

Victorian Desalination Project



D&C Marine Area Environmental Management Plan Attachment I5 - Helicopter Management Sub Plan

DOCUMENT NUMBER					
TDV	0	EV	SB	0013.I5	01



Attachment I5 - Helicopter Management Sub Plan

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Definitions and acronyms

The following Definitions and Acronyms are used in this document and relevant attachments:

A1MT	Area 1 Marine Team
CASA	Civil Aircraft Safety Authority
Cetacea	The taxonomic order that includes whales, dolphins and porpoises.
D&C	Design and Construct
DEWHA	Department of the Environment, Water, Heritage and the Arts
DSE	Department of Sustainability and Environment
EIRP	Environmental Incident Response Plan
EMS	Environment Management System
EMP	Environment Management Plan
EPA	Victorian Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act (Commonwealth) (1999)
F&F	Flora and Fauna
FFG Act	Flora and Fauna Guarantee Act (1988)
FNA	Fly Neighbourly Area
JUB	Jack-up barge
JSEA	Job Safety and Environmental Analysis
Marine Area	The marine component of the VDP. Includes the drilling of vertical holes in the seabed, installation of risers and marine structures, mobilisation and use of vessels for marine monitoring activities and construction.
Marine Works Area (onsite)	Refers to a locality where marine area activities take place. This includes all vessels when in use by TDJV, the area bounded by the temporary marine exclusion zone, the seabed where the marine structures are installed and monitoring locations where monitoring or devices are placed.
OSV	Offshore Support Vessel
PC	Performance Criteria
PR	Performance Requirement
SEI	Site Environment Inspection
SEPs	Site Environmental Plans
TDJV	Thiess Degremont Joint Venture
VDP	Victorian Desalination Project
WAP	Work Area Packages
WP	Work Pack

1 Purpose and scope

This Helicopter Management Sub Plan describes the management measures required to manage and mitigate the potential impacts of TDJV helicopter operations on sensitive fauna and neighbourhood amenity in the vicinity of the plant site during the design and construction (D&C) of the Victorian Desalination Project (VDP). Non project flights operating in the area are not covered by this plan.

This sub plan must be read in conjunction with the Environmental Management System (EMS) Manual, D&C Environmental Management Plan (D&C EMP), D&C Marine Area EMP and D&C Plant and General Area EMP. This sub plan forms an attachment to the D&C Marine Area EMP and addresses requirements listed in the Environmental Compliance Tracker (TDV-0-EV-RP-0001-01), including licence conditions, performance requirements (PR), performance criteria (PC) and other obligations which may impact marine operations.

Specific management measures from this and other environmental sub plans have been incorporated into Work Area Packages (WAP) and Work Packs (WPs), which are also referred to as management procedures, Site Environmental Plans (SEPs) and Job Safety and Environmental Analysis (JSEA's) where applicable.

This sub plan should be read in conjunction with the Coastal Processes and Activities and Marine Flora and Fauna Sub Plans (Attachment I1 and I4 respectively).

2 Objectives and targets

The objective of this sub plan is to minimise disturbance impacts from TDJV helicopter operations during construction to ensure project objectives, targets and obligations, including performance requirements and criteria, are met.

Table 2-1 outlines the relevant helicopter management objectives and targets nominated to be achieved during the D&C phase of the VDP. Numbered entries are applicable performance requirements taken from Schedule A of Appendix S3 of the Project Deed.

Table 2-1. Environmental objectives, targets and performance requirements

Issue	Objective/Performance Criteria	Target/Performance Requirements
Coastal Flora and Fauna	<p>Protect the ecological values of coastal habitat. No reduction in habitat values for significant species. Minimise loss of significant species' individuals. (PR#30192) C.</p>	<p>Develop and implement methods and management systems designed to ensure no adverse effect on coastal flora and fauna from Project Activities including: Manage helicopter use to avoid low level flyovers of Williamson's Beach to minimise impacts on Hooded Plovers (PR#30194) C.</p>
Airborne Noise	<p>Protect neighbourhood amenity. Minimise impacts from airborne noise (PR#24158) C.</p>	<p>Develop and implement a communication strategy with the key stakeholders and the community to manage the impact of construction noise and limit disturbance to local amenity (PR#24160). C</p>

D = Design phase requirement; C= Construct phase requirement



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All PRs from Project Deed Schedule A of Appendix S3 are contained within the D&C Marine Area EMP Attachment G – Environmental Obligations Register. The Environmental Compliance Tracker tracks conformance with these PRs and is updated regularly by the TDJV Environmental Coordinator and Area Environmental Managers.

3 Legal, regulatory, licence, permits and approval requirements

This sub plan has been developed in accordance with the following legislation and standards:

- *Air Navigation Act, (1920)*
 - Air Navigation (Aircraft Noise) Regulations 1984.
- *Civil Aviation Act, (1988)*
 - Civil Aviation Regulations 1988
- *Wildlife Act, (1975)*
 - Wildlife (Marine Mammals) Regulations 2009.
- *Environment Protection and Biodiversity Conservation Act, (1999)*
 - EPBC Act Management Strategy
- *Flora and Fauna Guarantee Act (1988)*

The legislative and contractual requirements for the D&C Marine Area works are summarised in:

- D&C Marine Area EMP – Attachment E – Environmental Legislation Register
- D&C Marine Area EMP – Attachment F – Environmental Licence, Permit and Approval Register
- D&C Marine Area EMP – Attachment G – Environmental Obligations Register.

The applicable Performance Requirements from Project Deed Schedule A of Appendix S3 are provided in Table 2-1.

Under the Project Deed the D&C EMP, all sub plans and any changes to these must be endorsed by the State who may refer aspects to relevant agencies.

EPA and any other relevant agencies and stakeholders will be consulted with regard to any specific approval requirements in relation to this sub plan. The requirements of any permits, licence and approval obtained will be placed in the Environmental Licence, Permit and Approval Register on receipt and updated in the Environmental Compliance Tracker.



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4 Existing conditions and issues

TDJV helicopter operations will consist of scheduled personnel transfers from Moorabbin airport to and from the Jack Up Barge (JUB) with approximately 5 transfers per week. Other TDJV helicopter operations will include site aerial photography which will occur approximately monthly. No flights are anticipated to occur between the VDP Plant site and the JUB (excluding potential emergencies).

4.1 Noise

The existing noise environment around the VDP Plant and General Area site is characterised by:

- Natural noise including surf, wind and rain
- Traffic (on Lower Powlett Road and Mouth of Powlett Road)
- Local industry (predominantly agriculture and a small saw mill, approximately 500 metres east on Lower Powlett Road).

4.2 Sensitive fauna

If not managed correctly, helicopters flying within the vicinity of the VDP plant and marine works area sites have the potential to adversely affect sensitive fauna including:

- The Hooded Plover which is a listed species under both the EPBC and FFG Acts is known to inhabit and breed in the dune region of Williamson's beach adjacent to the plant site. Hooded plover nesting locations are detailed in Figure 4-1.
- Whale species listed under the EPBC Act and/or FFG Act including the humpback whale, southern right whale and blue whale.

The JUB will be positioned approximately 770m and 1100m offshore, from the high tide mark, for the drilling and installation of the Marine intake and outlet risers respectively. This is therefore indicative of the distance from the JUB to the nearest sensitive area in regards to Hooded Plovers.

4.3 Neighbourhood amenity

Neighbourhood amenity has the potential to be affected by project related flights. Sensitive neighbours are detailed in Figure 4-1 and include the twelve residences located within a distance of 1.5 kilometres of the Plant site.

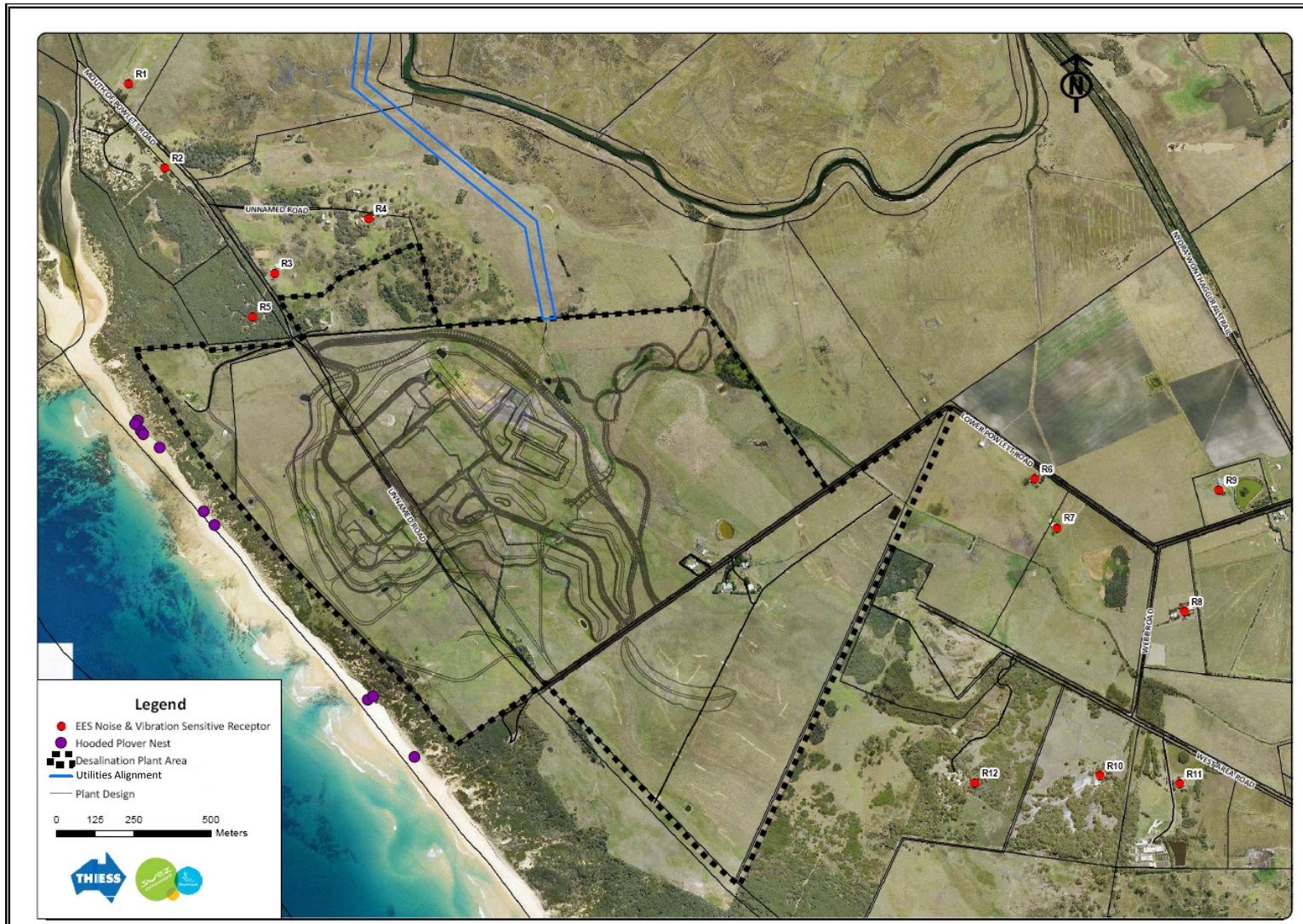


Figure 4-1. Sensitive receptors in the proximity of the desalination plant.

5 Environmental risks

An environmental risk assessment has been carried out for the D&C Marine Area works. This assessment is contained in the Environmental Risk Register, Attachment C of the D&C Marine Area EMP. Table 5-1 summarises the potential hazards from project activities, potential impacts of these hazards and the risk of occurrence as rated by the environmental risk assessment.

Table 5-1. Summary of marine area risk assessment for Helicopter Management

Activity posing hazard	Risk/ Potential Impact	Inherent Risk (before controls)	Control Measures Reference (Att I5.1)
Helicopter operations	Disturbance to sensitive fauna: <ul style="list-style-type: none"> Hooded Plovers (i.e. general disruption, reducing breeding success etc.) Whales (including causing stress, changes in behaviour etc.) Disturbance of local amenity 	High	#1-8 & 10-13

Attachment C of the D&C Marine Area EMP should be consulted for a comprehensive assessment of these risks.

6 Control, mitigation and management measures

Attachment I5.1 describes a range of mitigation and control measures that will be used to minimise impacts from TDJV helicopter operations.

The measures in Attachment I5.1 are designed to address potential impacts from the risks outlined in Section 5 as well as deliver on the objectives, targets and in particular the PRs listed in Section 2. They include requirements and responsibilities for design, construction, evaluating performance and reporting.

Control measures in Attachment I5.1 include references to a “Flight Path Plan” and “Fly Neighbourly Area” which are further detailed in the Helicopter Management SEP (TDV-0-EV-PL-0016).

Attachment 15.1 also references a “Flight Log” which is further detailed in Attachment 15.2 – Flight Log.

7 Site environmental plans

SEPs have been developed for the Marine Area works that detail practical environmental management measures implemented to minimise potential impacts of construction activity on the environment and community.



Attachment I5 - Helicopter Management Sub Plan

The information contained in the SEPs is presented in pictorial and tabular drawing format. This is to make them easy to use by all site personnel, consultants and subcontractors. SEPs are updated to reflect operating practices on a regular basis.

Helicopter management controls set out in the Helicopter Management SEP (TDV-0-EV-PL-0016) are drawn from this sub plan.

SEPs are held by the Marine Area Environment Manager and are provided on site as applicable. The Helicopter Management SEP (TDV-0-EV-PL-0016) will be provided to the helicopter operator and compliance required at all times when working under TDJV. The Helicopter Management SEP will also be held onboard the OSV and JUB at all times throughout offshore operations.

8 Evaluating performance and reporting

Environmental audits and site environmental inspections (SEIs) are scheduled to detect where PRs are not being met with appropriate corrective actions developed to address these issues as they arise. Schedules, responsibilities and reporting procedures for helicopter management are set out in the Monitoring, inspection, audit and reporting schedule – Attachment L of the D&C Marine Area EMP.

This monitoring will be undertaken by appropriately qualified personnel, in accordance with the appropriate standards and guidelines as specified in Attachment L of the D&C Marine Area EMP.

9 Contingency measures

Contingency measures have been developed and are detailed below. The control measures table (Attachment I5.1) focuses on preventative measures.

All environmental incidents will be responded to in accordance with the Marine Environmental Incident Response Procedure (EIRP). The EIRP provides project specific details for the identification of and response to potential environmental related incidents in the Marine Area work sites during the D&C phase of the VDP. It provides guidance on strategies to manage potential and actual incidents, as well as follow-up and reporting requirements.

The environmental risk assessment has identified the following circumstances that could occur outside normal operating conditions:

- Disturbance to local amenity due to helicopter noise.
- Disturbance impacts to hooded plovers due to TDJV helicopter operations.
- Helicopters disturbance to whales identified.

If these circumstances occur, the following contingency measures will be implemented (Figure 9-1).

Additionally the emergency ditching of a helicopter during TDJV operations has been recognised as a circumstance that could occur outside normal operating conditions. In the event that this occurs the Helicopter Operator's Emergency Response Plan will be enacted. Any environmental consequences of the ditching will subsequently be responded to and reported in accordance with the EIRP.

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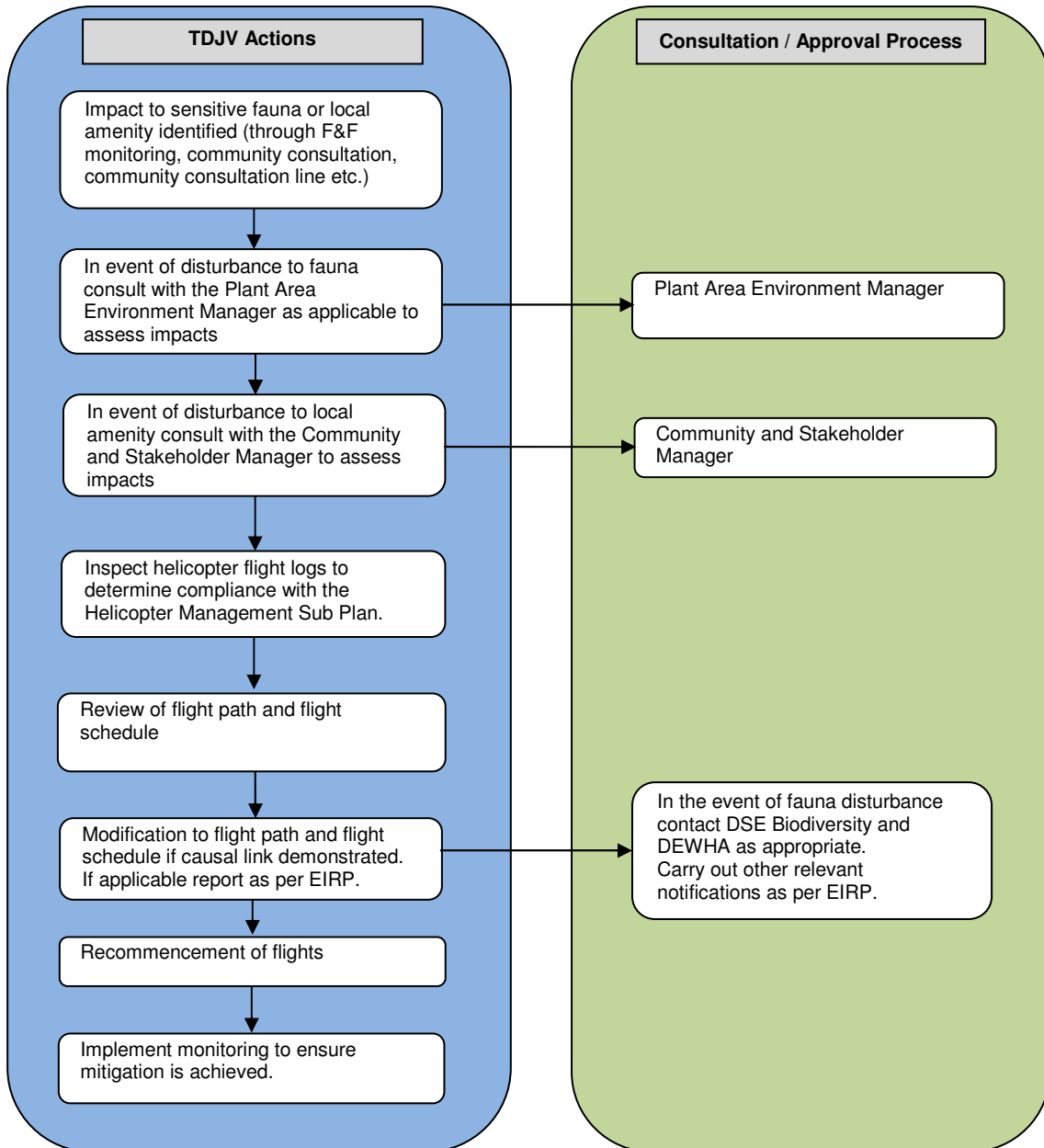


Figure 9-1. Contingency measures in the event of disturbance to sensitive fauna or local amenity.



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Attachment I5 - Helicopter Management Sub Plan

ATTACHMENT I5.1 Helicopter Management – Control Measures Table



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ATTACHMENT I5.1 HELICOPTER MANAGEMENT – CONTROL MEASURES TABLE

#	Issue	PR # addressed	Control Measure	Responsibility *	Project Phase	Evidence	Audit Check
1	Minimise Disturbance (sensitive species and neighbourhood amenity)	24158, 30192 & 30194	<p>Low Level Flyovers</p> <p>The following are required under the Civil Aviation Regulations 1998:</p> <ul style="list-style-type: none"> No low level flyovers during general operations (excluding take off, landing and emergencies): <ul style="list-style-type: none"> A height less than 1000 feet (approximately 300 metres) over any city, town or populous area; and/ or A height less than 500 feet (approximately 150 metres) over any other area. <p>Further details on low level flyover requirements are detailed in the Helicopter Management SEP (TDV-0-EV-PL-0016).</p>	Helicopter Pilots	Construct	Flight Logs	
2	Protection of marine mammals	30192, 30194	<p>Helicopter Management (Ocean)</p> <p>All TDJV flights over the Ocean will maintain a minimum overflight height of 500m (approximately 1650 feet). The following must also be complied with in accordance with the Wildlife (Marine Mammals) Regulations 2009:</p> <ul style="list-style-type: none"> Not approach within 500 vertical metres, within a 500 metre radius, of a whale, dolphin or seal (as per figure 1 below); 	Helicopter Pilots; and Marine Area Environment Manager	Construct	Flight Logs	

#	Issue	PR # addressed	Control Measure	Responsibility *	Project Phase	Evidence	Audit Check
			<div data-bbox="611 405 1406 895" data-label="Diagram"> </div> <p data-bbox="562 903 1375 994">Figure 1. Minimum approach distance to a whale by a Helicopter. Source: DEWHA, Australian National Guidelines for Whale and Dolphin Watching 2005.</p> <ul data-bbox="562 1007 1386 1214" style="list-style-type: none"> • Avoid approaching marine mammals from head-on; • Avoid flying over or passing the shadow of the aircraft over marine mammals; and • Move away if a marine mammal shows signs of disturbance such as (but not limited to) tail slapping, trying to leave the area, sudden changes in behaviour, rapid changes in direction or speed of swimming or increased time diving. <p data-bbox="562 1222 1339 1278">The above requirements must be complied with at all times excluding the following cases:</p> <ul data-bbox="562 1286 1339 1378" style="list-style-type: none"> • In the case of an emergency (avoiding damage or preventing further damage to person or property); or • Taking off or landing; or 				

#	Issue	PR # addressed	Control Measure	Responsibility *	Project Phase	Evidence	Audit Check
			<ul style="list-style-type: none"> Complying with an Act or regulations relating to the operation of helicopters. <p>Further details on 'helicopter management zones' including the 'Coastal and Ocean zone' are detailed in the Helicopter Management SEP (TDV-0-EV-PL-0016).</p>				
3	Protection of the hooded plover and local neighbourhood amenity	24158, 30192 & 30194	<p>Fly Neighbourly Area</p> <p>The FNA has been designed to provide protection of sensitive coastal fauna, specifically Hooded Plovers on Williamsons Beach and the dune region adjacent to the Plant Site. The FNA also provides for the protection of local amenity for sensitive neighbours to the North of the site, including the local caravan park. Sensitive Neighbours to the Southeast of the Plant Site are not covered by the FNA. However, these sensitive receivers should not be affected by TDJV flight paths and are otherwise protected by strict compliance of all flights to Civil Aviation Regulations.</p> <p>All TDJV aircraft are to comply with the FNA at all times, excluding emergencies (avoiding damage or preventing further damage to person or property), as follows.</p> <ul style="list-style-type: none"> A minimum overflight height of 500m (approximately 1650 feet) will be observed over the Fly Neighbourly Area at all times where safe to do so. <p>Further details on 'helicopter management zones' including the FNA are detailed in the Helicopter Management SEP (TDV-0-EV-PL-0016).</p>	Helicopter Pilots; and Marine Area Environment Manager	Construct	Flight logs Inspections & Checklists	
4	Protection of the hooded plover and local neighbourhood amenity	24158, 30192 & 30194	<p>Helicopter Management (Coastal)</p> <ul style="list-style-type: none"> Minimisation of flights across Bass Coast beaches to protect hooded plovers and amenity. No low level flyovers (as per #1) Longitudinal flight paths along the beach area will be avoided along the Bass Coast. <p>Further details on 'helicopter management zones' including the 'Coastal and Ocean zone' are detailed in the Helicopter Management SEP (TDV-0-EV-PL-0016).</p>	Helicopter Pilots; and Marine Area Environment Manager	Construct	Flight logs	

#	Issue	PR # addressed	Control Measure	Responsibility *	Project Phase	Evidence	Audit Check
5	Protection of the hooded plover and local neighbourhood amenity	24158, 30192 & 30194	<p>Flight Path Plan</p> <p>A standard Flight Path is to be followed by all TDJV aircraft completing personnel transfer to/from the JUB at all times. This will be provided in the Helicopter Management SEP (TDV-0-EV-PL-0016) upon confirmation of Helicopter Operator(s)/Airport(s) to be used.</p> <p>The standard flight path plan will help minimise flight paths over sensitive areas in regards to both sensitive fauna and amenity. It includes the following measures:</p> <ul style="list-style-type: none"> • No low level flyovers (including over Williamsons Beach in accordance with PR#30194). • Compliance with the 'FNA' helicopter management zone. • Compliance with 'Coastal and Ocean' helicopter management requirements. • Minimisation of flights over residential areas to help protect neighbourhood amenity. • Flight paths will follow high ambient noise routes (highways etc) and unpopulated routes (waterways, etc) as deemed appropriate. • The flight path plan will stipulate take off and descent profiles and the direction from which sites (e.g. the JUB) must be approached in order to further minimize potential fauna disturbance. <p>Further details are included in the Helicopter Management SEP (TDV-0-EV-PL-0016).</p>	Helicopter Pilots; and Marine Area Environment Manager	Construct	Flight logs	

Att I5.1 D&C Marine Area – Helicopter Management Sub Plan

#	Issue	PR # addressed	Control Measure	Responsibility *	Project Phase	Evidence	Audit Check
6	Disturbance to Hooded Plovers	30192 & 30194	<ul style="list-style-type: none"> Repeat surveys of the population will be undertaken year round, but with particular focus on the breeding season for the species (August to March). The surveys will be undertaken weekly during the breeding season and fortnightly during the non-breeding season. <p>The hooded plover monitoring program is detailed in the D&C Plant and General Area EMP – Flora and Fauna sub plan (Attachment I5.1 Control Measures Table).</p> <p>Details of scheduled helicopter movements will be communicated to the Plant and General Area Environment Team by the Marine Environment team to allow monitoring to take into account helicopter movements and ensure that control measures are effective.</p>	Plant and General Area Environment Manager; and Marine Area Environment Manager	Construct	Monitoring Records	
7	Minimise unnecessary disturbance	24158, 30192 & 30194	<p>A Helicopter Flight Log must be completed for all TDJV helicopter flights. This is managed through Attachment I5.3 - Helicopter Flight Log.</p> <p>The helicopter flight log will help minimise flight times in sensitive areas, in regards to both sensitive fauna and neighbourhood amenity, where practical.</p>	Helicopter Pilots; and Marine Area Environment Manager	Construct	Flight logs	
8	Minimise unnecessary disturbance	24158,	Helicopter operations will be limited to daylight hours (excluding the case of an emergency).	Helicopter Pilots; and Marine Area Environment Manager	Construct	Flight logs	
9	Communication Strategy	24160	<p>Communication Strategy</p> <p>Communication strategy with key stakeholders and the community to include:</p> <ul style="list-style-type: none"> Consultation with sensitive receptors. Works Notifications. 24 hour community liaison hotline. 	Stakeholder and Community Relations Manager	Construct	Works Notifications Meeting Records Complaints Register	

Att I5.1 D&C Marine Area – Helicopter Management Sub Plan

#	Issue	PR # addressed	Control Measure	Responsibility *	Project Phase	Evidence	Audit Check
10	Emergency and Incident Response	-	<ul style="list-style-type: none"> Emergencies and abnormal events will be covered by the Emergency Response Plan of the subcontractor providing helicopter operations to TDJV. All environmental incidents will be addressed in accordance with the Environmental Incident Response Plan (D&C Marine Area EMP - Attachment K). 	Offshore Construction Manager; and Marine Area Environment Manager	Construct	HSE Records	
11	Cetacean Sightings – Records	-	<ul style="list-style-type: none"> Potential cetacean sightings from the air are to be communicated to the marine area environment team as soon as practicable (including radio communication). The marine area environment team will document sightings and report them to DEWHA and DSE quarterly. This is within the requirement to complete annual reporting as required in accordance with condition 6 of the EPBC Act approval. 	Helicopter Pilots; and Marine Area Environment Manager	Construct	Flight logs Whale Sighting Records (Attachment I7.2)	
12	Cetacean Sightings - Actions	-	<p>If cetacean(s) are observed by the A1MT the helicopter operator will be notified. If a whale is observed within the 1km shutdown zone helicopter operations will be ceased, with the exception of the following cases:</p> <ul style="list-style-type: none"> Emergencies; and/or If a helicopter is already en route to the JUB. 	All Marine Area Staff; and Marine Area Environment Manager	Construct	Whale Sighting Records (Attachment I7.2)	
13	Minimise Airborne Noise	24158, 30192	<p>Helicopter Selection</p> <p>The Eurocopter EC130 to be used for personnel transfer to the JUB:</p> <ul style="list-style-type: none"> Single engine light helicopter which features an enclosed tail fan rather than the traditional tail rotor found on the older AS350. This Fenestron has unevenly spaced blades which has the advantage of reducing outside noise by approximately 50% compared to a tail rotor. 				

* The *Responsibilities* column refers in many cases to senior positions within the project organisation, due to the changing nature of project teams. In practice some responsibilities may be delegated by the person nominated.



Attachment I5 - Helicopter Management Sub Plan

ATTACHMENT I5.2 Flight Log



Attachment I5 - Helicopter Management Sub Plan

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ATTACHMENT I5.2 HELICOPTER MANAGEMENT – FLIGHT LOG

This attachment provides a Flight Log to be completed for all VDP project flights. This is to ensure that all flights comply with the requirements of the Helicopter Management sub plan and minimise environmental and local amenity disturbance. A live register all Helicopter Flight logs will be maintained by the TDJV environment team.

Control measures relating to Helicopter Management are described in Attachment I5.1 Control Measures Table. Contingency measures relating to helicopter operations are described in the Helicopter Management Sub Plan, section 9.

Date:	
Pilot Name:	
Helicopter Operating Organisation:	
Purpose of flight: (e.g. Personnel transfer to/from the JUB, aerial photography of the Plant site etc. Include specific details where possible)	
Flight Departure Time:	
Flight Duration (minutes):	
Helicopter Details: (e.g. model and size etc)	
Flight Origin:	
Flight Path Details: (e.g. followed standard flight path to the JUB, followed the pipeline alignment from Berwick to the Plant Site for aerial photography)	
Compliance with the Helicopter Management SEP (TDV-0-EV-PL-0016): including: - No low level flyovers; - Compliance with helicopter management zones (General, FNA, Coastal and Ocean zone management requirements); and - Flight Path Plan.	
Whale sightings (Y/N): (If so include whether identification was possible and how the sighting was communicated to the Environment Team/JUB/OSV)	
Other:	
Signed:	