

Clearing Desktop Report – Short Form

1. PROJECT DETAILS

Project Name:	Thomas Road and Kargotich Road Intersection		
Region/Directorate:	Metro		
Expected Project Start Date:	Early 2022		
Road/Bridge Name and No:	Thomas Road and Kargotich Road		
Project Location (SLK):	Thomas Road SLK 16.94 and Kargotich Road SLK 3.18		
TRIM Document No:	D21#553531		
TRIM Link to Spatial Data:	D21#426822		
EOS No:	1543		
Project No:	21114540	Task Code:	11.01

2. PURPOSE OF CLEARING

There has been a notable amount of right-angle and through-right Killed/Serious Injury (KSI) crashes at the intersection of Thomas Road and Kargotich Road. This Proposal involves the upgrade of the existing Thomas Road and Kargotich Road intersection by installing a single lane roundabout with left-turn filter lanes to facilitate safe movement of traffic. The extent of works will be no more than:

- 250 m on Kargotich Road north and south legs, and;
- 1 km to the east and west on the Thomas Road legs.

As part of the upgrade, Main Roads will acquire additional land to extend the Road Reserve to allow for intersection improvements.

Additional works will include;

- Existing bridge #4453 to be replaced with a culvert treatment,
- Fence line relocation for the property boundary on the North West side of the intersection,
- Modification of the existing Water Corporation (WC) surface V-Drain on the northern alignment of Thomas Road, and
- Installation of subsurface storm water drains to direct runoff toward the WC V-Drain.

3. ALTERNATIVES TO CLEARING

The proposal has considered options to minimise the need for clearing of native and planted vegetation by using pre-cleared agricultural land and the existing cleared road alignment area.

4. MEASURES TO AVOID, MINIMISE, MITIGATE AND MANAGE PROJECT CLEARING IMPACTS

Design or Management Measure	Discussion and Justification
Steepen batter slopes	Slopes and batters associated with the design are largely within areas of cleared land and degraded planted vegetation.
Installation of safety barriers	The installation of safety barriers north of the intersection adjacent to the WC open drain is proposed. This will allow steep batters and culverts to be installed and maintain surface drainage along the Birriga Drain. Clearing requirements will be reduced due to safety barrier installations.
Alignment to one side of existing road	The widening of Thomas Road to the south is proposed and minimal increase to the north. This has ensured that a 0.26 ha portion of native vegetation (<i>Allocasuarina fraseriana</i>) north of Thomas Road is avoided. Road widening works to the south will only impact 0.09 ha of native vegetation with the remaining development area to occur within cleared pasture and degraded planted vegetation.
Alternative alignment to follow existing road (or) to preferentially locate within pasture or a degraded areas	<p>As noted above, road widening works are to occur south of the Thomas Road alignment. The majority of works are to occur within existing cleared pasture area and planted vegetation. In addition to avoiding impact to 0.26 ha of native vegetation to the north of Thomas Road (as stated above), the existing WC stormwater drain to the north of Thomas Road will be largely avoided with the exception of the northern portion of the roundabout. In this section, culverts will be installed to replace the existing bridge structure.</p> <p>The majority of the proposal area north of Thomas Road is located within Main Roads WA Road Reserve with the exception of small portions of state crown land and Freehold land immediately east and west of Kargotich Road. South of Thomas Road the majority of road widening works occurs outside of the existing Road Reserve on Freehold land. Up to 0.10 ha of native vegetation may be cleared outside the existing Road Reserve.</p> <p>Main roads is currently acquiring land outside of the Road Reserve, land will be acquired prior to commencing works and all vegetation clearing will occur within Main Roads WA Road Reserve.</p>
Installation of kerbing	Kerbing is to be installed for the roundabout intersection improvements; kerbing does not exist along the road alignment and is not proposed for the proposed alignments of Thomas or Kargotich Roads.
Simplification of design to reduce number of lanes and/or complexity of intersections	The proposed works cannot be further simplified whilst retaining the necessary safety benefits. The intersection upgrade will involve the widening of Thomas Road to the south; works will avoid impact to the existing stormwater drain and native vegetation north of Thomas Road.
Preferential use of existing cleared areas for access tracks, construction storage and stockpiling	The site office, materials storage areas, construction vehicles/machinery and access tracks will be located on previously disturbed or cleared areas immediately adjacent to the proposal area.
Drainage modification	The existing stormwater drain has been utilised wherever possible to reduce the amount of additional drainage infrastructure being installed. The proposal will include the installation of culvert drains directing surface water flows to the existing stormwater drain north of Thomas Road.

5. APPROVED POLICES AND PLANNING INSTRUMENTS

The clearing of native vegetation in Western Australia is regulated under the *Environmental Protection Act* (EP Act) and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.3), Main Roads has also had regard to the following documents.

Environmental Protection Policies

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011

Other Legislation of relevance for assessment of clearing and planning/other matters

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)
- *Rights in Water and Irrigation Act 1914* (WA) (RIWI Act)
- *Aboriginal Heritage Act 1972* (WA) (AHA)
- *Town Planning and Development Act (WA) 1928*

Relevant other policies and guidance documents:

- Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (DEC, December 2014)
- Procedure: Native vegetation clearing permits (DWER, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, August 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities
- Approved Recovery Plans for threatened species
- EPBC Act Referral guidelines for the three threatened black cockatoo species
- Strategic advice - EPA

6. CLEARING AREA

Clearing Area (ha):	Up to 0.30 ha of native vegetation.	No. Trees Cleared:	-
Species Name:	<ul style="list-style-type: none">• <i>Allocasuarina fraseriana</i>• Eucalyptus sp.? isolated trees• <i>Melaleuca ?preissiana</i>		
Co-ordinates :	<ul style="list-style-type: none">• Latitude: 32°12'26.5"S• Longitude: 115°57'11.2"E		

7. EXISTING ENVIRONMENT AND SITE INFORMATION

	Summary of Proposal Area's Mapped Pre-European Vegetation Associations			
	Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Site Vegetation Description/Association:	Pinjarra_968 Beard association described as Jarrah, marri and wandoo <i>Eucalyptus marginata</i> (Jarrah), <i>Corymbia calophylla</i> (Marri), E. wandoo (Wandoo) woodland.	Clearing of up to 0.30 ha for road widening and intersection upgrade works	Completely Degraded	Vegetation description and condition determined from Main Roads site visits on 18 June 2019 and 30 November 2020 and aerial imagery.
	<p>Two site inspections of the proposal area (comprising a single phased Detailed Flora Survey and Targeted Flora Survey) were completed by Main Roads in June 2019 and again in November 2020 to assess the flora and vegetation values associated with the proposal.</p> <p>The proposal area contains small patches of native remnant vegetation (0.74 ha), along with planted and completely cleared areas. Native vegetation within the proposal area comprised:</p> <ul style="list-style-type: none"> • <i>Allocasuarina fraseriana</i> isolated trees over weeds (0.71 ha) • <i>Eucalyptus</i> sp. isolated trees over weeds (0.02 ha) • <i>Melaleuca ?preissiana</i> isolated trees over weeds (0.01 ha) <p>A total of five introduced flora species were recorded within the proposal area. These included weed species listed below:</p> <ul style="list-style-type: none"> • <i>*Conyza parva</i> • <i>*Ehrharta longiflora</i> • <i>*Eragrostis curvula</i> <p>None of the recorded introduced flora species are Declared pest species under the <i>Biodiversity and Agriculture Management Act 2007</i>.</p> <p>No conservation significant flora or fauna were recorded during the two site inspections. Inspections were conducted in June 2019 and November 2020, which is outside the optimum survey period for the region. However, the data recorded from the assessment is considered adequate to determine the vegetation types and biological values, given the completely degraded condition of the vegetation.</p>			
Site Vegetation Condition:	All of the vegetation is Completely Degraded. The proposal area has been subject to high levels of disturbance from historical clearing and agricultural land uses. The proposal area contains high levels of weeds, with the understorey dominated by introduced grasses.			

Pre-European Extent Remaining (%):	Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
	Veg Association No. 968	Statewide WA	296,877.84	95,048.82	32.02	57.64
		IBRA Bioregion SWA	136,188.20	9,017.32	6.62	21.61
		IBRA Sub-region SWA2	136,188.20	9,017.32	6.62	21.61
		Local Government Authority Shire of Serpentine-Jarrahdale	24,351.49	1,121.13	4.60	12.49

8. ASSESSMENT OF PROJECT AGAINST CLEARING PRINCIPLES

Is Vegetation to be cleared at variance with:	Justification or Evidence:
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<p>Principle (a) – Native vegetation should not be cleared if it comprises a high level of biological diversity.</p>	<p>The proposal area contains small patches of native remnant vegetation (0.74 ha) along with planted and completely cleared areas. Up to 0.30 ha of native vegetation is proposed to be cleared, comprising the following:</p> <p>Native vegetation within the proposal area comprises:</p> <ul style="list-style-type: none"> • <i>Allocasuarina fraseriana</i> isolated trees over weeds (0.71 ha) • <i>Eucalyptus</i> sp. isolated trees over weeds (0.02 ha) • <i>Melaleuca ?preissiana</i> isolated trees over weeds (0.01 ha) <p>All of the vegetation within the proposal area is in a Completely Degraded condition. The proposal area has been subject to a high level of disturbance from historical clearing and agricultural land use activities. The proposal area contains a high level of weeds and an understorey dominated by introduced grasses.</p> <p>No significant flora or fauna were recorded during the two site inspections. Inspections were conducted outside the optimum survey period however recorded data is considered adequate to determine vegetation types and biological values given the completely degraded condition of the vegetation.</p> <p>A desktop assessment of significant fauna species within 5 km of the proposal area indicated up to 20 species had potential to occur in the proposal area. Following the site surveys, it was concluded that, with the possible exception of black cockatoo species, vegetation to be cleared is unlikely to provide habitat for significant fauna, given it is adjacent to an existing road and in a completely degraded condition, within an area that has been subject to high levels of previous disturbance.</p> <p>The proposal includes clearing of up to 0.30 ha of low quality potential black cockatoo habitat. Based on the relatively minor area of vegetation clearing proposed, its completely degraded condition, and the absence of any suitable breeding habitat, the proposed clearing is unlikely to result in a significant impact on black cockatoo species.</p> <p>Desktop searches identified 12 Threatened and six Priority flora species with potential to occur within 5 km of the proposal area. A likelihood of occurrence assessment was undertaken following the Detailed and Targeted Flora Surveys and concluded that no significant flora species were considered as likely or possible to occur in the proposal area due to a lack of preferred habitat and the highly degraded state of the vegetation.</p> <p>The site inspection confirmed that none of the vegetation in the proposal area is representative of any state or federally listed PECs or TECs.</p>
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<p>Principle (b) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.</p>	<p>A desktop assessment of significant terrestrial fauna species within 5 km of the proposal area identified 20 species with the potential to occur. Listed species ranged from Priority 4 (BC Act) to Critically Endangered (EPBC Act) conservation status. Two site inspections did not record any significant fauna within the proposal area. Vegetation to be cleared comprises narrow strips adjacent to a busy road and is in a completely degraded condition. It is therefore not considered likely to provide valuable habitat for any significant fauna species.</p> <p>No trees of suitable diameter at breast height (DBH) for Black Cockatoo breeding were identified during the two site inspections in the proposal area. The proposal area provides limited potential foraging habitat value for Black Cockatoos and is considered unlikely to be a significant food source for the species, given that only isolated trees occur.</p> <p>The removal of Low quality foraging habitat is unlikely to be significant for Black Cockatoos considering that the species is highly mobile, habitat is highly degraded and no breeding or roosting trees occur. The removal of up to 0.30 ha of poor quality foraging habitat is unlikely to cause a long-term decrease in the population of Black Cockatoo's given, the extent of available better high quality foraging habitat in the vicinity including approximately 1400 ha within Jandakot Regional Park (approximately 2.5km east of the proposal area).</p> <p>Given the above, the project is not likely to be at variance with this principle.</p>
<p>Principle (c) – Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.</p>	<p>Two site inspections were conducted by Main Roads Environmental Officers on 18 June 2019 and 30 November 2020 to assess the flora and vegetation values associated with the Proposal to:</p> <ul style="list-style-type: none"> • Determine the presence of Threatened or Priority flora or fauna species, • Delineate vegetation type and condition, including any sensitive vegetation such as Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs), and • Outline any requirements for further spring surveys (if required). <p>No conservation significant flora were recorded during the two surveys. The survey was conducted outside the optimum survey period for the region. However, the data recorded from the assessment is considered adequate to determine the vegetation types and biological values given the completely degraded condition of the vegetation.</p> <p>A post-field survey likelihood of occurrence assessment was undertaken. Due to a lack of preferred habitat and the highly degraded state of the vegetation, no species were considered likely or possibly occurring in the proposal area.</p> <p>Proposed clearing is therefore unlikely to be at variance to this principle.</p>
<p>Principle (d) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.</p>	<p>The site inspection confirmed that none of the vegetation in the proposal area is representative of any state listed TEC.</p> <p>Proposed clearing is not at variance to this principle.</p>

Principle (e) – Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Table 2 and 3 below summarise the remnant vegetation type, condition and association in the proposal area in comparison to state and local level.

Table 2. Summary of Proposal Area's Mapped Pre-European Vegetation Associations

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Pinjarra_968 Beard association described as Jarrah, marri and wandoo <i>Eucalyptus marginata</i> (Jarrah), <i>Corymbia calophylla</i> (Marri), E. wandoo (Wandoo) woodland.	Clearing of up to 0.30 ha for road widening and intersection upgrade works	Completely Degraded	Vegetation description and condition determined from two Main Roads site visit on 18 June 2019 and 30 November 2020 and aerial imagery.

Table 3. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Association No. 968	Statewide WA	296,877.84	95048.82	32.02	57.64
	IBRA Bioregion SWA	136,188.20	9,017.32	6.62	21.61
	IBRA Sub-region SWA2	136,188.20	9,017.32	6.62	21.61
	Local Government Authority Shire of Serpentine-Jarrahdale	24,351.49	1,121.13	4.60	12.49

Source: Government of Western Australia (2019)

IBRA = Interim Biogeographic Regionalisation for Australia

The EPA's Guidance Statement No.33 "Environmental Guidance for Planning and Development", recognises the Perth Metropolitan Region (including project area) as a constrained area and has provided a threshold of retention to 10% of the pre-existing extent of native vegetation in constrained areas. There is less than 10% of vegetation association 968 remaining (4.6%) in the LGA area. Beard Vegetation Association 968 has more than 30% remaining at the state level (32.02%). The removal of up to 0.30 ha of native vegetation in the proposal area is negligible given that there is 95,048.82 ha of this association remaining across the State.

In addition, vegetation in the proposal area is in a Completely Degraded condition and is not considered a significant remnant of the original vegetation associations of the area. Clearing highly degraded and fragmented vegetation is not anticipated to have an impact on that vegetation type at a local or regional scale. The proposed clearing will not impact vegetation that is significant as a remnant in an area that has been extensively cleared.

	Based on the above, the proposed clearing is not likely to be at variance to this Principle.
Principle (f) – Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	<p>The proposal area is wholly within the Armadale Palusplain, Multiple Use wetland as defined within the DBCA Geomorphic Wetlands Swan Coastal Plain database. Multiple use category wetlands have few remaining important attributes and functions; the protection of these wetlands is the lowest priority.</p> <p>The proposal area is within an existing degraded area of land and works are not likely to have an increased impact to the wetland given the existing level of development within and adjacent to the proposal area.</p> <p>Proposed clearing of up to 0.30 ha within a multiple use management category wetland is at variance to this Principle. As the total clearing will be less than 0.5 ha, preparation of an Assessment Report under Condition 6(e) of CPS818/15 is not required.</p>
Principle (g) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	<p>The proposed clearing is in an area that has already been subject to historical clearing, primarily for agricultural use. It is considered unlikely that removing the small patches of fragmented, remnant native vegetation will cause appreciable land degradation.</p> <p>As such, proposed activities are not considered to be at variance to this Principle.</p>
Principle (h) – Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	<p>No conservation estate occurs within the proposal area. Two bush forever sites are located within 5 km of the proposal area. Site ID 2862, located over 1.5 km south of the proposal area and Site ID19937 located over a 1.5 km west of the proposal area.</p> <p>Proposed activities will not have impact to conservation areas and therefore will not be at variance to this Principle.</p>
Principle (i) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	<p>Construction works and vegetation clearing will be undertaken with best practice principles to ensure surface and groundwater are protected.</p> <p>A Water Corps (WC) owned stormwater V-Drain is located within the proposal area and extends along the northern boundary of Thomas road. The V-Drain connects to the regional Birrega Drain that extends to the Peel Estuary. Proposed works include culvert installation to direct surface water south of Thomas Road north into the V-Drain. Drainage designs will be developed in consultation with WC and installed in accordance with a Main Roads CEMP to ensure infrastructure is sized appropriately to handle additional flows and does increase sedimentation/erosion to Birrega Drain.</p> <p>Given the minor scale of clearing, the nature of the works and that no surface water will be taken for this project, it is unlikely that there will be a significant impact to the surface water quality of this area. There will be no deterioration to groundwater level or quality as clearing will be of small scale, proposed drainage modifications are relatively minor and there will be no groundwater abstraction.</p> <p>Given the above, the proposed clearing is not likely to be at variance to this Principle.</p>

<p>Principle (j) – Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.</p>	<p>Given the minor amount of native vegetation proposed to be cleared impact to groundwater level is not likely to be affected. DWER flood mapping database classified the proposal area and its surroundings as having a moderate to high risk of flooding. The proposed works will not significantly alter the topography or groundwater table.</p> <p>The existing WC drain adjacent to Thomas Road will be maintained and will continue to direct excess surface water away from the proposal area. Increased surface water flows from the widening of Thomas Road to the south will be directed to the surface water drain north of Thomas Road via culverts. Surface water drainage and designs have considered increased water flows in collaboration with the Water Corporation to ensure the effective surface water management. Increased water flows are not likely to cause, exacerbate or increase the frequency of flooding events.</p> <p>Given the above, the proposal is not likely to be at variance to this Principle.</p>
<p>Methodology Used and References:</p>	<p>Main Roads Site Inspection and map D19#623820 Shapefile of clearing area/trees D21#426822 EPBC Protected Matters Search (1999) DBCA Database (2019) DWER Database (2020) Main Roads GIS Shapefiles Main Roads Site Inspection (June 2019, November 2019) Florabase (2019)</p>
<p>Completed By:</p>	
<p>Name</p>	
<p>Signature</p>	
<p>Job Title</p>	<p>Environmental Officer</p>
<p>Date</p>	<p>31/05/21</p>

Once all sections are completed, send the form to CRSP for review and endorsement.

<p>DECISION ON CLEARING ASSESSMENT</p>		
<p>Clearing Assessment</p>	<p>ENDORSED <input checked="" type="checkbox"/></p>	<p>REFUSED <input type="checkbox"/></p>
<p>Comments</p>	<p>Proposed clearing of up to 0.30 ha within a multiple use management category wetland is at variance to Principle f, and unlikely to be or not at variance to all other Clearing Principles. As the total clearing will be less than 0.5 ha, preparation of an Assessment Report under Condition 6(e) of CPS818/15 is not required.</p>	
<p>Name</p>		
<p>Signature</p>		
<p>Job Title</p>	<p>Environment Officer</p>	
<p>Date</p>	<p>09/06/2021</p>	

References

Department of Agriculture, Water and the Environment. (2019). Protected Matters Search Tool Report. Available online from: <http://www.environment.gov.au/epbc/pmst/index.html> /

Department of Biodiversity, Conservation & Attractions (2019). *NatureMap Database Search 2019*, Perth, Western Australia.

Department of Environment and Energy (2019). Species Profile and Threats Database. <https://www.environment.gov.au/biodiversity/threatened/species>

Main Roads WA (2021). Environmental Site Inspection Report 2021. Thomas Road (SLK 16.94) and Kargotich Road (SLK 3.18) Roundabout. D19#623820 June and November 2019.

Western Australian Herbarium (1998) FloraBase – the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/>

APPENDIX 1: Proposal Area Map

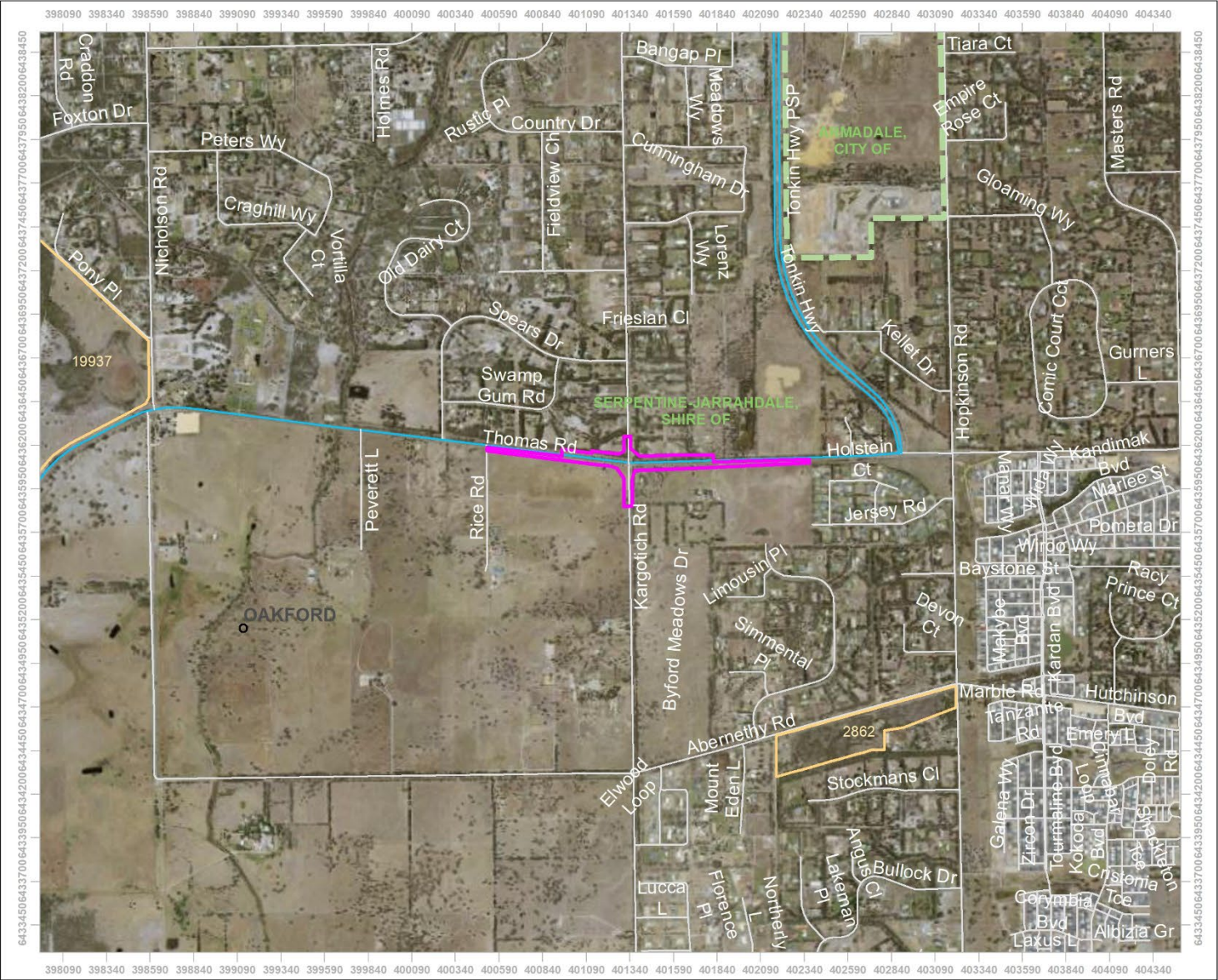
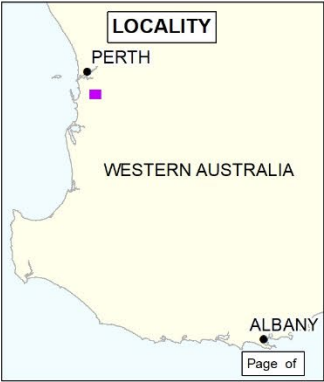


Figure 1
Thomas Road/ Kargotich Roundabout

Proposal Area

Legend

- Proposal Area
- Bush Forever Site
- WA_LGA_Boundaries
- NTWK_IRIS_Rou...
- Network Type
 - State Road
 - Local Road
- Town



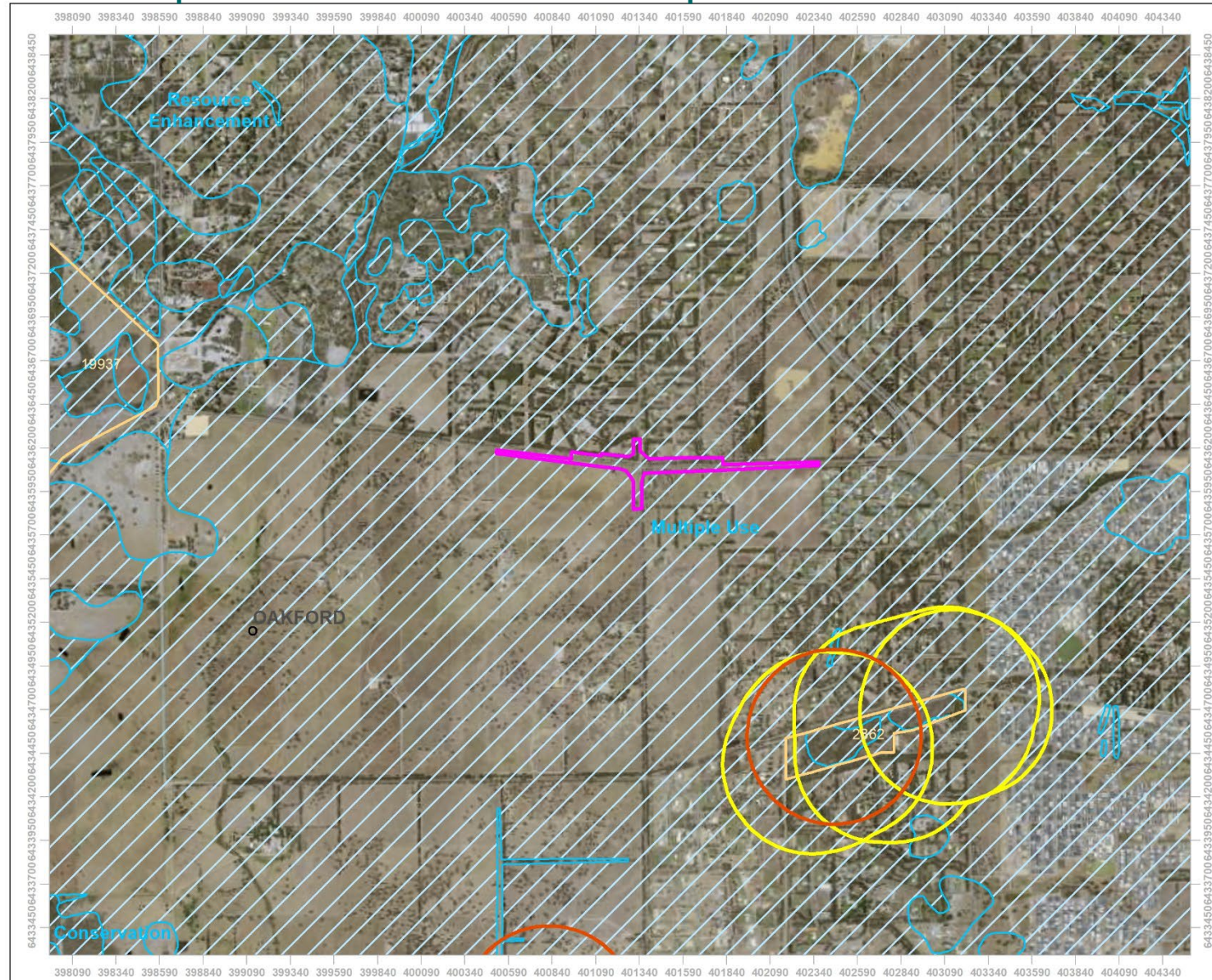
Author: C8268
Date: 31/05/2021
SCALE @ A4 : 30,000
SOURCE:
Imagery sourced Landgate, all other data
MRWA

0 1,250 2,500 Meters

Coordinate System: GDA 1994 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA 1994



APPENDIX 2: Proposal Area Environmental Constraints Map



Author: C8268
Date: 31/05/2021
SCALE @ A4 : 30,000
SOURCE:
Imagery sourced Landgate, all other data
MRWA

0 1,250 2,500 Meters

Coordinate System: GDA 1994 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA 1994



Figure 2

**Thomas Road/ Kargotich
Roundabout**

Proposal Area - Environmental
Constraints

Legend

- Proposal Area
- Bush Forever Site
- ENVN_Wetlands_Swa...
- Town

PEC/TEC

- Priority
- Threatened



APPENDIX 3: Proposal Area Vegetation Map

