

ADDITIONAL SUPPORTING INFORMATION FOR ANNEX C7 CLEARING PERMIT APPLICATION LOT 195 GREAT NORTHERN HIGHWAY, MUCHEA

RELEVANT IMPACTS

Environmental Impacts

Fauna

The fauna species most likely to be affected are Carnaby's Black Cockatoo and Forest Red-tailed Cockatoo. The Referral Area is thought to contain some foraging habitat and potential future breeding and night roosting habitat for these two species.

The Referral Area contains 23 trees over 500 mm breast diameter height (16 Marri and seven Jarrah) that are considered potential future breeding habitat based on DSEWPaC (2011) guidelines with two trees considered current potential breeding habitat. Of these 23 trees 16 are in the clearing footprint while 7 are adjacent and may be impacted indirectly (e.g. lopping of branches near buildings). However, previous fauna surveys have not found any evidence of Black Cockatoo currently breeding within the Referral Area. In addition, there are known night roosts in the vicinity as recorded by Phoenix (2015) and Ecological (2013), as well as significant foraging grounds e.g. the Gngangara Pine Plantation. Given the small impact area (direct and indirect) of the proposed action (13.7 ha direct; includes 13 Marri and three Jarrah trees, indirect; three Marri and four Jarrah over 500 mm diameter) (Biologic, 2016), the mobile nature of the species, the lack of current breeding evidence, and the number of recorded night roosts and feeding grounds in the vicinity of the Referral Area, the proposed actions are not likely to have significant impacts on these species.

Other threatened species identified as potentially occurring within the Referral Area are considered as either migratory or unlikely to reside long-term due to habitat type and quality, and therefore the proposed action is also not likely to have a significant impact on these species.

Flora

The results of a search carried out using the EPBC Act Protected Matters Search Tool (DotEE, 2017a) listed 17 flora species, or the species habitat, protected by the EPBC Act that may, are likely or are known to occur within 5 km of the Survey Area – one Critically Endangered species, 12 Endangered species and four Vulnerable species.

Three of these 17 species were listed in NatureMap and Department of Parks and Wildlife (DPaW) database search results as occurring within 5 km of the Survey Area – *Acacia anomala*, *Grevillea curviloba* subsp. *incurva* and *Thelymitra stellata*. One additional species that was not included in the EPBC Act Protected Matters Search Tool results but is listed as Endangered under the EPBC Act, *Grevillea althoferorum* subsp. *fragilis*, was listed in the NatureMap and DPaW search results as occurring within 5 km of the Survey Area. None of these species were recorded by Maia during surveys carried out in March and October 2016.

Impacts upon existing flora within the Referral Area are calculated assuming all of the area will be cleared (13.7 ha); however, this will not be the case. While a defined infrastructure area will be cleared, small patches of native vegetation (approximately 3 ha) will be retained for landscaping in the Referral Area.

Two confirmed priority flora species (*Acacia drummondii* subsp. *affinis* and *Haemodorum loratum* (both P3)) and two potentially conservation significant flora species (*Haemodorum ?loratum* (potential P3) and *Grevillea ?drummondii* (potential P4)) were located in the Survey Area and all will be impacted by clearing for the Referral Area.

Impact to *Acacia drummondii* subsp. *affinis* will be approximately 3%, 11% to *Haemodorum loratum* (when combined with *Haemodorum ?loratum*) and less than 1% to *Grevillea ?drummondii*.

Based on the number of plants located in areas searched away from the Referral Area but within the Survey Area, it is likely more plants of each of these species would be found outside of the Survey Area and that the impacts to these species will actually be less than those calculated.

Ecological Communities

Maia mapped and described three vegetation types (MVTs) in the Referral Area: *Eucalyptus* Mallee Woodland (**EtMWL** (1)), *Corymbia* and *Eucalyptus* Forest (**CcEmF** (2)) and *Eucalyptus* and *Corymbia* Forest (**EmCcF** (3)).

One of the MVTs mapped in the Referral Area (**EtMWL** (1)) matches most of the criteria for the federally protected Banksia Woodlands of the Swan Coastal Plain threatened ecological community but lacks the characteristic dominant *Banksia* tree / shrub stratum. The ecological community occurs on the Swan Coastal Plain and is characterised by a prominent tree layer of *Banksia* with scattered eucalypts (DotEE, 2017b).

Quadrats sampled by Maia in the Survey Area were compared with sites surveyed by Gibson *et al.* (1994) from a floristic survey of the southern Swan Coastal Plain (SCP survey) using the methodology outlined in Maia (2017). Quadrats sampled in MVT **EtMWL** (1) grouped with SCP survey sites from FCT21c and FCT28 in the regional analysis and both FCTs are included in the TEC.

MVT **EtMWL** (1) is described as a Mallee Woodland of *Eucalyptus todtiana* with a Low Shrubland of *Eremaea pauciflora* var. *pauciflora*, *Hibbertia hypericoides* subsp. *hypericoides* +/- Tall Scattered Shrubs of *Banksia menziesii* and *B. attenuata*. The condition of the vegetation at one of the three quadrats assessed in this vegetation type was rated as Excellent (2), at another it was rated as Very Good (3) and at the third as Good (4). The average condition rating for this vegetation type was Very Good and the main disturbance noted was previous clearing. The vegetation of the Referral Area including areas comprising MVT **EtMWL** (1) has been disturbed in the past with varying degrees of regeneration noted throughout.

Based on Google Earth imagery (Google Inc., 2017) most of the visible disturbance occurred prior to 2004 (the oldest Google Earth image of the Referral Area is dated 18/12/2004). There arent any obvious changes in canopy density between the image taken in 2004 and that taken in 2016. There is also evidence of waste water and depositional silt draining onto the vegetation in the south-west of the Referral Area from the neighboring quarry pit which may have affected species regeneration.

MVT *EtMWL* (1) occurs in lower lying areas with a surface layer of deep white sand in the south-western section of the Referral Area. A similar vegetation type was noted in an adjacent lot south of the Referral Area with a dominant *Banksia* tree and tall shrub stratum and this may represent a less disturbed patch of this vegetation type.

Although MVT *EtMWL* (1) meets most of the criteria for the *Banksia* Woodlands TEC, it is lacking the characteristic *Banksia* stratum due to historical disturbance within the Referral Area. The proposed action is not expected to have a significant environmental impact at a national, regional or local scale and can be managed through appropriate environmental management measures.

Social Impacts

As the proposal involves privately owned land with no identified or recognised European or Aboriginal cultural heritage significance, the social impacts associated with its implementation are considered to be negligible aside from an increase in the number of people working on the land which could prove beneficial to the local community in terms of increased population and employment opportunities.

Economic Impacts

The clearing and subsequent development of a new warehouse and transport depot on portion of the land as proposed is expected to cost in the order of \$700,000 excluding land acquisition and statutory approval costs and will generate employment for a wide range of local contractors during the construction phase of the project.

Following completion of construction the proposed warehouse use is expected to create full-time employment opportunities for a maximum of twenty five (25) staff members. Additionally the transport depot use is expected to create full time employment opportunities for up to eight (8) staff members.

FEASIBLE ALTERNATIVES

Despite a detailed assessment of the land during the preliminary planning stages of

the project, no feasible alternatives to the location of the proposed development and use for warehouse and transport depot purposes were identified due to:

- a) the lack of suitably zoned and serviced land in other parts of the Muchea locality;
- b) the nature and extent of existing constraints on the subject land including a small, centrally located intermittent water course which forms part of the highly protected Ellen Brook catchment and clay type soils in the majority northern portion of the property which are highly reactive and costly to develop; and
- c) the current road widening action being progressed by Main Roads Western Australia along the land's frontage to Great Northern Highway and the limited opportunities now available for practical and safe access by heavy vehicles.

POSSIBLE MITIGATION MEASURES

Avoidance & Mitigation Measures

The impacts arising from the proposed development of Lot 196 have been calculated assuming all of the Referral Area will be cleared. It should however be noted this will not be the case. While a defined development area will be cleared, small patches of native vegetation comprising a total combined area of up to 3 hectares will be identified and retained for landscaping purposes along the north-western boundary of the Referral Area.

Having regard for the findings and recommendations contained in the Level 2 Flora and Vegetation Assessment by Maia Environmental Consultancy dated 9 March 2017, the following avoidance and mitigation measures are proposed within the Referral Area:

1. The Referral Area boundaries will be clearly identified and marked out by a licensed surveyor prior to construction and vegetation will only be cleared within these boundaries insofar as is required to accommodate the proposed development;
2. Areas to be landscaped within the Referral Area will retain existing native vegetation wherever possible;
3. Every effort will be made to prevent the introduction of new weeds into the area on machinery used for the construction and ongoing works as well as the spread

- of existing weeds from the Referral Area to the wider area of Lot 195;
4. Standard Phytophthora Dieback hygiene practices will be employed to prevent the introduction or spread of the disease into susceptible native vegetation in areas around the Referral Area;
 5. Access to remnant native vegetation outside of the Referral Area but within Lot 195 will be restricted in order to prevent the spread of weeds, Phytophthora Dieback and to avoid unnecessary damage to the native vegetation and conservation significant flora; and
 6. Existing fences around the boundaries of Lot 195 will be maintained to prevent grazing animals (sheep and horses) from adjacent properties accessing ungrazed areas of remnant vegetation. New fences will also be constructed around the boundary of the Referral Area to restrict access to the adjacent remnant vegetation on Lot 195.

Plan Outline

The following plan outline will be refined and implemented subject to the issuance of approval to a development application previously submitted to the Shire of Chittering for determination, the processing of which is currently being held in abeyance pending approval to this clearing permit application:

- Engagement of a licensed surveyor to identify and mark out, in close consultation with the project's environmental consultants, the Referral Area boundaries and those areas proposed to be landscaped including all native vegetation to be protected and retained;
- Preparation and implementation of a weed management plan including ongoing monitoring of its effectiveness by the project's environmental consultants ;
- Preparation and implementation of a Phytophthora Dieback management plan including ongoing monitoring of its effectiveness by the project's environmental consultants; and
- Repairs and upgrades to all existing fencing around the boundaries of Lot 195 and the installation of new fencing around the Referral Area to help prevent the spread of weeds, Phytophthora Dieback and to avoid unnecessary damage to the native vegetation and conservation significant flora including ongoing checking and maintenance works by the applicant/landowner.

It is anticipated the Shire of Chittering will impose a number of conditions on any development approval ultimately issued requiring various elements of the abovementioned plan to be implemented to facilitate the long term retention and protection of all remaining native vegetation on the land.

Proposed Offset Package

If the avoidance and mitigation measures outlined above are considered unacceptable, the applicant / proponent is willing to consider instructing the project environmental consultants Maia Environmental Consultancy and Biologic Environmental Survey Pty Ltd to prepare and implement a rehabilitation and revegetation management and monitoring plan for a separate 15 hectare portion of Lot 195 to achieve a net gain in size, density and diversity of native vegetation and an overall improvement in the condition of the subject land's natural environment which has been degraded as a result of previous historic land usage including basic raw material extraction (i.e. clay mining) and broadacre agriculture (i.e. grazing).

In addition to the above the applicant / proponent is willing to allow for the preparation and registration on title of a conservation covenant over the area the area subject to the proposed rehabilitation and revegetation management and monitoring plan to facilitate the long term retention and protection of native vegetation.

If the abovementioned proposals are still considered unacceptable for whatever reason, the applicant / proponent is willing to consider the alternative option of making a monetary contribution to a fund maintained specifically for the purpose of establishing and/or maintaining vegetation.

Offset Package Analysis

The proposed offset package outlined above is considered to satisfy the requirements of the *Environmental Protection Act 1986* Offsets Policy for the following reasons:

1. The applicant / proponent is committed to implementing an offset package

considered acceptable to the relevant Federal, State and Local Government authorities, has a proven track record of environmental management guided by their own in-house policy procedures and has the financial capacity to provide for its effective and timely delivery;

2. The direct offsets proposed will provide for the long term retention and protection of native vegetation on land which has historically been poorly managed by previous landowners and faces the continued risk of being degraded or destroyed if there's no incentive for the new landowner to implement more contemporary and environmentally acceptable land management practices;
3. The proposed offsets are considered to be proportionate to the size and scale of the residual impacts arising from the proposed clearing works, will be tailored to deliver an achievable conservation gain that adequately compensates for those impacts and will be enduring over the long term; and
4. As the land is not subject to any site specific environmental or conservation protection requirements and does not form part of an existing conservation area or estate, the proposed offset package could be expected to deliver a new and highly beneficial conservation gain.
5. Given the studies commissioned to-date, a sound foundation has been laid for formulation and delivery an offset package that is transparent and scientifically robust.
6. The applicant / proponent is committed to implementing the offset package at the same time the land is being developed to accommodate the proposed new warehouse and transport depot uses and is willing to consider annual reporting on the success of the offsets if required so that any conditions of approval can be varied if the offsets are not delivering the desired outcome.

References

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