



Native Vegetation Clearing Permit Amendment CPS 9124/2

Sand Backpass Booster Pumps

Site Inspection Report

Prepared by:

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Introduction

The Shire of Esperance (SOE) has proposed to clear a total of 88.737669 m² of native vegetation located at two locations along the Castletown foreshore, west of Bandy Creek, within the Esperance Townsite for the purposes of installing booster pumps for the sand back pass pipeline. The pipeline was required to provide a long-term solution to the coastal erosion along Esperance Bay. Previous clearing permits / Referrals (REF 10516 and CPS 9124/2) allowed for the pipeline, but two small additional areas are required as the previous permit footprints are too small for two of the three required pumps and these will be applied for as an amendment to CPS 9124/2.

Table 1. Tenure of the proposed Sand Back Pass Booster Pump sites (CPS 9124/2 Amendment).

Pump Number	Description	Land Manager	Land Use
2	Freehold Lot 9003, Pln 69443 Daw Drive, Bandy Creek	Shire of Esperance	Future urban development
3	Crown Reserve 27318 Lot 991, Pln 220456 Esplanade, Esperance	Management Order Shire of Esperance	Recreation

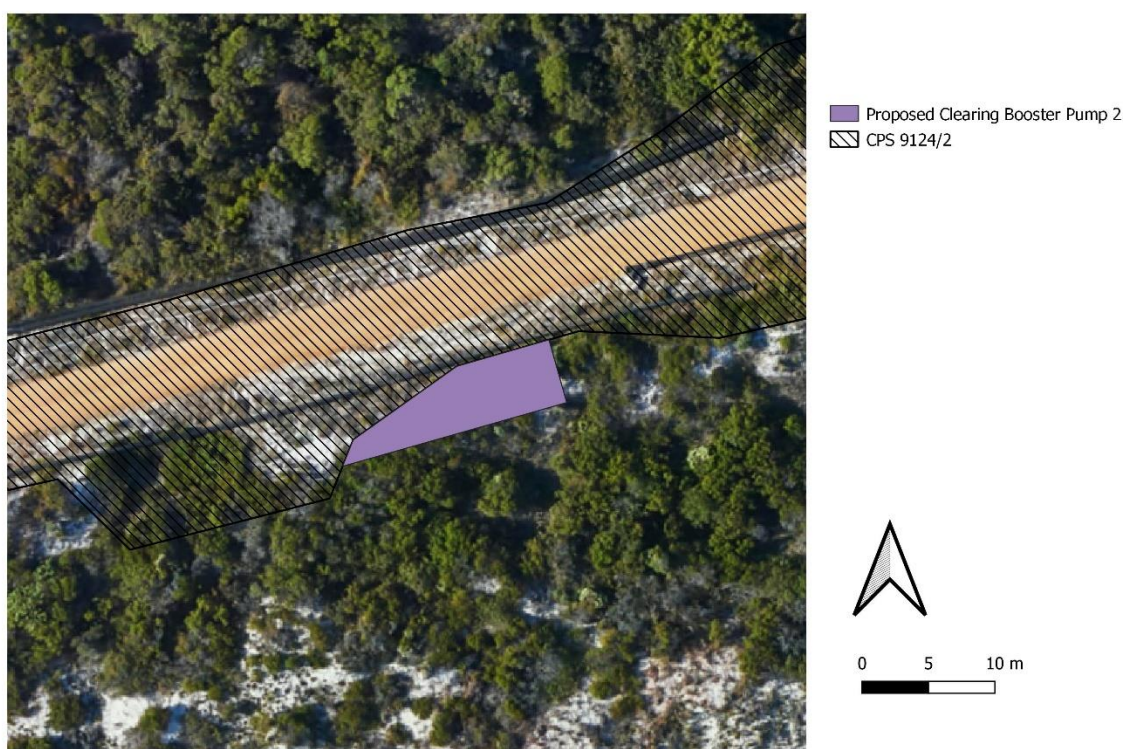


Figure 1. Location and vegetation to be cleared of proposed Sand Back Pass Booster Pump 2 (66m².) A point within the site is 400304m E, 6255541m N, GDA94, Zone 51.

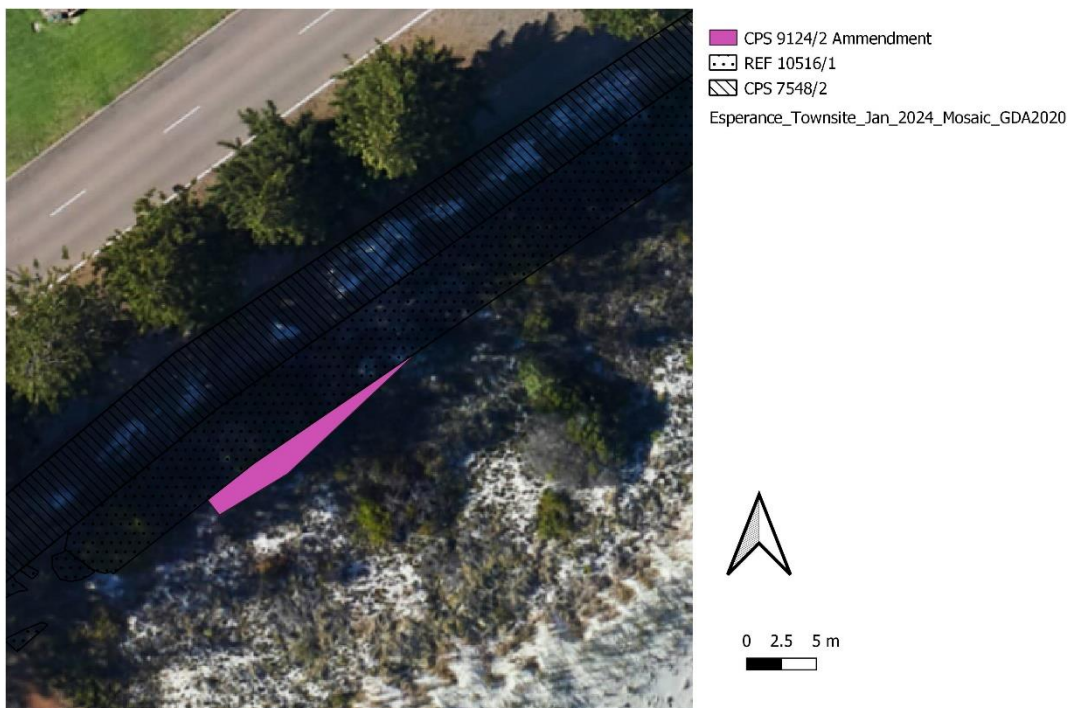


Figure 2. Location of vegetation to be cleared of proposed Sand Back Pass Booster Pump 3 (22.5 m²). A point within the site is 399060m E, 6254989m N, GDA94, Zone 51.

Desktop Summary

Prior to the site inspection, the Shire of Esperance’s Desktop Environmental Impacts Spatial Interrogation Program (DEISIP) was utilised to conduct a comprehensive desktop search for an area encompassing a 20 km radius of the proposed CPS 9124/2 Ammendment Sand Backpass Booster Pumps sites. This program consults numerous Local, State and Federal government spatial data sets to provide valuable environmental, heritage and other relevant information required in the assessment of the project against the ten clearing principles for native vegetation, regulated under Schedule 5 of the *Environmental Protection Act 1986* (EPA 1986).

The site sits within the Recherche subregion of the Esperance Plains IBRA region. The Beard Vegetation Association, Fanny Cove 42, described as: “Shrublands; mallee & acacia scrub on south coastal dunes” is mapped as occurring at this site. 96.09% of this vegetation association remains, 94.87% of this vegetation association within the Shire of Esperance, and 94.56% within the Esperance Plains IBRA region.

Landform	Level plain with moderately inclined dune ridges and associated swales with occasional swamps.
Soils	Calcareous deep sands associated pale deep sands and minor calcareous shallow sands.
Geology / Regolith	Quaternary coastal sands mostly calcareous and unconsolidated.
Vegetation remaining within 5 km (%)	46.145 % of vegetation remains within 5km of the project.

Threatened and Priority Flora (Appendix 3)	45 PF and 0 TF were recorded within 20km of the Sand Back Pass Booster Pumps sites.
Threatened Ecological Communities	2 EPBC listed TECs were recorded within 20km of the Sand Backpass Booster Pumps sites: “Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia” and “Subtropical and Temperate Coastal Saltmarsh”.
Threatened and Priority Fauna (Appendix 4)	49 conservation listed terrestrial species were recorded within 20km of Sand Backpass Booster Pumps sites.
Closest Conservation Reserve	The Sand Backpass Booster Pumps sites are 2 km south from Reserve 15231 Woody Lake Nature Reserve.
Aboriginal Heritage	No heritage site was within the project areas. Approximately 420m from Bandy Creek Historical Camps.

Site Inspection

A site inspection was conducted by Julie Waters (Environmental Coordinator) of the Shire of Esperance on the 8th of November, 2024 at Booster Pump 3. Booster Pump 2 was inspected on 12th of December 2024. The sites were characterised by coastal foredunes.

A single vegetation community was identified within the project area. It was described as common immediate coastal fore-dune shrubland, with swales dominated by *Lepidosperma gladiatum* and *Tetragonia implexicoma*, the slopes by *Acacia cochlearis* and *Rhagodia baccata*, and the ridges dominated by *Spyridium globulosum*. It is believed that the Beard (1973) vegetation association identified in the desktop survey, Fanny Cove 42, described as: “Shrublands; mallee & acacia scrub on south coastal dunes” is an appropriate match for the vegetation community observed.

Vegetation condition varied between a very good and degraded condition at Booster Pump 2. Booster Pump 3 site was all in degraded condition with heavy weed invasion seen at the site. (Keighery, 1994).

The desktop study did not identify the any Threatened Ecological Communities directly within the pump sites, however, the sites were within the buffer areas, for both ‘Subtropical and Temperate Coastal Saltmarsh’ and ‘Proteaceae dominated Kwongkan shrublands of the southeast coastal floristic province of Western Australia’ TECs.

Following the site inspection survey, it can be confirmed that the vegetation at the sites does not meet either Kwongkan or Saltmarsh TEC. No Proteaceae or saltmarsh species were identified within either pump sites.

The site may contain suitable habitat for Quenda due to the presence of a thick sedge layer of *Lepidosperma gladiatum*. None of the other faunal species identified in the desktop survey are likely to be impacted upon.

A total of 29 native flora species, and 25 weed species were identified during the field survey. Weeds were mostly grasses. A full species list is presented in Table 2. No TF or PF identified in the desktop assessment were detected, and a post-survey likelihood of occurrence assessment indicated no species were likely to occur due to a lack of significant limitations in detectability or suitable habitat.

Table 2. Incidental list of flora species present within proposed CPS 9124/2 Amendment for Sand Back Pass Booster Pump sites.

Family	Taxon	Common name	Invasive	Pump 2	Pump 3
Aizoaceae	<i>Carpobrotus virescens</i>	Coastal Pig Face		x	
Aizoaceae	<i>Tetragonia implexicoma</i>	Bower Spinach		x	
Asteraceae	<i>Dimorphotheca ecklonis</i>	Veldt Daisy	*		x
Asteraceae	<i>Gazania linearis</i>	Treasure Flower	*	x	x
Asteraceae	<i>Senecio pinnatifolius</i>			x	
Asteraceae	<i>Olearia axillaris</i>	Coastal Daisy bush		x	
Asteraceae	<i>Sonchus oleraceus</i>	Common Sowthistle	*		x
Brassicaceae	<i>Raphanus raphanistrum</i>	Wild Raddish	*		x
Chenopodiaceae	<i>Rhagodia baccata</i>	Berry Salt bush		x	
Crassulaceae	<i>Aeonium arboreum</i>	Tree Aeonium	*		x
Crassulaceae	<i>Crassula alata</i>		*	x	
Cyperaceae	<i>Ficinia nodosa</i>	Knotted Club Rush		x	
Cyperaceae	<i>Lepidosperma gladiatum</i>	Coastal Saw Sedge		x	x
Ericaceae	<i>Leucopogon parviflorus</i>	Coastal beard heath		x	
Euphorbiaceae	<i>Euphorbia terracina</i>	Geraldton Carnation Weed	*		x
Fabaceae	<i>Acacia cochlearis</i>	Rigid Wattle		x	
Fabaceae	<i>Acacia cyclops</i>	Coastal Wattle		x	
Fabaceae	<i>Melilotus indicus</i>	Annual Yellow Sweetclover	*		x
Geraniaceae	<i>Pelargonium capitatum</i>	Rose Pelargonium	*	x	
Goodeniaceae	<i>Scaevola crassifolia</i>	Thick leaved Fan Flower		x	
Lauraceae	<i>Cassytha sp.</i>	Dodder Laurel		x	
Oxalidaceae	<i>Oxalis pes-caprae</i>	Sour Sob	*		x
Poaceae	<i>Avellina festucoides</i>		*	x	
Poaceae	<i>Avena barbata</i>	Slender Wild Oat	*		x
Poaceae	<i>Bromus diandra</i>	Brome grass	*	x	
Poaceae	<i>Ehrharta longiflora</i>	Annual Veldt Grass	*		x
Poaceae	<i>Hordeum glaucum</i>	Barely Grass	*	x	
Poaceae	<i>Lagurus ovatus</i>	Hare's Tail Grass	*	x	x
Polygonaceae	<i>Muehlenbeckia adpressa</i>	Climbing Lignum		x	
Rhamnaceae	<i>Spyridium globulosum</i>	Basket Bush		x	

Photos



Figure 3. Booster Pump 2 - Taken at 400316m E, 6255552m N GDA95 Zone 51, facing west. Taken by Julie Waters on 12/12/2024.



Figure 4. Booster Pump 3. Taken at 399048m E, 6254979m N GDA95 Zone 51, facing east. Taken by Julie Waters on 8/11/2024

References

- Beard J.S (1973). *The vegetation of the Esperance and Malcolm Areas, Western Australia, 1: 250 000 series*, Vegmap Publications Perth.
- Commonwealth of Australia (2014). Approved Conservation Advice for Proteaceae-dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia, Department of Agriculture, Water and the Environment. Accessible via <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/126-conservation-advice.pdf>
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- Department of Agriculture, Water and the Environment (2022). *Referral guideline for 3 WA threatened black cockatoo species, Carnaby's Cockatoo (Zanda latirostris), Baudin's Cockatoo (Zanda baudinii), and the Forest Red-tailed Black-cockatoo (Calyptorhynchus banksii naso)*. Accessible via: <https://www.dcceew.gov.au/sites/default/files/documents/referral-guideline-3-wa-threatened-black-cockatoo-species-2022.pdf>
- Department of Environmental Regulation (2014). *A guide to the assessment of applications to clear native vegetation – Under Part V Division 2 of the Environmental Protection Act 1986*. Published December 2014, Perth, Western Australia. Accessed via https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.
- Keighery, B.J. (1994). Bushland plant survey. *A guide to plant community survey for the community*. Wildflower Society of WA (Inc.). Nedlands, Western Australia.
- Schoknecht N., Tille P., and Purdie B. (2004). *Soil Landscape Mapping in south-western Australia*, Resource Management Technical Report 20, Department of Agriculture WA.
- Thackway R. and Cresswell I.D. (1995) Eds. *An Interim Biogeographic Regionalisation for Australia: A framework for establishing the national system of reserves*. Version 4.0 Australian Nature Conservation Agency, Canberra ACT.

Appendix 1: Threatened and Priority flora species identified within 20 km

Data provided by Department of Biodiversity, Conservation and Attractions (DBCA) and Western Australian Herbarium in June 2024 was used to assess threatened flora (TF), priority flora (PF), and threatened (TEC) and priority (PEC) ecological communities within 20 km radius of the site. Specifically, spatial data included;

- WAHerb extract (DBCA 2024).
- Threatened and Priority Reporting (TPFL; DBCA 2024).
- Esperance District Threatened Flora (DBCA 2024).

Species	Status	Distance (m)
<i>Cyathostemon sp. Esperance (A. Fairall 2431)</i>	P1	2969.355
<i>Eucalyptus foliosa</i>	P1	15277.55
<i>Hibbertia carinata</i>	P1	6681.443
<i>Lobelia archeri</i>	P1	15850.63
<i>Schoenus sp. Grey Rhizome (K.L. Wilson 2922)</i>	P1	16171.53
<i>Carpobrotus sp. Lateral Flowers (N. Gibson & M. Lyons 973)</i>	P2	651.5585
<i>Comesperma griffinii</i>	P2	16320.7
<i>Dampiera decurrens</i>	P2	16123.85
<i>Goodenia exigua</i>	P2	16764.54
<i>Goodenia quadrilocularis</i>	P2	15897.06
<i>Hibbertia turleyana</i>	P2	7643.479
<i>Leucopogon corymbiformis</i>	P2	2553.294
<i>Myriophyllum muelleri</i>	P2	7354.125
<i>Paracaleana parvula</i>	P2	14993.99
<i>Tecticornia indefessa</i>	P2	4560.293
<i>Adelphacme minima</i>	P3	10867.71
<i>Astartea reticulata</i>	P3	18109.37
<i>Austrobaecka uncinella</i>	P3	4172.847
<i>Austrostipa mundula</i>	P3	13952.1
<i>Brachyloma mogin</i>	P3	19522.2
<i>Comesperma calcicola</i>	P3	5768.675
<i>Dampiera sericantha</i>	P3	9043.869
<i>Dampiera triloba</i>	P3	16432.2
<i>Daviesia pauciflora</i>	P3	7506.453
<i>Eucalyptus famelica</i>	P3	16730.54
<i>Eucalyptus semiglobosa</i>	P3	6875.893
<i>Galium leptogonium</i>	P3	13529.18
<i>Gonocarpus pycnostachyus</i>	P3	17043.31
<i>Hopkinsia adscendens</i>	P3	2969.355
<i>Kunzea salina</i>	P3	16079.13
<i>Lepidium fasciculatum</i>	P3	2969.355
<i>Leucopogon apiculatus</i>	P3	15856.87
<i>Leucopogon interruptus</i>	P3	16261.15

<i>Persoonia scabra</i>	P3	16334.12
<i>Pityrodia chrysocalyx</i>	P3	2995.005
<i>Pterostylis faceta</i>	P3	19377.59
<i>Styphelia rotundifolia</i>	P3	6271.254
<i>Banksia prolata subsp. calcicola</i>	P4	2969.355
<i>Corysanthes limpida</i>	P4	4543.135
<i>Eucalyptus insularis subsp. insularis</i>	P4	16150.41
<i>Eucalyptus preissiana subsp. lobata</i>	P4	17649.7
<i>Eucalyptus x missilis</i>	P4	2982.002
<i>Grevillea baxteri</i>	P4	2461.52
<i>Kennedia beckxiana</i>	P4	13487.04
<i>Myosotis australis subsp. australis</i>	P4	16313.8

Appendix 2: Threatened fauna species identified within 20 km

Assessment of Threatened and Priority fauna potentially occurring within 20 km of the site was conducted utilising the following sources:

- DBCA Threatened Fauna database (DBCA 2024);
- EPBC Act 1986 PMST (DCCEE, 2024).

Taxon	Common name	Conservation Code WA	Conservation Code EPBC	Distance (m)
<i>Thalasseus bergii</i>	Crested tern	MI	MI	225.82
<i>Zanda latirostris</i>	Carnaby's cockatoo	EN	EN	373.45
<i>Apus pacificus</i>	Fork-tailed swift	MI	MI	463.15
<i>Hydroprogne caspia</i>	Caspian tern	MI	MI	866.67
<i>Tringa nebularia</i>	Common greenshank	MI	MI	866.67
<i>Cereopsis novaehollandiae grisea</i>	Recherche Cape Barren goose	VU	VU	866.67
<i>Actitis hypoleucos</i>	Common sandpiper	MI	MI	866.67
<i>Thalassarche chlororhynchos</i>	Atlantic yellow-nosed albatross	VU	MI	1554.74
<i>Puffinus huttoni</i>	Hutton's shearwater	EN		1727.07
<i>Thinornis cucullatus</i>	Hooded plover, hooded dotterel	P4		1947.47
<i>Calidris ruficollis</i>	Red-necked stint	MI	MI	2144.72
<i>Oxyura australis</i>	Blue-billed duck	P4		2144.72
<i>Leipoa ocellata</i>	Malleefowl	VU	VU	2170.51
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	MI	MI	2269.47
<i>Calidris ferruginea</i>	Curlew sandpiper	CR	CR & MI	2269.47
<i>Tringa glareola</i>	Wood sandpiper	MI	MI	2269.47
<i>Plegadis falcinellus</i>	Glossy ibis	MI	MI	2398.96

<i>Charadrius leschenaultii</i>	Greater sand plover, large sand plover	VU	VU & MI	2503.56
<i>Ardenna carneipes</i>	Flesh-footed shearwater	VU	MI	2556.11
<i>Westralunio carteri</i>	Carter's freshwater mussel	VU	VU	2556.11
<i>Stercorarius antarcticus lonnbergi</i>	Brown skua, Subantarctic skua	P4		2556.11
<i>Calidris canutus rogersi</i>	Red knot (subsp. rogersi)	EN	EN & MI	2598.36
<i>Pluvialis squatarola</i>	Grey plover	MI	MI	2598.36
<i>Zanda sp. 'white-tailed black cockatoo'</i>	White-tailed black cockatoo	EN	EN	2618.90
<i>Notamacropus irma</i>	Western brush wallaby	P4		2618.90
<i>Falco peregrinus</i>	Peregrine falcon	OS		2724.72
<i>Limosa lapponica</i>	Bar-tailed godwit	MI	MI	2919.38
<i>Calidris melanotos</i>	Pectoral sandpiper	MI	MI	2919.38
<i>Calidris alba</i>	Sanderling	MI	MI	3352.49
<i>Acanthophis antarcticus</i>	Southern death adder	P3		3711.72
<i>Tringa stagnatilis</i>	Marsh sandpiper	MI	MI	4053.34
<i>Tringa brevipes</i>	Grey-tailed tattler	MI & P4	MI	4053.34
<i>Calidris canutus</i>	Red knot	EN	EN & MI	4053.34
<i>Arenaria interpres</i>	Ruddy turnstone	MI	MI	6529.54
<i>Calidris tenuirostris</i>	Great knot	CR	CR & MI	6529.54
<i>Isodon fusciventer</i>	Quenda, southwestern brown bandicoot	P4		7076.07
<i>Diomedea exulans</i>	Wandering albatross	VU	VU & MI	7490.12
<i>Numenius phaeopus</i>	Whimbrel	MI	MI	8337.64
<i>Thalassarche cauta cauta</i>	Shy albatross	VU	EN & MI	8337.64
<i>Ardenna tenuirostris</i>	Short-tailed shearwater	MI	MI	8337.64
<i>Oceanites oceanicus</i>	Wilson's storm-petrel	MI	MI	8337.64
<i>Elanus scriptus</i>	Letter-winged kite	P4		9556.32
<i>Charadrius bicinctus</i>	Double-banded plover	MI	MI	12382.25
<i>Charadrius mongolus</i>	Lesser sand plover	EN	EN & MI	12630.02
<i>Pluvialis fulva</i>	Pacific golden plover	MI	MI	12630.02
<i>Atelomastix dendritica</i>	Recherche atelomastix millipede	VU		13681.58
<i>Pandion haliaetus</i>	Osprey	MI	MI	16239.60
<i>Stercorarius parasiticus</i>	Arctic jaeger, Arctic skua	MI	MI	16796.59
<i>Parantechinus apicalis</i>	Dibbler	EN	EN	17848.06

Appendix 3: Infrastructure plans

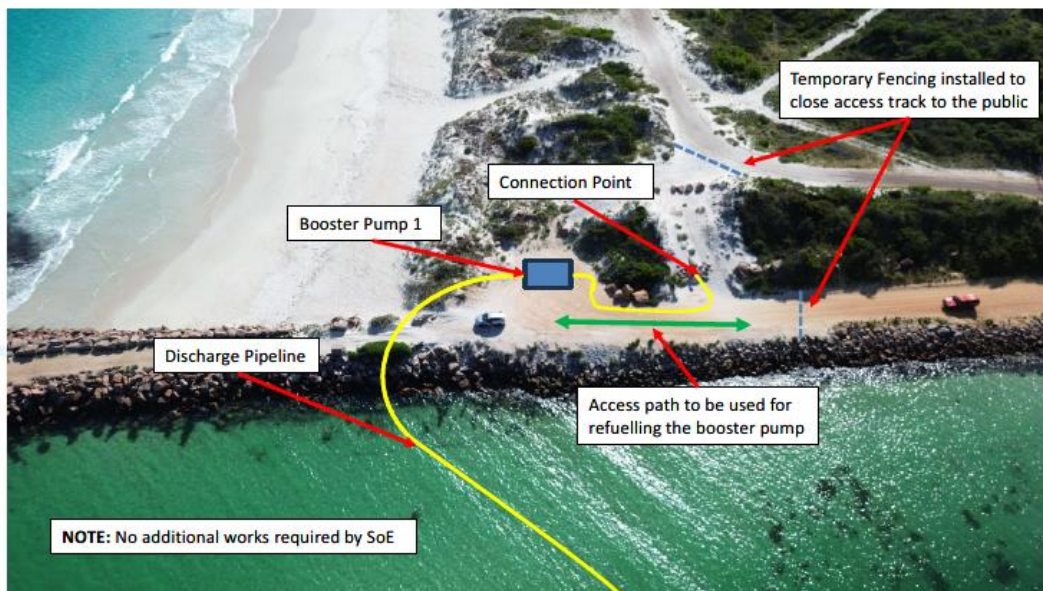
Typical Booster Pump Setup



Marine Infrastructure Specialists



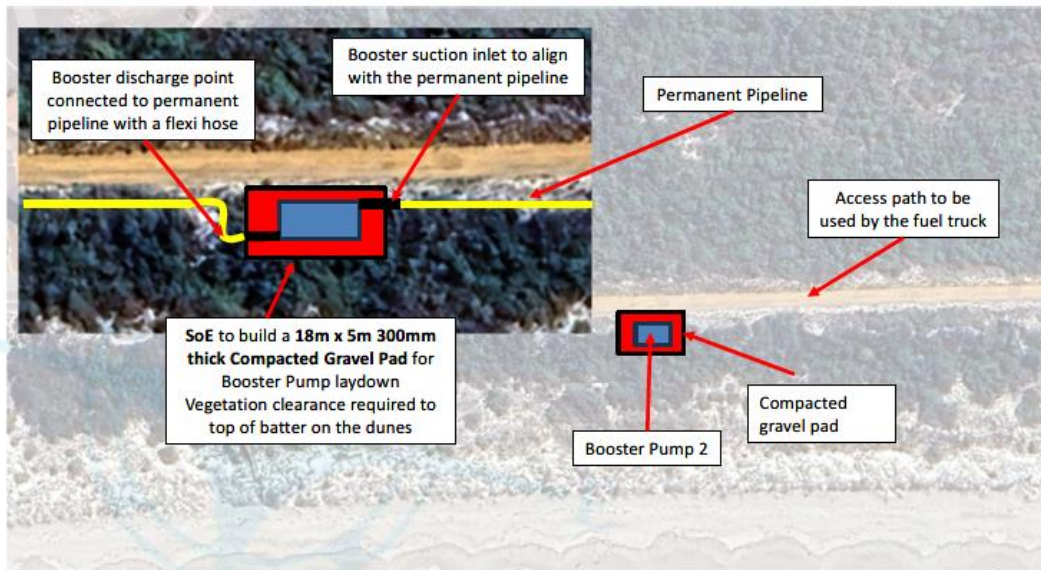
Booster Pump 1



Marine Infrastructure Specialists



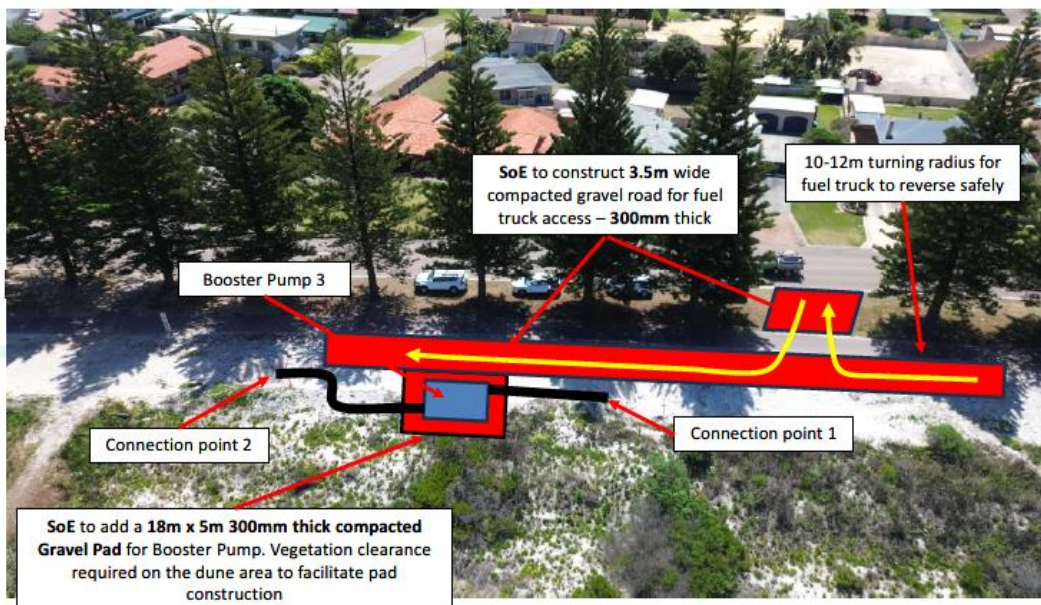
Booster Pump 2



Marine Infrastructure Specialists



Booster Pump 3



Marine Infrastructure Specialists

