts, giving consideration to the DWER LIDAR study in Mandogalup – <i>Mapping dust plumes in Mandogalup using a LIDAR</i></li> <li>23. Develop a dust management and monitoring plan to outline monitoring and management methods to mitigate impacts to sensitive receivers, giving consideration to the nearby existing residential area and future residences on adjoining land and how impacts will be managed to acceptable levels</li> <li>24. Predict the residual air quality impacts on sensitive receivers for each stage of operations, including land clearing, operations and post-closure rehabilitation</li> </ol> <p>Greenhouse gas emissions:</p> <ol style="list-style-type: none"> <li>25. Estimate greenhouse gas emissions direct and indirect from the proposal and assess the relative contribution to region, state, national and international greenhouse gas emissions.</li> </ol>
<b>Relevant policy and guidance</b>	<p><b>EPA Policy and Guidance</b></p> <ul style="list-style-type: none"> <li>• <i>Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016</i>, EPA (2016a)</li> <li>• <i>EPA (2016) Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2016</i>, EPA (2016b)</li> </ul>

	<ul style="list-style-type: none"> <li>• <i>Statement of Environmental Principles, Factors and Objectives</i>, EPA (2016c)</li> <li>• <i>Environmental Factor Guideline: Air Quality</i> (EPA 2016h)</li> </ul> <p><b>Other Policy and Guidance</b></p> <ul style="list-style-type: none"> <li>• <i>Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999</i></li> <li>• <i>Environmental Protection (Kwinana) (Atmospheric Wastes) Regulations 1992</i></li> <li>• <i>National Environment Protection (Ambient Air Quality) Measure</i></li> <li>• <i>National Greenhouse and Energy Reporting Act 2007</i></li> <li>• <i>A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities</i> (DEC 2011)</li> <li>• <i>Air Quality Modelling Guidance Notes</i> (DoE 2006)</li> <li>• <i>Mapping dust plumes at Mandogalup using a LiDAR</i> (DWER 2019)</li> <li>• <i>Consideration of potential health and amenity impacts of dust in determining the size of a buffer for urban development in the Mandogalup area</i> (EPA 2017)</li> </ul>
<b>Social surroundings</b>	
<b>EPA objective</b>	To protect social surroundings from significant harm.
<b>Relevant activities</b>	<ul style="list-style-type: none"> <li>• Vegetation clearing</li> <li>• Topsoil stripping and placement</li> <li>• Material extraction, processing (crushing/screening) and stockpiling</li> <li>• Material removal and haulage</li> <li>• Infrastructure establishment (roads, laydown, stockpiles)</li> <li>• Hydrocarbon and chemical management</li> <li>• Vehicle activity</li> <li>• Uncontrolled or unintended fire</li> </ul>
<b>Potential impacts and risks</b>	<ul style="list-style-type: none"> <li>• Dust from sand mining and associated activities, including vehicle movements (addressed under Air Quality, above)</li> <li>• Noise emissions from quarrying and associated activities, including vehicle movements impacting amenity of existing and proposed residential areas.</li> </ul>
<b>Required work</b>	<p>Noise</p> <p>26. Undertake a detailed noise assessment, conducted by a person competent in environmental noise assessment, including a detailed assessment of (but not limited to) the below:</p> <ul style="list-style-type: none"> <li>• measurement of ambient noise levels at all closest existing and future residential premises to the North east and east</li> <li>• predict noise emission levels from various stages of the proposed operation by running a recognised computer noise model</li> </ul>

	<ul style="list-style-type: none"> <li>• assess the noise compliance with the assigned noise levels for each of the operation stages at all closest neighbouring residential premises – both existing and future</li> <li>• detail management and control measures that are required to ensure noise compliance at all operation stages</li> </ul> <p>27. Provide a summary of residual impacts (following management) of the proposal and discuss management measures to ensure these impacts (direct and indirect) are not greater than predicted.</p> <p>28. Identify measures to mitigate adverse impacts to social surroundings.</p> <p>29. Demonstrate and document how the EPAs objective for this factor has been considered.</p>
<b>Relevant policy and guidance</b>	<p><b>EPA Policy and Guidance</b></p> <ul style="list-style-type: none"> <li>• <i>Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016</i>, EPA (2016a)</li> <li>• <i>EPA (2016) Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2016</i>, EPA (2016b)</li> <li>• <i>Statement of Environmental Principles, Factors and Objectives</i>, EPA (2016c)</li> <li>• <i>Environmental Factor Guideline: Social surroundings</i> (EPA 2016i)</li> </ul> <p><b>Other Policy and Guidance</b></p> <ul style="list-style-type: none"> <li>• <i>Environmental Protection (Noise) Regulations 1997</i></li> <li>• EPA (2005) <i>Guidance Statement 3: Separation Distances between Industrial and Sensitive Land Uses</i>.</li> </ul>

#### 4. Other environmental factors or matters

No other environmental factors or matters have been identified that are required to be addressed during the environmental review and discussed in the Environmental Review Document.

#### 5. Stakeholder consultation

The proponent must consult with stakeholders who are affected by, or are interested in the proposal. This includes the decision-making authorities (see section 6), other relevant state (and Commonwealth) government agencies and local government authorities and nearby residents.

Specific stakeholders that must be consulted are:

- Commonwealth Department of the Environment and Energy (DoEE)
- Department of Water and Environmental Regulation (DWER)
- Department of Biodiversity, Conservation and Attractions (DBCA)
- Western Australian Planning Commission (WAPC)
- Department of Mines and Petroleum (DMP)
- City of Kwinana (CoK)
- Nearby residents.

The proponent must document the following in the Environment Review Document:

- identified stakeholders

- the stakeholder consultation undertaken and the outcomes, including decision-making authorities' specific regulatory approvals and any adjustments to the proposal as a result of consultation
- any future plans for consultation.

## 6. Decision making authorities

At this stage, the EPA has identified the following decision-making authorities for the proposal. Additional decision-making authorities may be identified during the assessment.

**Table 5 Decision making authorities**

Decision making authority	Relevant legislation
Chief Executive Officer, Department of Biodiversity, Conservation and Attractions	<i>Biodiversity Conservation Act 2016</i> – taking of flora and fauna
Western Australian Planning Commission (WAPC)	<i>Planning and Development Act 2005</i> – planning approval on or abutting regional reserves
Chief Executive Officer, Department of Water and Environmental Regulation (DWER)	<i>Environmental Protection Act 1986</i> - works approval and registration/licence Environmental Protection (Clearing of Native Vegetation) Regulations 2014 – Clearing Permit
Department of Mines, Industry Regulation and Safety (DMIRS)	<i>Mining Act 1978</i> <u>Dangerous Goods</u> Dangerous Goods Safety Act 2004 Storage and handling of hazardous materials Chief Dangerous Goods Officer <u>Mine Safety</u> Mines Safety and Inspection Act 1994 District Inspector, Resources Safety Branch
Chief Executive Officer, City of Kwinana (CoK)	<i>Planning and Development Act 2005</i> - planning approval <i>Extractive Industries Local Law</i> - Extractive industry licence

## 7. References

Commonwealth of Australia, 2012. *EPBC Act Referral Guidelines for Three Threatened Black Cockatoo Species*. Commonwealth of Australia, Canberra.

Department of Environment (DoE), 2006. *Air Quality Modelling Guidance Notes*. DoE, Western Australia.

Department of Environment, Water, Heritage and Arts (DEWHA), 2010. *Survey guidelines for Australia's threatened birds – Guidelines for detecting birds listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999*: Commonwealth of Australia, Canberra.

Department of Environment and Conservation (DEC), 2002. *Forest Black Cockatoo (Baudin's Cockatoo *Calyptorhynchus baudinii* and Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso*) Recovery Plan*. DEC, Western Australia.

Department of Environment and Conservation (DEC), 2011. *A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities*. DEC, Western Australia.

Department of Parks and Wildlife (DPAW), 2013. *Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan*. DPAW, Western Australia.

Department of Environment and Energy (DoEE), 2018. *Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomic**. Commonwealth of Australia, Canberra.

Department of Environment, Water, Heritage and Arts (DEWHA), 2010. *Approved Conservation Advice for *Calyptorhynchus banksii naso* (Forest Red-tailed Black Cockatoo)*. Commonwealth of Australia, Canberra.

Department of Water and Environmental Regulation (DWER), 2019. *Mapping dust plumes at Mandogalup using a LiDAR*. DWER, Western Australia.

Environmental Protection Authority (EPA) 2004. *Technical Guidance – Terrestrial Fauna Surveys for Environmental Impact Assessment*. EPA, Western Australia.

Environmental Protection Authority (EPA) 2005. *Guidance Statement 3: Separation Distances between Industrial and Sensitive Land Uses*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2011. *WA Environmental Offsets Policy*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2013. *Environmental Protection Bulletin No. 20: Protection of Naturally Vegetated Areas through Planning and Development*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2014. *WA Environmental Offsets Guidelines*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2016a. *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2016b. *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2016*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2016c. *Statement of Environmental Principles, Factors and Objectives*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2016d. *Environmental Factor Guideline: Flora and Vegetation*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2016e. *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2016f. *Environmental Factor Guideline: Terrestrial Fauna*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2016g. *Technical Guidance – Sampling Methods for Terrestrial Vertebrate Fauna*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2016h. *Environmental Factor Guideline: Air Quality*. EPA, Western Australia.

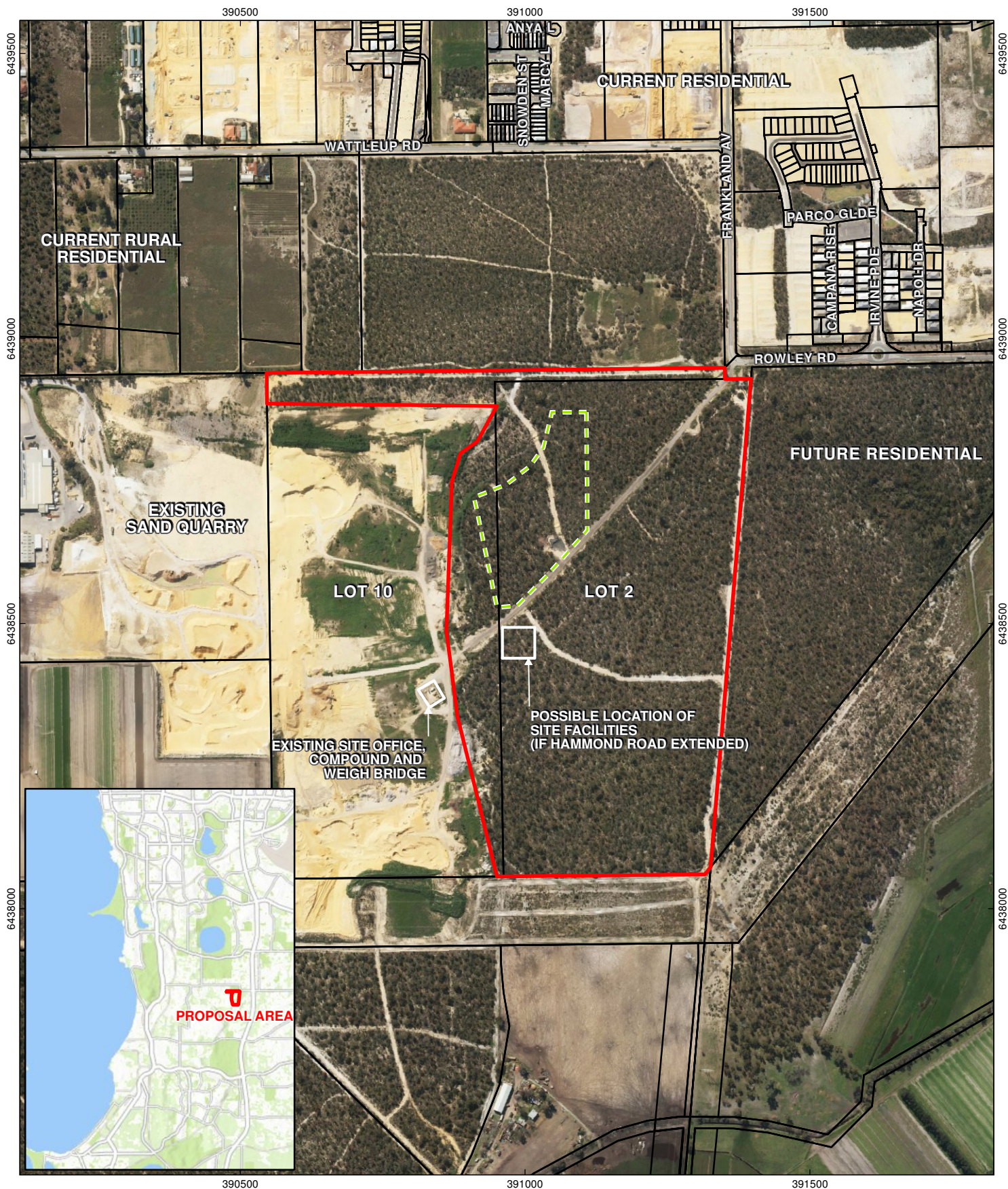
Environmental Protection Authority (EPA), 2016i. *Environmental Factor Guideline: Social surroundings*. EPA, Western Australia.

Environmental Protection Authority (EPA), 2017. *Consideration of potential health and amenity impacts of dust in determining the size of a buffer for urban development in the Mandogalup area*. EPA, Western Australia.

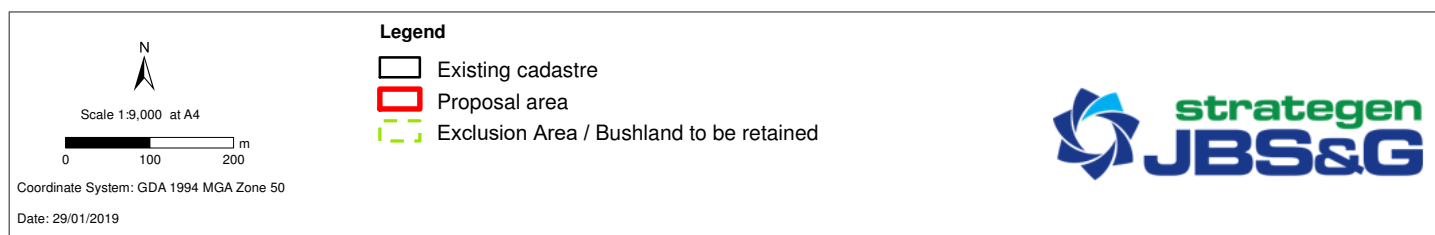
Threatened Species Scientific Committee, 2016. *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community*.

## Figures





**Figure 1: Proposal area**



Q:\Consult\2017\QPG\QPG17054\ArcMap\_documents\QPG17054\_G003\_RevD.mxd

© 2017. Whilst every care has been taken to prepare this map, Strategen & Qube Property Group makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Aerial Image - SLIP Public Services 2018. Landgate: Cadastre, 11/2017. Client: Qube Property Group. Development layout, 08/2018. Created by: c.thatcher