ecological
associates pty ltd

Native Vegetation Clearance

Cowell Heavy Vehicle Bypass

Data Report

Clearance under the *Native Vegetation Regulations 2017*

20th March 2025

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1. Application information

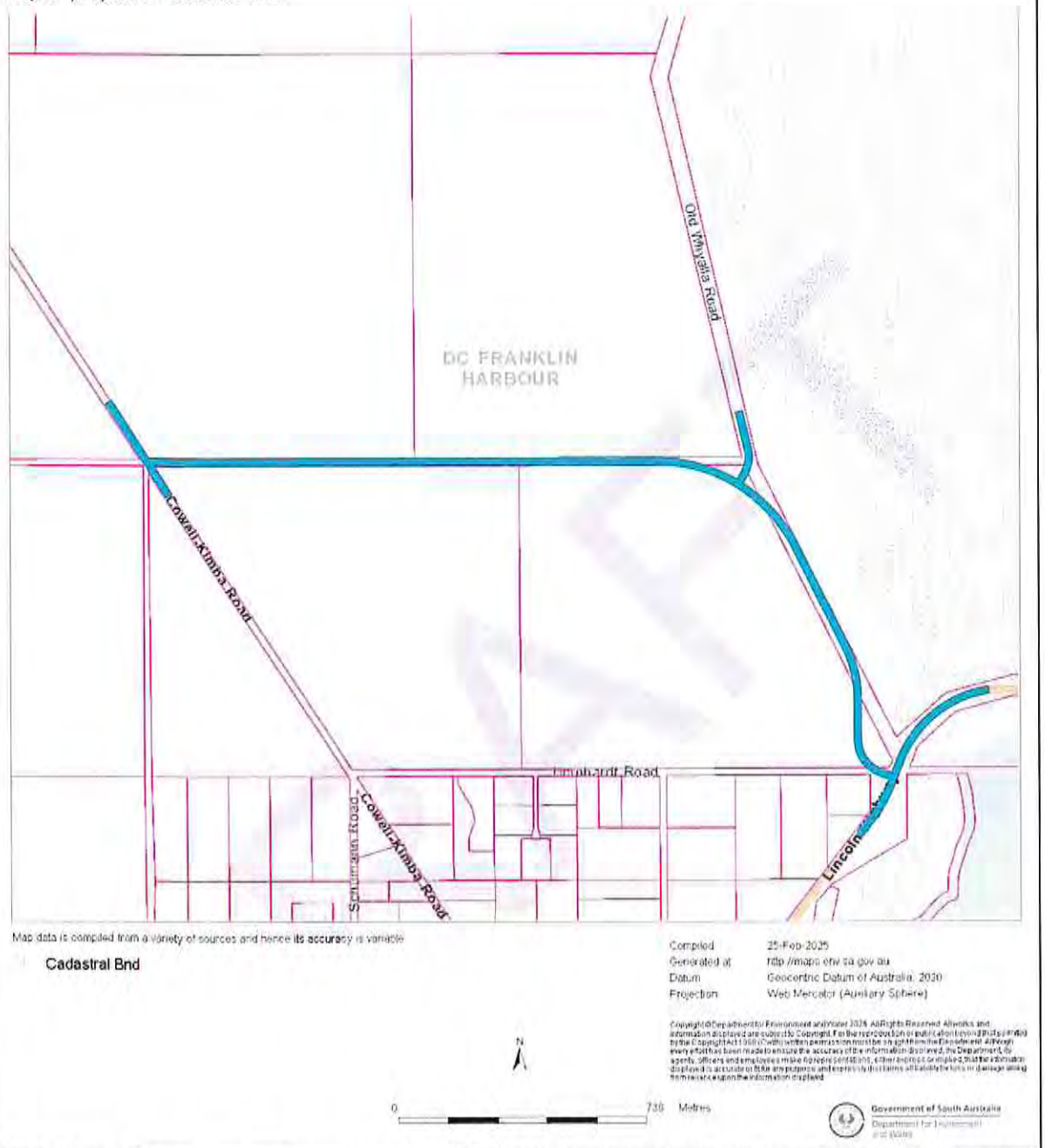
Application Details

Applicant:	District Council of Franklin Harbour	Department for Infrastructure and Transport	
Key contact:	Works Manager District Council of Franklin Harbour	A/Principal Environmental Advisor Planning and Technical Services Directorate Department for Infrastructure and Transport	
Landowner:	Commissioner of Highways and District Council of Franklin Harbour		
Site Address:	Lincoln Highway, Old Whyalla Rd, Searle Rd and Cowell-Kimba Rd, Cowell		
Local Government Area:	District Council of Franklin Harbour	Hundred:	Playford - 532600
Title ID:	North of Hornhardt Rd: - H532600 S68 Remainder is within Road Reserves	Parcel ID	North of Hornhardt Rd: - CT/5562/274

Summary of proposed clearance

Purpose of clearance	To improve road safety through the construction of a heavy vehicle bypass around the township of Cowell.
Native Vegetation Regulation	Regulation 12(34) - Infrastructure 5(1)(d) Clearance incidental to the construction or expansion of a building or infrastructure (and associated services) where the Minister has declared that the clearance is in the public interest.
Description of the vegetation under application	Size, type and general condition – - 1.059 ha of *Myoporum platycarpum* open woodland over chenopods in moderate to good condition - 0.124 ha of roadside chenopod shrubland and *Scaevola spinescens* in poor condition - 1.866 ha of chenopod shrubland with emergent *Myoporum platycarpum* in moderate condition - 0.756 ha of roadside *Atriplex holocarpa* chenopod shrubland in poor condition
Total proposed clearance - area (ha) and number of trees	3.805 ha are proposed to be cleared.
Level of clearance	**Level 4**
Overlay (Planning and Design Code)	Native Vegetation Overlay

Map of proposed clearance area



Mitigation hierarchy	- Vegetation clearance has been avoided by aligning the works with existing unsealed roads. - The alignment of the route has been moved to avoid high value mallee vegetation. - Works on the Lincoln Highway causeway are restricted to within the existing barriers to avoid impacts to the adjacent saltmarsh community (Nationally Vulnerable).
SEB Offset proposal	Payment of **$109,006.11**

2. Purpose of clearance

2.1 Description

Clearance of native vegetation is required to construct a heavy vehicle bypass around the township of Cowell.

2.2 Background

The Department for Infrastructure and Transport and District Council of Franklin Harbour are planning to construct a bypass to divert heavy vehicles around the township of Cowell. The works are planned to improve safety by reducing the use of urban roads by long-distance heavy vehicles.

The project site is located between 1.2 to 2.5 km north to northwest of Cowell township on the east coast of Eyre Peninsula in the District Council of Franklin Harbour (Figure 1).

The works affect a 3.9 km long corridor and involve modifications to three intersections and sections of Cowell-Kimba Road, Searle Road, Old Whyalla Road and Lincoln Highway (Figure 2). The works are mainly planned in existing unsealed council road and will require clearance of vegetation within the road reserve to widen and seal the roads and to provide drainage. A new section of Old Whyalla Road (north of Hornhardt Rd) will affect adjoining private land containing native vegetation.

Most of the adjacent land is used for cropping and/or grazing, however the works along the causeway on Lincoln Highway are adjacent to tidally inundated mangrove and saltmarsh communities.

2.3 General location map

Figure 1. Site Location

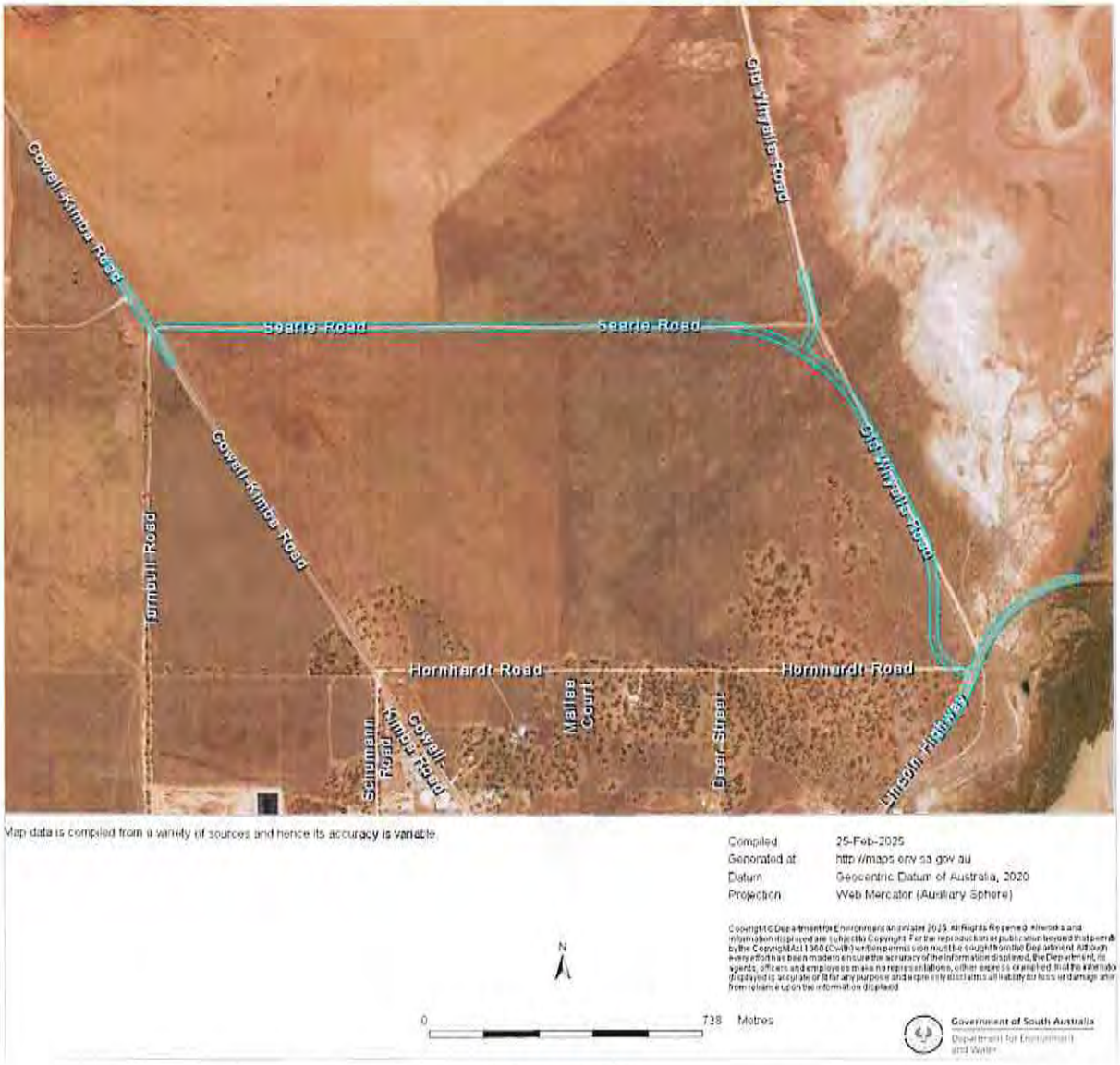


Figure 2. Site map

2.4 Details of the proposal

The works will provide an upgraded route for heavy vehicles mostly using existing unsealed roads. The route will diverge from Lincoln Highway north-east of Cowell at the intersection with Old Whyalla Road. The route will follow Old Whyalla Road north to the intersection with Searle Road then east to the intersection with Cowell-Kimba Road.

Works will be confined within the road reserve except at the three intersections where works will extend into the adjacent land to provide deceleration lanes and turn areas.

A 20 m wide construction activity zone is required to accommodate:

- a 9 m carriage way (two 3.5 m lanes with 1 m sealed shoulder on either side)
- a 1 m unsealed shoulder on either side of the road, and
- a 10:1 batter to a drainage swale up to 4 m wide on either side of the road

The construction activity zone will be reduced to the existing maintenance zone on the Lincoln Highway causeway where it passes through coastal saltmarsh and mangrove vegetation.

A concept plan for a typical road section is provided in Appendix 3.

2.5 Approvals required *or* obtained

Vegetation clearance for all new works, including road widening that encompasses existing maintenance zones, requires approval from the Native Vegetation Council.

The project potentially affects the habitat of one EPBC-listed fauna species recorded within 5 km of the site.

The Landscape South Australia Act 2019 (LSA Act) provides details regarding impacts and management of declared weeds and water affecting activities.

2.6 Native Vegetation Regulation

Regulation 12(34) - Infrastructure 5(1)(d) Clearance incidental to the construction or expansion of a building or infrastructure (and associated services) where the Minister has declared that the clearance is in the public interest.

2.7 Development Application information (if applicable)

3. Method

3.1 Flora assessment

Existing records of threatened flora were reviewed for a 5 km search radius centred on the site using:

- NatureMaps and Atlas of Living Australia (23rd February 2025).
- EPBC Protected Matters Search Tool (23rd February 2025)
- South Australian Department for Environment and Water Biological Database of South Australia search (25th June 2024: Record set number DEWNRBDBSA240619-2)

Records with a locational reliability greater than 1km or occurring prior to 1995 in the BDBSA, NatureMaps and Atlas of Living Australia, were excluded. For EPBC Protected Matters, species were only included if they are known to occur, or their habitat is known to occur in the search area.

A vegetation survey of the entire route was conducted on 17th June 2024. Vegetation associations were mapped based on overstorey and understorey composition. Bushland Assessments were completed for each plant association as prescribed by the Native Vegetation Council (NVC) Bushland Assessment Manual (September 2020). This included recording the plant species present, the vegetation structure, and habitat values offered by each plant community. Plant associations were mapped and classified according to composition and condition.

3.2 Fauna assessment

Records of threatened fauna were reviewed for a 5 km search radius centred on the site using NatureMaps and Atlas of Living Australia and the EPBC protected matters search tool (23rd February 2025). Records with a locational reliability > 1 km or occurring prior to 1995 were excluded, along with records of aquatic species. For EPBC Protected Matters, species were only included if they are known to occur, or their habitat is known to occur, in the search area.

The suitability of vegetation associations for rare and threatened fauna was assessed based on the known distribution and occurrence of species and their habitat requirements.

National Conservation Ratings are in accordance with the most recent *EPBC Act* Listing Status available in the Species Profile and Threats Database.

State Conservation Ratings are in accordance with the *National Parks and Wildlife Act 1972*.

A fauna survey involving active searching along the proposed route was conducted by on 15th-17th September 2024. Observations of and results of active searching for wildlife activity were recorded up to approximately 100 metres on either side of a 2.7 km stretch of road from the junction of the Lincoln Highway and the Old Whyalla Road, north along the Old Whyalla Road to Searle Road (1.0 km), then west along Searle Road (1.7 km) to the junction with the Cowell-Kimba Road. The survey involved a total of 11 hours of field time and was undertaken in the early morning and late afternoon during the peak activity period for most birds. One evening spotlighting session was carried out on 17th September 2024 to assess the presence of nocturnal animals. Species were identified from direct observation and calls.

4. Assessment Outcomes

4.1 Vegetation Assessment

General description of the vegetation, the site and matters of significance

The project area lies within the Cowell Land System, comprising gently undulating outwash fans formed on alluvial / colluvial sediments, overlain by highly calcareous aeolian Woorinen Formation sediments, hardened in places to calcrete plains and benches. There are some siliceous sands as low parallel dunes. A discontinuous strip of coastal sand dunes and salt flats separate the outwash fans from the sea.

The survey area is in the Cleve IBRA Association of the Eyre Yorke Block Bioregion. Native vegetation remnancy in the IBBRA Association is 17% of which 17% is formally protected.

Calcareous loamy sands with calcrete surface rocks make up the dominant soil type across the site, with a small area at the eastern extent of the works reaching onto the saline supratidal flats at the margins of the Franklin Harbour estuary.

The nearest protected areas are Franklin Harbor Conservation Park (CP) 6 km to the south, and Middlecamp Hills CP 12 km west of the site. There are several large Heritage Agreement properties to the north-east, the closest of which is 2.8 km away, covering 385 ha. A number of small Significant Environment Benefit areas (totaling 7 ha) are located 1.2 - 5 km east of the site.

Land adjoining the project area is used primarily for dryland agriculture (i.e. grazing (mainly sheep) and cropping). The western end of Hornhardt Road is zoned as Rural Living.

The project area contains four main vegetation associations plus degraded versions of one of these which occurs on roadside verges. The vegetation ranges from very open woodland in the southeastern section, to chenopod shrubland in the central and north-western parts. The impacted vegetation communities on private land are in moderate to good condition, with high species diversity and low levels of weed invasion, but lack the mallee canopy which has been selectively cleared. Disturbed roadside verges are more degraded with lower diversity and incursions of weed species that benefit from surface water run-off.

Mean annual rainfall at the site is 267 mm from 1976 to 2005 (NatureMaps).

A total of 52 flora species were recorded within the project area comprising 42 native species and ten introduced species (Appendix 4).

No conservation rated flora species were recorded within the project area during the survey.

Descriptions of each plant association are provided below.

Details of the vegetation associates/scattered trees proposed to be impacted

Vegetation Association	Site A2: *Myoporum platycarpum* very open woodland over chenopod and *Scaevola spinescens* shrubland

Photo 227 facing south at waypoint 934 (Latitude: -33.669385; Longitude: 136.9279)

Photo 8212 facing south along Lincoln Highway

General description	Vegetation Association A2 occurs on private property between Hornhardt Rd and Old Whyalla Rd and will be impacted by the construction of the new intersection proposed in the south-eastern section of the route. It is also present beyond the verge along both sides of Old Whyalla Rd. The community is a derived shrubland with scattered *Myoporum platycarpum*, in which the mallee overstory has been selectively cleared. Along Old Whyalla Rd, sparse mallee trees remain, particularly towards the northern end. Native flora diversity in the understory remains high (27 species), and is dominated by chenopods such as *Sclerolaena obliquicuspis, Atriplex vesicaria, Enchylaena tomentosa* with patches of *Scaevola spinescens* and *Eremophila scoparia* (Broom Emubush). Other lifeforms are represented by *Carpobrotus rossii, Disphyma crassifolium, Vittadinia cervicularis* (Waisted New Holland Daisy), *Minuria cunninghamii* (Bush Minuria) and several species of native grasses. Sheep and cattle dung indicates that the area supports livestock, however high levels of regeneration and minimal soil disturbance suggests grazing pressure is low. Weed cover is low, but includes scattered plants of the SA Declared *Lycium ferocissimum* (African Boxthorn), with Wards Weeds and Onion Weed in the groundlayer. A small stand of the SA Declared *Casuarina glauca* (Grey Sheoak) is growing along the western road verge of Lincoln Hwy. Vegetation condition is moderate to good, the reduction due largely to a lack of mature mallee trees and their associated habitat components. Vegetation Association A2 also occurs on the south-eastern side of Lincoln Highway, where a narrow strip of vegetation will be impacted by road widening. This community has a similar composition to that described above but includes *Acacia ligulata* (Umbrella Bush) and *Enneapogon nigricans* (Black-head Grass) as prominent understory components.				
Threatened species or community	Threatened plant community: No Threatened flora observed: None Nationally- and State-threatened fauna that might utilise this vegetation community: - Nationally Vulnerable: Blue-winged Parrot - State Endangered: White-bellied Sea Eagle - State Vulnerable: Australian Bustard, Little Eagle - State Rare: Elegant Parrot, White-winged Chough, Shy Heathwren, Peregrine Falcon, Black Falcon, Jacky Winter and Gilbert's Whistler.				
Landscape context score	1.15	Vegetation Condition Score	56.10	Conservation significance score	1.10
Unit biodiversity Score	70.97	Area (ha)	1.059	Total biodiversity Score	75.16

Vegetation Association	**Site A2b: Highly degraded roadside chenopod and *Scaevola spinescens* shrubland**

Photo 8195 facing north along western verge of Old Whyalla Rd

General description	Vegetation Association A2b is present within the disturbed road verge along both sides of Old Whyalla Rd and comprises a highly degraded version of the adjacent plant association A2. The community comprises mostly regenerating chenopods with scattered native grasses and daisies. Grading has avoided the few *Myoporum platycarpum* and mallee trees. Weeds benefit from road runoff and are dominated by Onion Weed, *Centaurea calcitrapa* (Star Thistle), *Mesembryanthemum aitonis* (Angled Iceplant) and Wards Weed. The vegetation is in poor condition with low structural and species diversity.
Threatened species or community	Threatened plant community: No Threatened flora observed: None Nationally- and State-threatened fauna that might utilise this vegetation community: Given the highly degraded state of the plant community, together with its proximity to the road, it is unlikely to provide significant habitat for threatened fauna.

Landscape context score	1.15	Vegetation Condition Score	19.18	Conservation significance score	1.00
Unit biodiversity Score	22.06	Area (ha)	0.124	Total biodiversity Score	2.74

Vegetation Association	Site A3: *Maireana sedifolia, Sclerolaena obliquicuspis* + *Nitraria billardierei* chenopod shrubland with emergent *Myoporum platycarpum*

Photo 232 facing west at Wpt 936 (Latitude: -33.663291; Longitude: 136.924608)

Photo 238 facing southeast along Cowell-Kimba Rd at Wpt 939 (Latitude: -33.661823; Longitude: 136.905171)

General description	Vegetation Association A3 occurs on private property in the north-eastern section of the route and will be impacted by the construction of a new intersection at Old Whyalla Road and Searle Rd. The community continues within the road reserve along the eastern end of Searle Rd. The derived chenopod shrubland is dominated by *Maireana sedifolia* (Pearl Bluebush), *Sclerolaena obliquicuspis* and *Nitraria billardierei* with emergent *Myoporum platycarpum*. Native plant diversity is high, with 26 species recorded at the site, including *Lawrencia squamata* (Thorny Lawrencia), *Dissocarpus biflorus* (Two-horn Saltbush), *Disphyma crassifolium, Senna artemisioides ssp. coriacea, Eremophila scoparia, Dodonaea viscosa ssp. angustissima*, several species of *Maireana*, as well as native grasses and daisies. Wards Weed is the most commonly encountered weed, with Onion Weed and *Brassica tournefortii* (Wild Turnip) present as minor components. There is evidence of the presence of sheep, however the largely intact soil biological crust and good levels of regeneration indicate that grazing pressure is low. Vegetation Association A3 is also present in the road reserve along both sides of the Cowell-Kimba Rd, in the north-western section of the proposed route. While at this location *Maireana sedifolia, Nitraria billardierei* and emergent *Myoporum platycarpum* remain characteristic features of the community, there are sections where shrubs such as *Pimelea microcephala* (Shrubby Riceflower), *Pittosporum angustifolium* (Native Apricot) and *Scaevola spinescens* become prominent understory species, with *Enneapogon nigricans* dominant in the groundlayer. The vegetation community is in moderate condition with high species diversity, good levels of regeneration and low weed cover, but lacks the mallee canopy layer.				
Threatened species or community	Threatened plant community: No Threatened flora observed: None Nationally- and State-threatened fauna that might utilise this vegetation community: - State Vulnerable: Australian Bustard, Little Eagle - State Rare: Elegant Parrot, Shy Heathwren, Peregrine Falcon, Black Falcon				
Landscape context score	1.15	Vegetation Condition Score	50.80	Conservation significance score	1.06
Unit biodiversity Score	61.93	Area (ha)	1.866	Total biodiversity Score	115.56

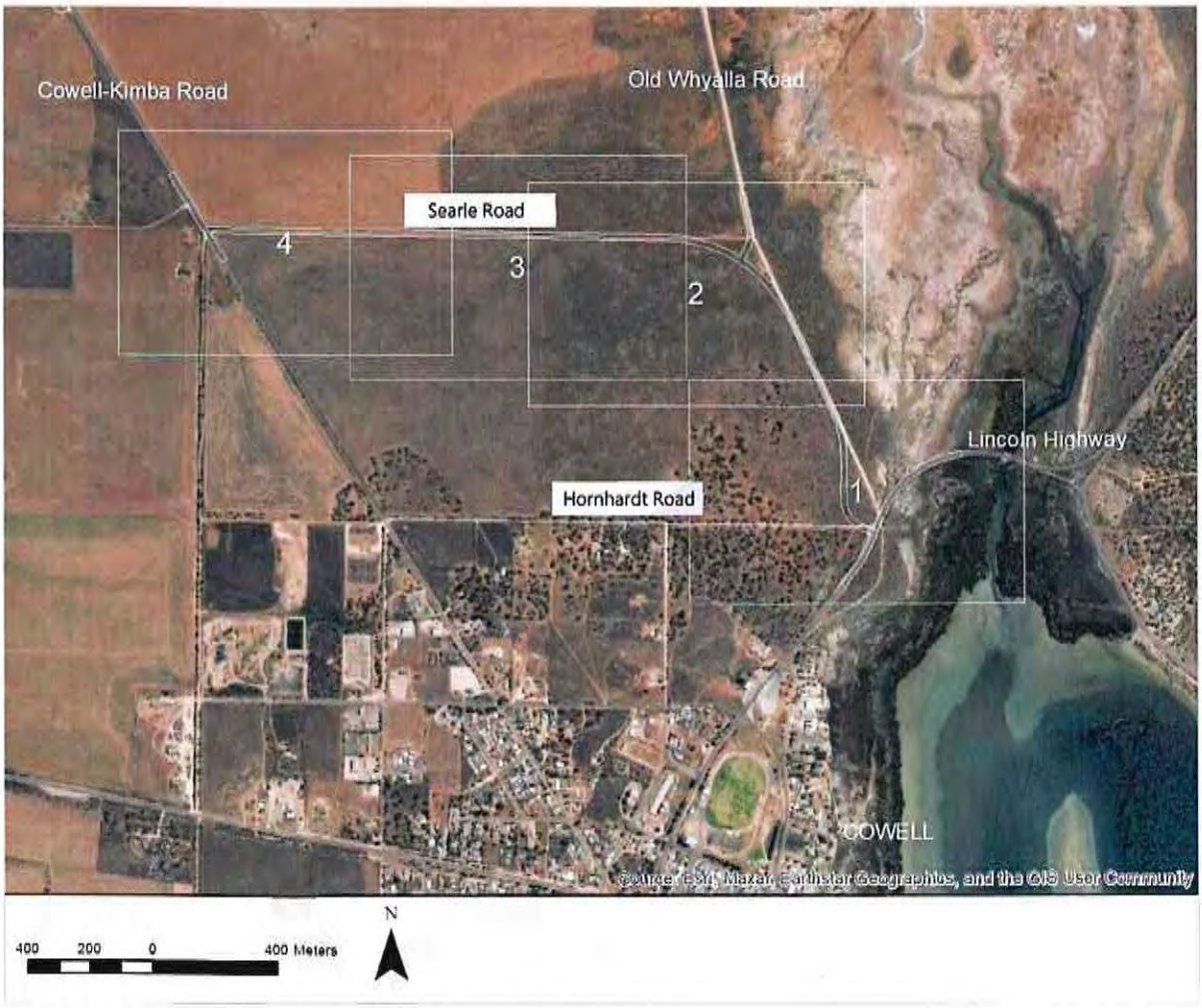
Vegetation Association	**Site A4: Degraded roadside *Atriplex holocarpa* chenopod shrubland**

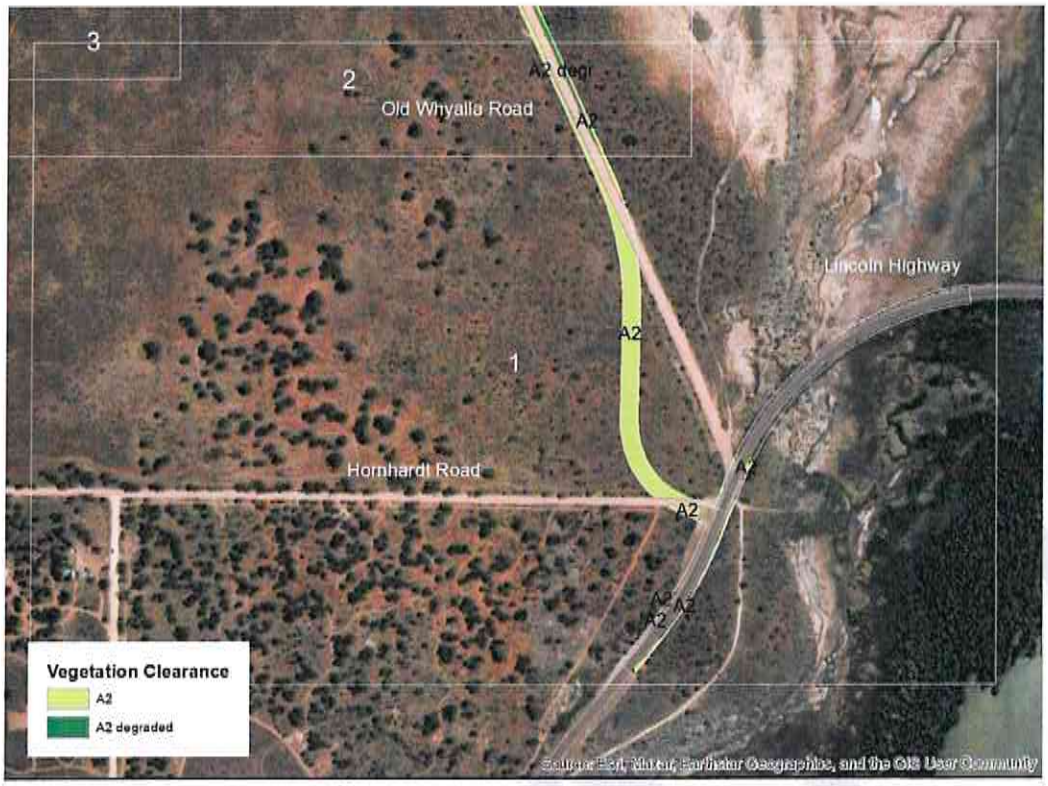
Photo 235 facing west on southern side of Searle Rd, at waypoint 938 (Latitude: -33.66292; Longitude: 136.913666)

General description	This degraded chenopod shrubland is present within the narrow road reserve along the western end of Searle Road and will be impacted by road widening. *Atriplex holocarpa* (Pop Saltbush) and *Salsola australis* (Buckbush) are dominant groundlayer species, with some scattered larger shrubs such as *Nitraria billardierei, Senna artemisioides* and *Nitraria billardierei.* Wards Weed is the most dominant exotic species, with patches of Onion Weed, Angled Iceplant and *Aizoon pubescens* (Coastal Galenia) common on the northern side of the road. Vegetation association A4 is highly degraded and in poor condition. It has a moderate level of species diversity and low structural diversity.
Threatened species or community	Threatened plant community: No Threatened flora observed: None Nationally- and State-threatened fauna that might utilise this vegetation community: Given the highly degraded state of the plant community, together with its proximity to the road, it is unlikely to provide significant habitat for threatened fauna.

Landscape context score	1.15	Vegetation Condition Score	22.58	Conservation significance score	1.0
Unit biodiversity Score	25.97	Area (ha)	0.756	Total biodiversity Score	19.63

Site maps showing areas of proposed impact

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Vegetation Clearance
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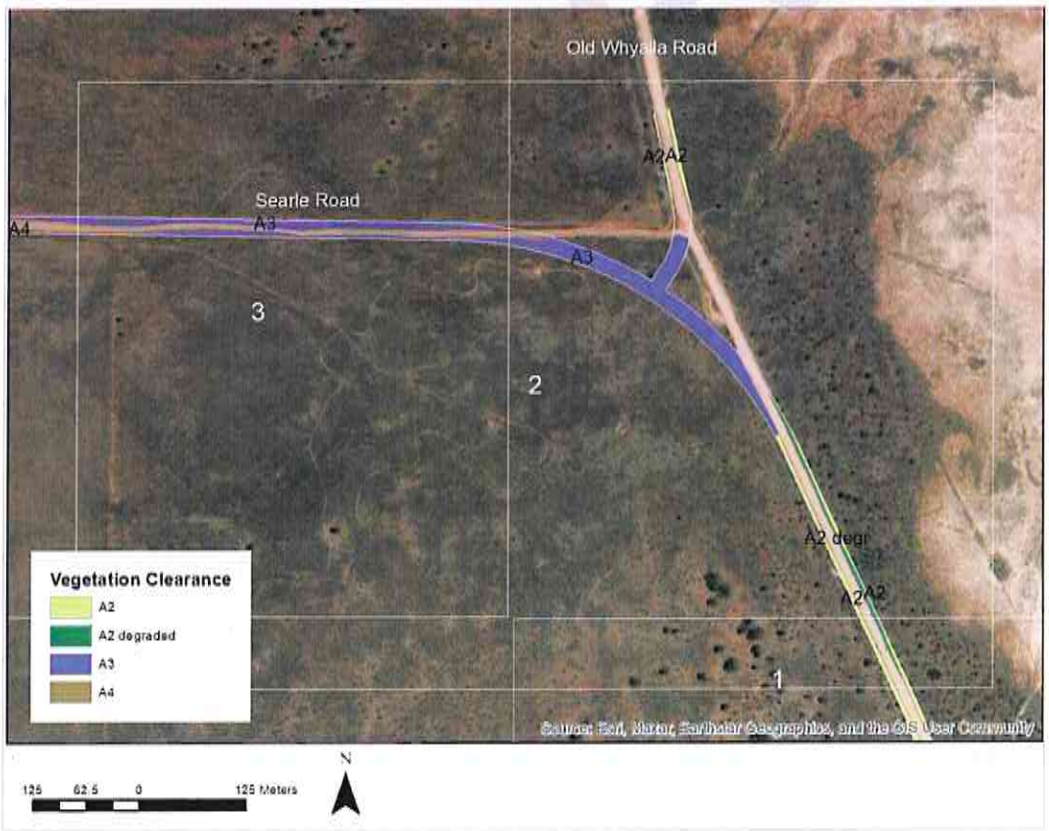
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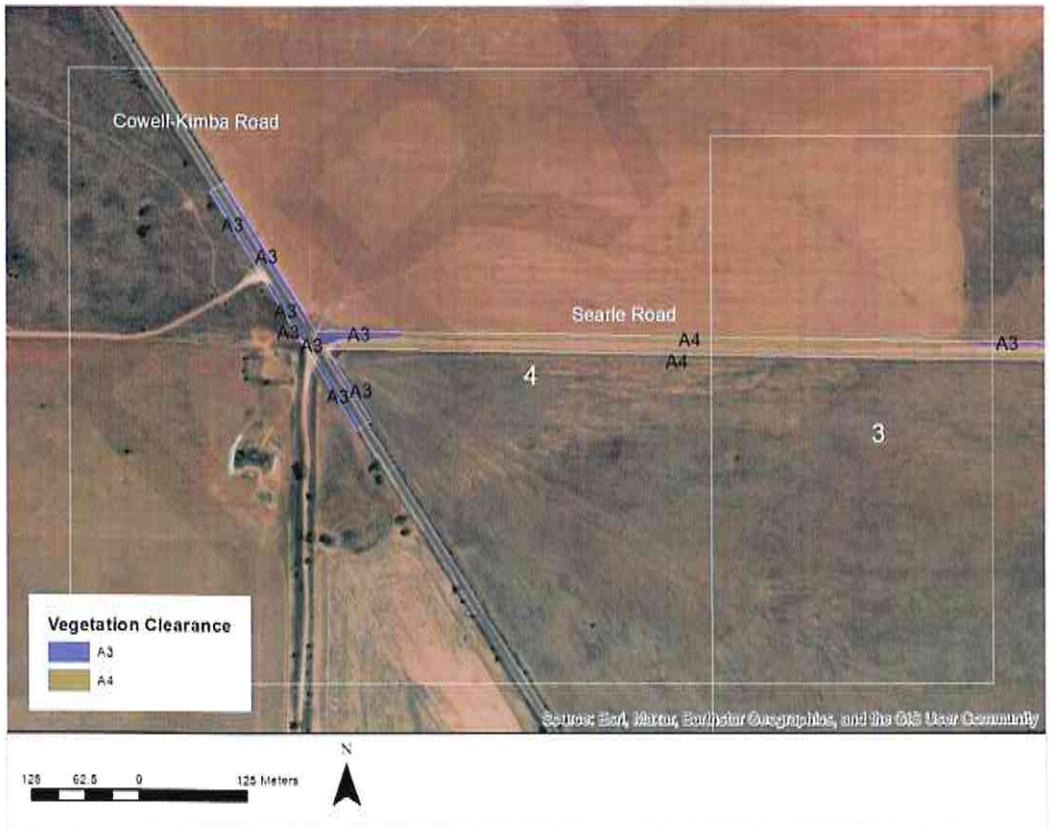
Cowell-Kimba Road
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Photo log

Photo	Direction	Description	Waypoint
227	South	Vegetation Association A2	934
8212	South	Vegetation Association A2	941
8195	North	Vegetation Association A2b	
232	West	Vegetation Association A3	936
238	Southeast	Vegetation Association A3	939
235	West	Vegetation Association A4	938

4.2 Threatened Species assessment

4.2.1 Ecological communities of conservation significance

Nationally-threatened Ecological Communities

No Nationally-threatened ecological communities will be impacted by the proposed works

4.2.2 Flora of conservation significance

Nationally-threatened flora

No flora species of national conservation significance were detected during the survey.

No flora species of national conservation significance were identified by the database searches as occurring within a 5 km radius of the impact site. The Protected Matters Search Tool identified one Nationally Vulnerable species (*Acacia rhetinocarpa* Resin Wattle) as "Known to Occur", however this species has not been recorded within the search area since 1975.

State-listed flora

Four State Rare species have been recorded within a 5 km radius since 1995 (Appendix 2):

- *Acacia montana* (Mallee Wattle) - Grows in open scrub on hard alkaline red duplex and grey-brown calcareous loamy soils [1];
- *Haegiela tatei* (Small Nut-heads) - Grows in saline, often gypseous habitats and often growing in samphire flats or low chenopod shrubland [1];
- *Maireana suaedifolia* (Lax Bluebush) - Found on raised areas around salt lakes [2]; and
- *Phlegmatospermum eremaeum* (Spreading Cress) - Grows in open mallee on calcareous clay or loam [1].

Habitat at the assessment site may be suitable for all of these taxa, however none of them were observed within the survey area. *Phlegmatospermum eremaeum* is an annual herb and would not have been evident at the time of the survey, particularly as the conditions were very dry.

4.2.3 Fauna of conservation significance

Nationally-threatened fauna

The database searches identified two species of fauna threatened at the National level, one of which (Blue-winged Parrot) may find suitable habitat in at least some of the vegetation associations (Table 1).

State-threatened fauna

A further 13 terrestrial species of conservation significance at the state level have been recorded within 5 km of the project area, ten of which may find suitable habitat in at least some of the vegetation associations (Table 1).

The fauna survey did not detect any species of national or state conservation significance (Appendix 3).

Table 1. Species observed on site, or recorded within 5km of the application area since 1995, or the vegetation is considered to provide suitable habitat

Species (common name)	EPBC Act	NP&W Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Ardeotis australis (Australian Bustard)		V	1,2,3	2017	Large ground-dwelling bird which inhabits tussock and hummock grasslands, low shrublands (including chenopod shrublands) and open grassy woodlands. Breeds on the ground on low sandy ridges or stony rises between grassland and protective shrubland cover.	Highly likely. Suitable habitat present in sites A2 and A3. and there are several records nearby, including off Searle Rd and Old Whyalla Rd. Unlikely in A2b or A4.
Bubulcus ibis coromandus (Eastern Cattle Egret)		R	1,2,3	2019	Found in grasslands, woodlands, wetlands and river systems as well as pastures and croplands, especially where drainage is poor [3].	Unlikely. Habitat is not suitable.
Corcorax melanorhamphos (White-winged Chough)		R	1,3	2020	Occurs in open forest and woodlands, including mallee areas, often preferring wetter areas with plentiful leaf-litter and available mud for nest building. Widespread in mallee associations with an understorey of shrubby plants such as Geijera, Atriplex and Olearia or with sparse undergrowth, including chenopod shrubland on open floodplains. It feeds mainly on the ground on insects and seeds [3].	Highly likely in association A2. Numerous sightings nearby. Unlikely in A2b, A3 & A4 as these sites lack canopy trees and deep leaf litter.
Falco peregrinus macropus (Peregrine Falcon)		R	1	2019	Widespread species found in most habitats, from rainforests to the arid zone, including chenopod shrublands and terrestrial and maritime wetlands (e.g. swamps, estuaries, mangrove and saltmarsh), particularly with fringing trees for perching. It requires abundant prey and secure nest sites [3].	Highly likely. Suitable habitat available in all but the highly degraded associations and there are several records nearby, including off Searle Rd.
Falco subniger (Black Falcon)		R	1	2016	Found in open woodland, shrubland and grassland in arid and semi-arid zones, especially tree-lined watercourses. Mainly over open plains and undulating land with large tracts of low vegetation, such as grassland, chenopod plains, and saltmarsh. Often associated with wetlands, especially in arid zone where prey (mostly small birds) concentrates at water [3].	Highly likely. Suitable habitat available in all but the highly degraded associations and there are several records nearby, including off Searle Rd.
Haliaeetus leucogaster (White-bellied Sea Eagle)		E	1	2019	Large eagle found in coastal habitats and terrestrial wetlands across Australia. Hunts over large open tracts of water but is also known to hunt over terrestrial habitats. Their large stick nest is built in coastal trees (including mallees and mangroves), cliff-face ledges or rocky outcrops but may also be placed on the ground. Their nest is used for many seasons in succession [3].	Possible. There are numerous fly-over sightings nearby, and the species may hunt over the terrestrial vegetation associations close to the coast (A2).

Species (common name)	EPBC Act	NP&W Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Hieraaetus morphnoides (Little Eagle)		V	1	2017	A widespread species found in open eucalypt forest or woodland, tree-lined watercourses, mallee woodlands, grasslands, chenopod plains and sedge-covered floodplains. Build their nests in mature living trees [3].	Highly likely. Suitable habitat is available in most associations and there are several records nearby, including off Searle Rd.
Hylacola cauta cauta (Shy Heathwren)		R	1	2010	Inhabits mallee woodland with a relatively dense shrub understory, feeding mostly on ground-dwelling insects. The species has also been recorded in coastal acacia shrubland and in chenopod shrubland [3].	Possible. Suitable habitat is available in A2 & A3 but there are only 2 records nearby.
Leipoa ocellata (Malleefowl)	VU	V	1,3,5	2001	Found principally in semi-arid to arid shrublands and low woodlands dominated by mallee and associated habitats such as *Melaleuca uncinata* and *Callitris verrucosa* [4].	Unlikely. Mallee association A1 may provide suitable habitat but no nesting mounds were observed at the site. Only one record, 4.5 km north-east of the site.
Lichenostomus cratitius occidentalis (Purple-gaped Honeyeater)		R	1	2009	Mallee woodland and shrubland growing on limestone and calcareous dunes in coastal and subcoastal areas. Feed mainly on nectar and insects, especially from flowering mallee eucalypts and banksias [3].	Unlikely. Preferred habitat is not present at the sites and there is only one record, 1 km east of the site.
Microeca fascinans fascinans (Jacky Winter)		R	1	2020	Sedentary bird, preferring open Eucalypt and mallee woodland usually with an open shrub layer featuring bare ground and fallen timber. Often seen in farmland and parks. They feed from low perches, snatching flying insects. They build a small cup-shaped nest usually on the fork of a dead branch [3].	Likely. Suitable habitat may be available in mallee association A2. Unlikely in A3-A4.
Neophema chrysostoma (Blue-winged Parrot)	VU	V	2,5	2002	Inhabits a variety of open habitats in coastal and inland areas. Foraging habitats include grasslands, grassy woodlands and semi-arid chenopod shrubland with native and introduced grasses, herbs and shrubs [5].	Possible. Suitable habitat is available in associations A2-A4, but there is only one record for the species 3 km north-east of the site, >20 years ago.
Neophema elegans elegans (Elegant Parrot)		R	2	2008	Open coastal and inland habitats, including grasslands, pasture, mallee shrubland, dry, open woodland, Acacia scrubs, chenopod plains and heathland. Sometimes seen in coastal saltmarsh, sandhills and beaches. Feed mainly on or near ground; often among seeding grass or low herbs or shrubs. Nest in hollow-bearing trees [3].	Likely. Suitable habitat is available in all but the highly degraded associations and there are several records for the species nearby.

Species (common name)	EPBC Act	NP&W Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Pachycephala inornata (Gilbert's Whistler)		R	2,3	2016	Inhabits semi-arid tall mallee with sparse shrubby understorey or prickly Acacia thickets, Casuarina woodlands, thickets of Melaleuca. Mallee habitat often comprises an understorey of spinifex and low shrubs including wattles, hakeas, sennas and hop-bushes [3].	Likely. Suitable habitat may be available in mallee association A2. Unlikely in A3-A4.
Pandion haliaetus cristatus (Eastern Osprey)		E	1	2016	Predominantly coastal, using a variety of marine and littoral habitats such as bays, estuaries, mangrove swamps, beaches, dunes, cliffs, inshore waters and reefs. The species requires extensive areas of open fresh, brackish or saline water for foraging. Often breeds in a prominent position on rocky headlands, stacks, cliffs, in tall dead trees, or on artificial platforms [3].	Unlikely. There are numerous sightings of the species flying over the Cowell area, but it is unlikely to rely on vegetation under application.
Source; 1- BDBSA, 2 - AoLA, 3 – NatureMaps 4 – Observed/recorded in the field, 5 - Protected matters search tool, 6 – others NP&W Act; E= Endangered, V = Vulnerable, R= Rare EPBC Act; Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable						

Criteria for the likelihood of occurrence of species within the Study area.

Likelihood	Criteria
Highly Likely/Known	Recorded in the last 10 years, the species does not have highly specific niche requirements, the habitat is present and falls within the known range of the species distribution or; The species was recorded as part of field surveys.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species and the area provides habitat or feeding resources for the species.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species, but the area provide limited habitat or feeding resources for the species. Recorded within 20 -40 years, survey effort is considered adequate, habitat and feeding resources present, and species of similar habitat needs have been recorded in the area.
Unlikely	Recorded within the previous 20 years, but the area provide no habitat or feeding resources for the species, including perching, roosting or nesting opportunities, corridor for movement or shelter. Recorded within 20 -40 years; however, suitable habitat does not occur, and species of similar habitat requirements have not been recorded in the area. No records despite adequate survey effort.

4.3 Cumulative impact

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must consider the potential cumulative impact, both direct and indirect, that is reasonably likely to result from a proposed clearance activity.

Clearance directly required for the application

Impacts directly related to the application includes the clearance of 4.0 hectares of native vegetation across five vegetation associations

Subsequent clearance that will be permitted or required

DIT's Standard Operating Procedures allow for pruning or removal of vegetation within the maintenance zones and clearances envelopes associated with the new works. The maintenance zone includes vegetation 1 m beyond the guideposts situated at the edge of the unsealed shoulder, and 1 m around culvert headwalls. Standard clearance envelopes allow for vegetation removal to a height of 6 m from either the edge of shoulder or 1.0 m behind the guidepost, whichever is the greater.

Indirect impacts

Indirect impacts include short-term accumulation of dust generated through construction works, additional runoff to the roadside vegetation resulting from the widened or newly sealed road surface, and altered hydrology around the root zones of trees resulting from additional road seal and compaction of soil.

Construction of the new road through private land will result in the fragmentation of vegetation communities near the intersections at Old Whyalla Rd and Searle Rd, and Old Whyalla Rd and Hornhardt Rd. The resultant fragments (0.3 – 1.4 ha) would be subject to increased edge effects such as weed invasion, traffic disturbance and the disruption of flora and fauna dispersal to larger habitat areas.

The SA Declared weeds Boxthorn, Horehound (*Marrubium vulgare*), Grey Sheoak and Gazania (*Gazania linearis*) are present in parts of vegetation associations A2 and A3. Wards weed,, Onion Weed and Long-fruited Wild Turnip (*Brassica tournefortii*) are common across the project site, but several other environmental weeds are prominent along the roadside verges (Star Thistle, Angled Iceplant, and Carpet Weed (*Aizoon pubescens*). Soil disturbance and the movement of vehicles and machinery increases the risk of further spread and establishment of weeds.

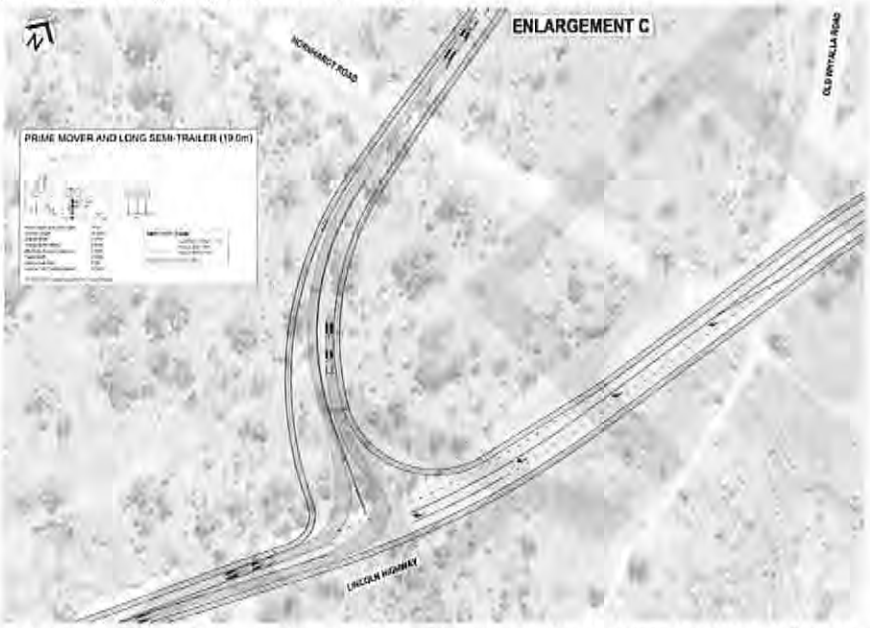
Future stages

This is a self-contained project and there are no future stages that involve vegetation clearance.

4.4 Address the Mitigation Hierarchy

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must have regard to the mitigation hierarchy. The NVC will also consider, with the aim to minimize, impacts on biological diversity, soil, water and other natural resources, threatened species or ecological communities under the EPBC Act or listed species under the NP&W Act.

a) ***Avoidance – outline measures taken to avoid clearance of native vegetation***
The alignment of the route has been moved to avoid high value mallee vegetation and cultural heritage concerns between Lincoln Highway and Hornhardt Rd.



The route was originally planned to pass through high value vegetation between Lincoln Highway and Hornhardt Road.

Works on the Lincoln Highway causeway are restricted to within the existing safety barriers to avoid impacts to the adjacent samphire community (Subtropical and Temperate Coastal Saltmarsh, listed as Vulnerable under the EPBC Act).

b) ***Minimization – if clearance cannot be avoided, outline measures taken to minimize the extent, duration and intensity of impacts of the clearance on biodiversity to the fullest possible extent (whether the impact is direct, indirect or cumulative).***
The construction activity zone is limited to the width required to improve road safety.

The applicant has been provided with locations of SA Declared weeds along the proposed route.

The works will follow DIT's Standard Operating Procedures to prevent the spread of declared and environmental weeds.

c) ***Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimized, such as allowing for the re-establishment of the vegetation.***

Vegetation clearance will be permanent and will not be allowed to recover.

d) ***Offset – any adverse impact on native vegetation that cannot be avoided or further minimized should be offset by the achievement of a significant environmental benefit that outweighs that impact.***

Impacts will be offset by payment to the Native Vegetation Fund.

4.5 Principles of Clearance (Schedule 1, *Native Vegetation Act 1991*)

The Native Vegetation Council will consider Principles 1(b), 1(c) and 1(d) when assigning a level of Risk under Regulation 16 of the Native Vegetation Regulations. The Native Vegetation Council will consider all the Principles of clearance of the Act as relevant, when considering an application referred under the *Planning, Development and Infrastructure Act 2016.*

<table>
<tr><th>Principle of clearance</th><th>Considerations</th></tr>
<tr><td rowspan="3">Principle 1a - it comprises a high level of diversity of plant species</td><td>Relevant information
<table>
<tr><th>Vegetation Association</th><th>No. Native</th><th>No. Introduced</th><th>Plant Diversity Score</th></tr>
<tr><td>A2</td><td>33</td><td>4</td><td>30</td></tr>
<tr><td>A2b</td><td>19</td><td>5</td><td>15</td></tr>
<tr><td>A3</td><td>30</td><td>4</td><td>30</td></tr>
<tr><td>A4</td><td>12</td><td>6</td><td>18</td></tr>
</table></td></tr>
<tr><td>Assessment against the principles
Seriously at Variance (Plant Diversity Score ≥20):
- Vegetation Associations A2 and A3
At Variance (Plant Diversity Score 10-20):
- Vegetation Associations A2b and A4</td></tr>
<tr><td>Moderating factors that may be considered by the NVC
The proposed clearance area is very small (0.1%) relative to the amount of native vegetation within a radius of 5 km.</td></tr>
<tr><td rowspan="3">Principle 1b - significance as a habitat for wildlife</td><td>Relevant information
One EPBC-listed species is known to occur within 5 km of the site and may use the habitat:
- Blue-winged Parrot (Vulnerable).
Ten State-listed species may use habitat available at the sites:
– White-bellied Sea Eagle (Endangered)
– Australian Bustard (Vulnerable)
– Little Eagle (Vulnerable)
– Elegant Parrot (Rare)
– White-winged Chough (Rare)
– Shy Heathwren (Rare)
– Peregrine Falcon (Rare)
– Black Falcon (Rare)
– Jacky Winter (Rare)
– Gilbert's Whistler (Rare)
<table>
<tr><th>Vegetation Association</th><th>Threatened Fauna Score</th><th>Unit biodiversity Score</th></tr>
<tr><td>A2</td><td>0.1</td><td>70.97</td></tr>
<tr><td>A2b</td><td>0</td><td>22.06</td></tr>
<tr><td>A3</td><td>0.06</td><td>61.93</td></tr>
<tr><td>A4</td><td>0</td><td>25.97</td></tr>
</table></td></tr>
<tr><td>Assessment against the principles
Seriously at Variance (Threatened fauna score ≥0.05 / Unit Biodiversity Score >50):
- Vegetation Associations A2 and A3
At Variance (Vegetation Associations (Threatened Fauna Score of <0.05):
- None</td></tr>
<tr><td>Moderating factors that may be considered by the NVC
A large part of the proposed route involves clearance of a narrow strip of roadside vegetation and is unlikely to lead to a long-term decrease in population size or reduce the area of occupancy of the species listed above.</td></tr>
</table>

Principle 1c - plants of a rare, vulnerable or endangered species	Relevant information No threatened flora species were recorded for the project site. Threatened Flora Score – 0 for all vegetation associations
	Assessment against the principles **Seriously at Variance** (Threatened fauna score of ≥0.05 or Unit Biodiversity Score of >50): - None **At Variance** (Vegetation Associations (Threatened Fauna Score of <0.05): - None
	Moderating factors that may be considered by the NVC Not applicable.
Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered:	Relevant information The vegetation associations are not part of a rare or threatened plant community. Threatened Community Score: – 1 for all vegetation associations
	Assessment against the principles Seriously at Variance - None
	Moderating factors that may be considered by the NVC – N/A
Principle 1e - it is significant as a remnant of vegetation in an area which has been extensively cleared.	Relevant information Cleve IBRA Association percent vegetation remnancy - 17% Eyre Hills IBRA Subregion percent vegetation remnancy – 29% Total Biodiversity Score – 218.64
	Assessment against the principles Seriously at Variance - No **At Variance** (Remnancy >10 – 30% and Total Biodiversity Score of 5-500): - All Vegetation Associations
	Moderating factors that may be considered by the NVC Not applicable.
Principle 1f - it is growing in, or in association with, a wetland environment.	Relevant information The vegetation under application is not associated with a wetland
	Assessment against the principles Seriously at Variance - No At Variance - No
	Moderating factors that may be considered by the NVC – N/A
Principle 1g - it contributes significantly to the amenity of the area in which it is growing or is situated.	Relevant information The vegetation occurs along a high-traffic highway frequented by the public, however there are no large native trees present and impacts to low-growing chenopod vegetation are unlikely to significantly reduce the amenity of the area.
	N/A
	Moderating factors that may be considered by the NVC N/A

4.6 Risk Assessment

Determine the level of risk associated with the application

Total clearance	No. of trees	0
	Area (ha)	3.805
	Total biodiversity Score	213.09
Seriously at variance with principle 1(b), 1(c) or 1 (d)		1(b)
Risk assessment outcome		**Level 4**

4.7 NVC Guidelines

Provide any other information that demonstrates that the clearance complies with any relevant NVC guidelines related to the activity.

Not applicable.

5. Clearance summary

Clearance Area(s) Summary table

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	2	30	1	0	0.1	70.97	1.06	77.04	1			82.68	$36,445.28	$2,004.49
A	2B	15	1	0	0	22.06	0.12	2.81	1			3.01	$1,326.81	$72.97
A	3	30	1	0	0.06	61.93	1.87	118.57	1			127.12	$56,034.39	$3,081.89
A	4	18	1	0	0	25.97	0.76	20.14	1			21.59	$9,516.85	$523.43
						Total	**3.8**	**213.09**				**234.40**	**$103,323.33**	**$5,682.78**

Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	213.09	234.40	$103,323.33	$5,682.78	**$109,006.11**

Economies of Scale Factor	0.5
Rainfall (mm)	267

6. Significant Environmental Benefit

A Significant Environmental Benefit (SEB) is required for approval to clear under Division 5 of the Regulations. The NVC must be satisfied that as a result of the loss of vegetation from the clearance that a SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

Indicate how the SEB will be achieved by ticking the appropriate box and providing the associated information:

✓ Pay into the Native Vegetation Fund.

PAYMENT SEB

If a proponent proposes to achieve the SEB by paying into the Native Vegetation Fund, summary information must be provided on the amount required to be paid and the manner of payment:

Payment of **$109,006.11**

References

[1] "Seeds of South Australia," Botanic Gardens of South Australia and Department for Environment and Water, Government of South Australia. Accessed: Jun. 27, 2024. [Online]. Available: https://spapps.environment.sa.gov.au/SeedsOfSA/home.html

[2] "Census of South Australian Plants, Algae and Fungi," State Herbarium of South Australia. Accessed: Jun. 27, 2024. [Online]. Available: http://flora.sa.gov.au/census.shtml

[3] BirdLife Australia, "About HANZAB. [Text before updates sourced from: Marchant, S. et al (eds) 1990-2006 Handbook of Australian, New Zealand and Antarctic Birds. Volume 1 to 7.] Birdlife Australia. Birdlife Australia. Last modified 2023-11-24 06:11.," 2023. [Online]. Available: Source: https://hanzab.birdlife.org.au/header-and-footer-pages/about-hanzab/ Accessed: June 24, 2024

[4] J. Benshemesh, "National Recovery Plan for Malleefowl. Department for Environment and Heritage, South Australia.," 2007.

[5] Department of Climate Change, Energy, the Environment and Water, "Conservation Advice for Neophema chrysostoma (blue-winged parrot). Canberra: Department of Climate Change, Energy, the Environment and Water," 2023.

7. Appendices

Appendix 1. Fauna Survey

Appendix 2. Bushland Assessment Scoresheets associated with the proposed clearance (submitted in Excel format)

Appendix 3. Concept Plan

Appendix 4. Flora Species List