



# Referral of proposed action

## What is a referral?

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) provides for the protection of the environment, especially matters of national environmental significance (NES). Under the EPBC Act, a person must not take an action that has, will have, or is likely to have a significant impact on any of the matters of NES without approval from the Australian Government Environment Minister or the Minister's delegate. (Further references to 'the Minister' in this form include references to the Minister's delegate.) To obtain approval from the Environment Minister, a proposed action should be referred. The purpose of a referral is to obtain a decision on whether your proposed action will need formal assessment and approval under the EPBC Act.

Your referral will be the principal basis for the Minister's decision as to whether approval is necessary and, if so, the type of assessment that will be undertaken. These decisions are made within 20 business days, provided sufficient information is provided in the referral.

## Who can make a referral?

Referrals may be made by or on behalf of a person proposing to take an action, the Commonwealth or a Commonwealth agency, a state or territory government, or agency, provided that the relevant government or agency has administrative responsibilities relating to the action.

## When do I need to make a referral?

A referral must be made for actions that are likely to have a significant impact on the following matters protected by Part 3 of the EPBC Act:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Commonwealth marine environment (sections 23 and 24A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
- The environment, if the action involves Commonwealth land (sections 26 and 27A), including:
  - actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land);
  - actions taken on Commonwealth land that may have a significant impact on the environment generally;
- The environment, if the action is taken by the Commonwealth (section 28)
- Commonwealth Heritage places outside the Australian jurisdiction (sections 27B and 27C)

You may still make a referral if you believe your action is not going to have a significant impact, or if you are unsure. This will provide a greater level of certainty that Commonwealth assessment requirements have been met.

To help you decide whether or not your proposed action requires approval (and therefore, if you should make a referral), the following guidance is available from the Department's website:

- the Policy Statement titled Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Additional sectoral guidelines are also available.

- the Policy Statement titled Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies.
- the Policy Statement titled Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources.
- the interactive map tool (enter a location to obtain a report on what matters of NES may occur in that location).

#### **Can I refer part of a larger action?**

In certain circumstances, **the Minister may not accept a referral for an action that is a component of a larger action and may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (Section 74A, EPBC Act)**. If you wish to make a referral for a staged or component referral, read 'Fact Sheet 6 Staged Developments/Split Referrals' and contact the Referrals Gateway (1800 803 772).

#### **Do I need a permit?**

Some activities may also require a permit under other sections of the EPBC Act or another law of the Commonwealth. Information is available on the Department's web site.

#### **Is your action in the Great Barrier Reef Marine Park?**

If your action is in the Great Barrier Reef Marine Park it may require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If a permission is required, referral of the action under the EPBC Act is deemed to be an application under the GBRMP Act (see section 37AB, GBRMP Act). This referral will be forwarded to the Great Barrier Reef Marine Park Authority (the Authority) for the Authority to commence its permit processes as required under the Great Barrier Reef Marine Park Regulations 1983. If a permission is not required under the GBRMP Act, no approval under the EPBC Act is required (see section 43, EPBC Act). The Authority can provide advice on relevant permission requirements applying to activities in the Marine Park.

The Authority is responsible for assessing applications for permissions under the GBRMP Act, GBRMP Regulations and Zoning Plan. Where assessment and approval is also required under the EPBC Act, a single integrated assessment for the purposes of both Acts will apply in most cases. Further information on environmental approval requirements applying to actions in the Great Barrier Reef Marine Park is available from <http://www.gbrmpa.gov.au/> or by contacting GBRMPA's Environmental Assessment and Management Section on (07) 4750 0700.

The Authority may require a permit application assessment fee to be paid in relation to the assessment of applications for permissions required under the GBRMP Act, even if the permission is made as a referral under the EPBC Act. Further information on this is available from the Authority:

Great Barrier Reef Marine Park Authority

2-68 Flinders Street PO Box 1379

Townsville QLD 4810

AUSTRALIA

Phone: + 61 7 4750 0700

Fax: + 61 7 4772 6093

[www.gbrmpa.gov.au](http://www.gbrmpa.gov.au)

#### **What information do I need to provide?**

**Completing all parts of this form will ensure that you submit the required information and will also assist the Department to process your referral efficiently. If a section of the referral document is not applicable to your proposal enter N/A.**

You can complete your referral by entering your information into this Word file.

#### **Instructions**

Instructions are provided in blue text throughout the form.

#### **Attachments/supporting information**

The referral form should contain sufficient information to provide an adequate basis for a decision on the likely impacts of the proposed action. You should also provide supporting documentation, such as environmental reports or surveys, as attachments.

Coloured maps, figures or photographs to help explain the project and its location should also be submitted with your referral. Aerial photographs, in particular, can provide a useful perspective and context. Figures should be good quality as they may be scanned and viewed electronically as black and white documents. Maps should be of a scale that clearly shows the location of the proposed action and any environmental aspects of interest.

**Please ensure any attachments are below three megabytes (3mb) as they will be published on the Department's website for public comment. To minimise file size, enclose maps and figures as separate files if necessary. If unsure, contact the Referrals Gateway (email address below) for advice. Attachments larger than three megabytes (3mb) may delay processing of your referral.**

**Note: the Minister may decide not to publish information that the Minister is satisfied is commercial-in-confidence.**

### **How do I pay for my referral?**

From 1 October 2014 the Australian Government commenced cost recovery arrangements for environmental assessments and some strategic assessments under the EPBC Act. If an action is referred on or after 1 October 2014, then cost recovery will apply to both the referral and any assessment activities undertaken. Further information regarding cost recovery can be found on the Department's website at:

<http://www.environment.gov.au/epbc/publications/cost-recovery-cris>

#### **Payment of the referral fee can be made using one of the following methods:**

- **EFT Payments can be made to:**

BSB: 092-009

Bank Account No. 115859

Amount: \$7352

Account Name: Department of the Environment.

Bank: Reserve Bank of Australia

Bank Address: 20-22 London Circuit Canberra ACT 2601

Description: The reference number provided (see note below)

- **Cheque** - Payable to "Department of the Environment". Include the reference number provided (see note below), and if posted, address:

The Referrals Gateway  
Environment Assessment Branch  
Department of the Environment  
GPO Box 787  
Canberra ACT 2601

- **Credit Card**

Please contact the Collector of Public Money (CPM) directly (call (02) 6274 2930 or 6274 20260 and provide the reference number (see note below).

Note: in order to receive a reference number, submit your referral and the Referrals Gateway will email you the reference number.

### **How do I submit a referral?**

Referrals may be submitted by mail or email.

#### **Mail to:**

Referrals Gateway  
Environment Assessment Branch  
Department of Environment  
GPO Box 787  
CANBERRA ACT 2601

- If submitting via mail, electronic copies of documentation (on CD/DVD or by email) are required.

**Email to: [epbc.referrals@environment.gov.au](mailto:epbc.referrals@environment.gov.au)**

- Clearly mark the email as a 'Referral under the EPBC Act'.
- Attach the referral as a Microsoft Word file and, if possible, a PDF file.
- **Follow up with a mailed hardcopy including copies of any attachments or supporting reports.**

## **What happens next?**

Following receipt of a valid referral (containing all required information) you will be advised of the next steps in the process, and the referral and attachments will be published on the Department's web site for public comment.

The Department will write to you within 20 business days to advise you of the outcome of your referral and whether or not formal assessment and approval under the EPBC Act is required. There are a number of possible decisions regarding your referral:

**The proposed action is NOT LIKELY to have a significant impact and does NOT NEED approval**

No further consideration is required under the environmental assessment provisions of the EPBC Act and the action can proceed (subject to any other Commonwealth, state or local government requirements).

**The proposed action is NOT LIKELY to have a significant impact IF undertaken in a particular manner**

The action can proceed if undertaken in a particular manner (subject to any other Commonwealth, state or local government requirements). The particular manner in which you must carry out the action will be identified as part of the final decision. You must report your compliance with the particular manner to the Department.

**The proposed action is LIKELY to have a significant impact and does NEED approval**

If the action is likely to have a significant impact a decision will be made that it is a *controlled action*. The particular matters upon which the action may have a significant impact (such as World Heritage values or threatened species) are known as the *controlling provisions*.

The controlled action is subject to a public assessment process before a final decision can be made about whether to approve it. The assessment approach will usually be decided at the same time as the controlled action decision. (Further information about the levels of assessment and basis for deciding the approach are available on the Department's web site.)

**The proposed action would have UNACCEPTABLE impacts and CANNOT proceed**

The Minister may decide, on the basis of the information in the referral, that a referred action would have clearly unacceptable impacts on a protected matter and cannot proceed.

## **Compliance audits**

If a decision is made to approve a project, the Department may audit it at any time to ensure that it is completed in accordance with the approval decision or the information provided in the referral. If the project changes, such that the likelihood of significant impacts could vary, you should write to the Department to advise of the changes. If your project is in the Great Barrier Reef Marine Park and a decision is made to approve it, the Authority may also audit it. (See "*Is your action in the Great Barrier Reef Marine Park*," p.2, for more details).

## **For more information**

- call the Department of the Environment Community Information Unit on 1800 803 772 or
- visit the web site <http://www.environment.gov.au/epbc>

All the information you need to make a referral, including documents referenced in this form, can be accessed from the above web site.

# Referral of proposed action

**Project title:** **Prosser River Stabilisation, Orford Tasmania**

## 1 Summary of proposed action

A plan showing the final proposed design is included in page 29 of the attached Prosser River Stabilisation Design Report (Burbury Consulting 2015).

### 1.1 Short description

The project is intended to stabilise the mouth of the Prosser River at Orford, approximately 70 km northeast of Hobart, in Tasmania. Proposed works are to include relocation of the channel alignment northwards through excavation and dredging, installation of geofabric mega-containers (geobags) filled with sand to form training walls, and transfer of sand to fill the existing channel and from the existing spit to Raspins Beach (Burbury Consulting 2015).

### 1.2 Latitude and longitude

location point	Latitude			Longitude		
	degrees	minutes	seconds	degrees	minutes	seconds
NE	42°33'	02.1"	S	147°52'	55.8"	E
S	42°33'	20.3"	S	147°52'	43.6"	E
W	42°33'	16.9"	S	147°52'	31.2"	E

**Do not use AMG coordinates.**

### 1.3 Locality and property description

The project site is located in the township of Orford on the East Coast of Tasmania, approximately 73 km from Hobart. The township is divided by the Prosser River, which feeds into Prosser Bay and out into a stretch of sea located between Orford and Maria Island, known as the Mercury Passage.

The study area covers 34.7 ha of Crown land including portions of the river bed and banks and beach to both the north and south of the mouth of the Prosser River.

The project area is within the:

- Tasmanian South East Bioregion
- Prosser River catchment

Glamorgan Spring Bay municipality

### 1.4 Size of the development footprint or work area (hectares)

The project area covers 34.7 ha.

### 1.5 Street address of the site

N/A

### 1.6 Lot description

N/A

### 1.7 Local Government Area and Council contact (if known)

Glamorgan Spring Bay Council. David Metcalf (General Manager) Phone 0419 719 257

### 1.8 Time frame

A recommendation of the Prosser River Stabilisation – Flora and Fauna Habitat Assessment is to ensure works are conducted outside the breeding season of the Fairy Tern and Hooded Plover. For this reason works will not commence until April 2017. The time frame for construction is 2-3 months. No works will be undertaken after September 2017 when the migratory bird breeding season recommences.

### 1.9 Alternatives to proposed action

Were any feasible alternatives to taking the proposed action (including not taking the action) considered but are not proposed?

X

No

Yes, you must also complete section 2.2

1.10	<b>Alternative time frames etc</b> Does the proposed action include alternative time frames, locations or activities?	X	No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	<b>State assessment</b> Is the action subject to a state or territory environmental impact assessment?	X	No
			Yes, you must also complete Section 2.5
1.12	<b>Component of larger action</b>	X	No
			Yes, you must also complete Section 2.7
1.13	<b>Related actions/proposals</b>	X	No
			Yes, provide details:
1.14	<b>Australian Government funding</b> Has the person proposing to take the action received any Australian Government grant funding to undertake this project?	X	No
			Yes, provide details:
1.15	<b>Great Barrier Reef Marine Park</b>	X	No
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

## 2 Detailed description of proposed action

### 2.1 Description of proposed action

The objective of the Prosser River Entrance Stabilisation project (Burbury Consulting 2015) is to retain stability of the river mouth and maintain a consistent river mouth entrance alignment that:

- Reduces uncontrolled erosion and sedimentation of the river mouth entrance;
- Reduces impact of flood on river erosion;
- Reduces reactive management controls for the river navigation;
- Improves water quality within river and backwater;
- Improved navigation safety for vessels accessing the river; and
- Maintains and improves upon the values of the river entrance to public (access, swimming/recreational, visual amenity) and natural environment (terrestrial flora and fauna, marine ecology).

The objective will be achieved by implementing the following strategy:

- Installation of geofabric "mega-containers" to form a hard training wall at the entrance of Prosser River to Millingtons and Raspins Beaches to stabilise the river mouth;
- Dredging/excavation of the entrance, inner channel, beach and sand bars to fill geobags and form the proposed channel;
- Alignment and placement of geobags to form a designed width and orientation to provide the most efficient entrance for self-scouring during tidal and environmental flows and to minimise maintenance dredging;
- Allowance for navigation infrastructure to improve watercraft safety during all weather conditions; and
- Provision of stability to the northern shoreline spit for bird nesting and foraging area by managing the construction period and construction methodologies.

Further details on the design and development of the project and a detailed assessment of the historical changes to the river entrance are provided in the Design Basis Report (Burbury Consulting 2015).

### 2.2 Alternatives to taking the proposed action

The design process has entailed a degree of evolution to the current design which is considered to be the most appropriate to achieve the desired outcomes including safe access and long-term river mouth stability resulting in reduced threat to nearby Raspins Beach, the Tasman Highway and adjacent infrastructure scour as a result of northern migration of the river mouth. . In light of this process, the current design and methodology are the only ones under consideration other than not taking the action.

The final concept has been reached following supplementary environmental assessment and local resident/community contribution. The concept options are provided in Section 4.1 of the attached Design Basis Report (Burbury 2015).

### 2.3 Alternative locations, time frames or activities that form part of the referred action

In order to minimise disturbance to nesting Fairy Terns (EPBC Act listed vulnerable) from the project, no construction works are to occur during the period 1 October to 31 March (Biosis 2015).

### 2.4 Context, planning framework and state/local government requirements

The Glamorgan Spring Bay Council has provided planning approval for the project in accordance with the *Land Use Planning and Approvals Act 1993*. This Council decision is conditional of this referral being submitted

under the EPBC Act 1999. The Council decision is pending appeal with Council and MAST set to mediate with the appellant once the outcome of this referral is known.

The objectives of *Land Use Planning and Approvals Act 1993* would be met if the important habitats identified within the study area are protected during and post construction, and that the construction of the proposal does not result in a significant loss of habitat or identified natural values.

The mouth of the Prosser River is within reserves covered by the Orford Area Reserves Native Flora and Fauna Management Plan 2014 – 2019 (GSBC 2014). Any activities in the reserves that will impact on species listed as threatened under the *Threatened Species Protection Act 1995* would require a permit application to be submitted to the Development and Conservation Assessment Branch (DCAB) of DPIPWE with regard to the populations affected.

*Nature Conservation Act 2002* (Schedule 3A) lists native vegetation communities in Tasmania considered to be threatened. DGL and DVC are listed threatened communities under the schedule. No impacts on these communities are likely to occur as a result of proposed works as they are located outside of the development area.

All relevant legislation, with the exception of the *Land Use Planning and Approvals Act 1993* has been assessed by the Department of Primary Industry, Parks, Water and Environment (DPIPWE) during the Parks and Wildlife Service (PWS) assessment of the Reserve Activity Assessment (RAA) "Prosser River Stabilisation". PWS subsequently has approved this RAA.

The *Weed Management Act 1999* is the principal legislation concerned with the management of declared weeds in Tasmania. Landowners and managers must take all reasonable measures to control the impact and spread of a declared weed. Two species of declared weeds were recorded in the study area.

## **2.5 Environmental impact assessments under Commonwealth, state or territory legislation**

Both terrestrial and marine environmental impact assessments were undertaken by consultants to accompany a Reserve Activity Assessment (RAA) which is a requirement under the *National Parks and Reserves Management Act 2002*.

This RAA was assessed by the Parks and Wildlife Service (PWS) who subsequently approved the document.

## **2.6 Public consultation (including with Indigenous stakeholders)**

The proposed development was displayed to the public at the Glamorgan Spring Bay Council Chambers for a period exceeding 4 months, inviting the public to formally submit feedback. Similarly, several sessions were conducted with adjacent landowners who reside along the nearby Tasman Highway.

The development application was also publicly advertised for comment as part of the Glamorgan Spring Bay Council decision process.

## **2.7 A staged development or component of a larger project**

The proposed action is not part of a larger action.



## 3 Description of environment & likely impacts

### 3.1 Matters of national environmental significance

#### 3.1 (a) World Heritage Properties

**Description**

The project does not have capacity to result in direct or indirect significant impacts on any World Heritage Area.

**Nature and extent of likely impact**

None

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#### 3.1 (b) National Heritage Places

**Description**

The project does not have capacity to result in direct or indirect significant impacts on any National Heritage Places.

**Nature and extent of likely impact**

None

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#### 3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

**Description**

The study area is not within the catchment of any Ramsar site. The project does not have capacity to result in direct or indirect significant impacts on any Ramsar site.

**Nature and extent of likely impact**

None

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### **3.1 (d) Listed threatened species and ecological communities**

#### **Description**

No EPBC Act-listed threatened ecological communities are present in, or within proximity of the study area.

A total of 18 flora species and 48 fauna species have been recorded or predicted to occur within 5 kilometres of the project area (combined information from Biosis 2015 and Marine Solutions Tasmania 2016). Due to unsuitability of habitats most of these species are not likely to occur at the project site. The following listed threatened fauna species are considered to have a medium or higher likelihood of occasionally visiting the project area.

- Spot-tailed Quoll
- Eastern Barred Bandicoot
- Tasmanian Devil
- Tasmanian Wedge-tailed Eagle
- Swift Parrot
- Eastern Curlew
- Curlew Sandpiper
- Forty-spotted Pardalote
- Australian Grayling.

The following 2 listed threatened taxa are known to breed within the study area and have some potential to be impacted by the proposal:

- Hooded Plover
- Fairy Tern.

#### **Nature and extent of likely impact**

Listed threatened species and ecological communities relevant to the project are assessed against EPBC Act significant impact guidelines criteria.

No listed threatened ecological communities are present in, or within proximity of the study area, and thus no significant impact on any listed ecological community will result from the proposed action.

Most of the 18 flora species and 48 fauna species that have been recorded, or are predicted to occur, within 5 kilometres of the project area are not likely to occur at the project site and the development is unlikely to constitute a significant impact on such species. Of the 11 listed fauna species that are considered to have a medium or higher likelihood of occurrence within the study area (listed above), all have some potential to occur within or adjacent to the study area, however the project area does not provide habitat suitable for anything other than rare or sporadic visitation by 8 of these taxa. The proposed development is considered unlikely to result in a significant impact on any of these species. Australian Grayling may occur in the Prosser River and migration of larvae into the adjacent marine environment may occur, however, since the most serious threat facing the Australian Grayling population is habitat alteration resulting in barriers to migration, this project is unlikely to negatively impact on this species.

Both the Hooded Plover and Fairy Tern are known to routinely use the site and are listed as vulnerable under the EPBC Act, therefore consideration has been made as to whether an 'important population' of either species as defined in DoE (2013) is present. An 'important population', is defined by DoE (2013) as:

*"...a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:*

- *key source populations either for breeding or dispersal*
- *populations that are necessary for maintaining genetic diversity, and/or*
- *populations that are near the limit of the species range."*

According to the definition, Hooded Plovers present within the study area are unlikely to represent an 'important population' and therefore a significant impact on that species as a result of the proposed development is considered unlikely.

The Fairy Tern population in Australia is estimated to consist of between 3300 and 5700 breeding pairs, with the great majority occurring in Western Australia where the species is relatively stable (Garnett et al. 2011). There are far fewer breeding pairs in eastern Australia, where rapid declines have been observed in recent years (Garnett et al. 2011). In 2011, there were an estimated 200-250 breeding pairs of Fairy Tern in Tasmania (Garnett et al. 2011), of which up to 25 pairs occurred within the study area (BirdLife International 2015). During visits made independently by members of BirdLife Tasmania in December 2015 and January 2016 an estimated minimum of 20 breeding pairs of Fairy Terns and in January 2016 a minimum of 16 chicks were recorded, so the total number of the species present in the colony in the past breeding season is likely to have exceeded 56 individuals (E. Woehler letter to MAST 19 March 2016).

The study area is recognised as an Important Bird and Biodiversity Area by BirdLife International due to the presence of this breeding population of Fairy Terns.

For these reasons, the breeding population of Fairy Terns present within the study area is likely to meet the definition of an important population, and has been considered as such in making an assessment of the project against the significant impact criteria provided in Table 1.

The key measure to reduce impacts on EPBC Act listed threatened birds, particularly Fairy Tern and Hooded Plover, is timing the construction works to occur outside their breeding seasons. For that reason construction works have been recommended to be undertaken outside the period from 1 October to 31 March) (Biosis 2015).

**Table 1: Assessment of project against Significant Impact Criteria for vulnerable Fairy Tern (DOE 2013)**

Significant Impact Criteria for vulnerable species (DoE 2013)	Likelihood of the project triggering criteria for Fairy Tern	Notes
Lead to a long-term decrease in the size of an important population of a species	Unlikely	The Project will alter the location of the river channel by installing geobag training walls. The total extent of beach available for nesting and foraging is not predicted to alter significantly from the current situation and needs to be considered in the context of the historically dynamic system of sand bars and spits.
Reduce the area of occupancy of an important population	Unlikely	It is considered unlikely that there would be a long-term decrease in available habitat and therefore in the size of the population of Fairy Terns using the site.
Fragment an existing important population into two or more populations	Unlikely	The Prosser River mouth is a dynamic system of sand bars and spits that alters subject to rainfall and river flooding events, storm surges and tidal currents. The portion of the population breeding in Tasmania may migrate as they are seen there less frequently during the winter months (DSEWPaC 2011 Fairy Tern Listing Advice). Breeding colonies of Fairy Terns tend to use areas rather than specific

		<p>sites, and nest sites are often abandoned after one year, even if they have been successful (Saunders and de Rebeira 1985 in DSEWPac 2011). The capacity of the species to vary colonial nesting locations from year to year suggests it is adaptable to changes in the configuration of sand spits in the river mouth.</p>
Adversely affect habitat critical to the survival of a species	Unlikely	<p>The study area is recognised as an important area for a breeding population of Fairy Terns, and the proposed development does not propose to significantly alter the available habitat. Thus the Prosser River mouth will continue to provide habitat for the species. Other factors such as disturbance by predators and humans are likely to require on-going management as detailed in the <i>Forest Hill Wildlife Consultants Evaluation of Impacts on Fairy Terns and Management Options</i>.</p> <p>Similarly, long-term control of vegetation to ensure suitable Fairy Tern habitat should be a required management option.</p>
Disrupt the breeding cycle of an important population	Unlikely	<p>Construction activities are proposed to be undertaken outside the breeding season for resident coastal birds, particularly Fairy Tern, to avoid disrupting the breeding cycle. Following completion of construction the project will not result in disruption to any component of the species annual cycle.</p>
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	<p>The study area is recognised as an important area for a breeding population of Fairy Terns, and the proposed development does not intend to significantly alter the available habitat. Whilst the Fairy Tern uses the channels, adjacent bay and nearby lagoon for feeding it appears that they are not solely reliant on this lagoon. The ephemeral nature of this Spit area over the years is likely to significantly change location, abundance and availability of fish prey which will ultimately be influenced by abiotic and biotic changes and not by the proposed stabilization of the river. The long history of the species at this location, despite significant changes in the position of the river mouth suggests there is abundant foraging resources in the general area and the proposed works are unlikely to significantly change this within such a dynamic system.</p>
Result in invasive species that are harmful to a vulnerable species becoming established in the	Unlikely	<p>Invasive species that are harmful to Fairy Tern (i.e. feral predators) are already present within the local area. No additional invasive species are likely to be</p>

vulnerable species' habitat		introduced nor the level of effect of existing invasive species increased as a result of the proposed development. Other mechanisms such as signage and fencing are currently in place on the spit to manage invasive species and impacts of domestic animals (i.e. dogs) and should be relocated to appropriate locations once the project is complete.
Introduce disease that may cause the species to decline, or	Unlikely	Proposed works are unlikely to introduce any new disease that may cause the species to decline.
Interfere substantially with the recovery of the species	Unlikely	The study area is located within a recognised Important Bird and Biodiversity Area. Providing there is no significant change in available habitat resulting from the Project, the recovery of the species will not be affected.

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### 3.1 (e) Listed migratory species

#### Description

A total of 33 migratory species have been recorded or are predicted to occur within 5 kilometres of the project area (Biosis 2015).

#### Nature and extent of likely impact

The majority of the 33 migratory species are pelagic marine species and/or species that breed on offshore islands (e.g. albatross species). While a small number of these species would be expected to use the study area on occasions, and some of them may do so regularly, it does not provide important habitat for an ecologically significant proportion of any of these species and no significant impact (as defined by EPBC Act significant impact guidelines criteria) on any listed migratory species is expected to result from the project.

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### 3.1 (f) Commonwealth marine area

(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

#### Description

The proposed action is not likely to affect any protected matters in any Commonwealth marine area.

#### Nature and extent of likely impact

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### 3.1 (g) Commonwealth land

(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

**Description**

The proposed action is not likely to affect any protected matters on Commonwealth land.

**Nature and extent of likely impact**

None

**3.1 (h) The Great Barrier Reef Marine Park****Description**

The proposed action is not within the Great Barrier Reef Marine Park and it is not likely to affect any matters protected within the Great Barrier Reef Marine Park.

**Nature and extent of likely impact**

None

**3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development****Description**

The proposed action does not involve a water resource, in relation to coal seam gas development and large coal mining development.

**Nature and extent of likely impact**

None

**3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park**

3.2 (a)	Is the proposed action a nuclear action?	X	No
			Yes (provide details below)
If yes, nature & extent of likely impact on the whole environment			
3.2 (b)	Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?	X	No
			Yes (provide details below)
If yes, nature & extent of likely impact on the whole environment			
3.2 (c)	Is the proposed action to be taken in a Commonwealth marine area?	X	No
			Yes (provide details below)
If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))			
3.2 (d)	Is the proposed action to be taken on Commonwealth land?	X	No
			Yes (provide details below)
If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(q))			

3.2 (e)	Is the proposed action to be taken in the Great Barrier Reef Marine Park?	X	No
			Yes (provide details below)

**If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))**

### 3.3 Other important features of the environment

#### 3.3 (a) Flora and fauna

##### Terrestrial flora

The project area contains 2.7 ha of remnant native vegetation communities of poor to moderate condition in the study area including:

- DGL - *Eucalyptus globulus* dry forest and woodland
- DVC - *Eucalyptus viminalis* – *E. globulus* coastal forest and woodland
- GHC - Coastal grass and herbfield
- SAL - *Acacia longifolia* coastal scrub.

A total of 67 vascular plant species was recorded during survey of the site, including 27 introduced species, two of which are declared weeds. A full species list is provided in Biosis (2015) Appendix 1.

A single database record for a threatened flora species, *Cynoglossum australe* Coast Houndstongue (listed as rare under the TSP Act), was documented in January 2015 from the study area. The species is known to occur in grasslands and open forests and on the landward margins of coastal sand dunes in dry places throughout Tasmania. In the study area it was recorded within the DGL *Eucalyptus globulus* dry forest and woodland community on the northern bank of the Prosser River. The species was not recorded during 2015 assessment for the project, but is considered likely to persist in low numbers within similar habitats in the study area.

It is considered that there is a low likelihood of other threatened flora species being present within the largely modified habitats of the study area.

##### Terrestrial fauna

A total of 33 fauna species was recorded during the survey, including 30 indigenous and three introduced species.

##### Estuarine/marine flora & fauna

The following broad aquatic vegetation / habitat groups are present (Marine Solutions Tasmania 2016).

- - *Heterozostera* seagrass beds
- - Seaweed
- - Sand
- - Algae
- - Red algae
- - Rocks
- - Sediment with dead seagrass
- - Drift seaweed
- - Epiphytes
- - Ephemeral algae
- - Shell grit
- - Depositional area of soft sand/silt

*Heterozostera* seagrass beds are present both in the river and offshore of the river mouth at the time of the study. The density of the seagrass growth was spatially variable, ranging from thick growth to discrete clumps interspersed with sand patches.

The Natural Values Atlas and the Protected Matters Search Tool (accessed on 25.05.15) identified a total of 20 threatened fauna species, including three whales and 17 birds that are almost entirely found in pelagic marine environments and/or breed on offshore islands. The likelihood of these species occurring within the study area and potential for impacts is considered to be negligible.

### **3.3 (b) Hydrology, including water flows**

The study area is located at the mouth of the Prosser River. The river has a total catchment of 100,000 hectares and a lower sub catchment of 15,000 hectares encompassing the major Orford water storage dam at Paradise Gorge, located 3.5km upstream of the river mouth. The mouth of the river and below the dam is predominantly tidal with peak environmental flows subject to the dam storage (and water level).

The Department of Primary Industry, Parks, Water and Environment indicates that the average environmental/stream flows between 0.1-1 ML per day with 2-20 ML/day for average rainfall with peak 1 in 100 year flood event up to 2,000 ML/day.

The backwater body has formed naturally due to the location and orientation of the river mouth entrance. The backwater is predominantly tidal with single entrance subject to the tidal levels. Stormwater outfalls enter the backwater through two outfalls picking up road and property drainage.

### **3.3 (c) Soil and Vegetation characteristics**

#### **Terrestrial characteristics**

The study area encompasses the mouth of the Prosser River and adjacent areas of coastal habitats and sandy beaches. Above the high tide water mark the beach areas consist mostly of open sand with patches of Marram grass on the northern banks of the river mouth. The project area is well connected to other coastal habitats to the north and south. The section to the north of the Prosser River is comprised of parkland with narrow strips of native vegetation modified by invasion by introduced species. There are also stretches of sandy beaches backed by marram grassland that extend further north along Raspins Beach.

The sandy environment forming the mouth of Prosser River is subject to dynamics of natural erosion, sediment deposition, rainfall events and storms. Burbury Consulting (2015) provides photographs indicating the frequency and extent of resulting changes to the configuration of the channel of the river mouth and adjacent beaches.

#### **Aquatic characteristics**

The river mouth consists of reworked marine sands, shell grit and drift weed. The depositional area of the river consists of a rock ledge gradually sloping from the northern bank to the middle of the channel. Upstream of this are seagrass and seaweed beds. In the mouth of the Prosser River, particle size varied, with some areas of fine sediments (likely depositional), through to some areas of coarse reworked sediments (likely erosional). The entire area is dynamic and the boundaries and gradients across the particle sizes are always altering; this is the case currently, and will likely remain the case after any works are completed.

A former channel of the river, north of the current mouth, is currently a semi-isolated 'backwater' with little or no flow. Its condition is variable according to natural dynamics of the river and it currently provides a portion of available foraging resources to some birds, including Fairy Terns.

Seagrass is currently present both in the Prosser River, and offshore in Prosser Bay. It is currently not present in the dynamic areas of the mouth where the sediments are primarily coarse, and highly mobile. Offshore transects indicate sandy substrate with seaweed and algal patches increasing with depth.

### **3.3 (d) Outstanding natural features**

The natural features of the site are outlined in other sections here.



### **3.3 (e) Remnant native vegetation**

2.7 ha of remnant native vegetation communities of poor to moderate condition in the study area include:

- DGL - *Eucalyptus globulus* dry forest and woodland
- DVC - *Eucalyptus viminalis* – *E. globulus* coastal forest and woodland
- GHC - Coastal grass and herbfield
- SAL - *Acacia longifolia* coastal scrub.

DGL and DVC are listed threatened communities under the Tasmanian *Nature Conservation Act 2002*.

### **3.3 (f) Gradient (or depth range if action is to be taken in a marine area)**

### **3.3 (g) Current state of the environment**

In its current state the mouth of Prosser River is subject to natural dynamics of erosion and deposition.

Non-native vegetation communities and other mapping units include:

- FMG - Marram grassland. Occurs on the foredunes along Raspins Beach and the adjacent spit at the mouth of the Prosser River as well as to the south of the Radiata Pines on Millingtons Beach. This non-native community is generally species poor and dominated by marram grass. There is a scattered mix of native herbs and grasses and introduced species.
- FUR - Urban areas. Exist along the coastal strip north of the Prosser River and south of Raspins Beach between the coastal vegetation and the residential areas. Grassy parkland areas and walking tracks have been mapped as FUR. These areas are largely devoid of native vegetation.
- FWU - Weed infestation (Radiata Pine). Occurs on peninsular of land to the south of the Prosser River entrance. This area is dominated by Radiata Pines which were probably planted for stabilisation and have now naturalised. The environmental weed Bluebell Creeper is abundant throughout this area.
- OSM - Sand, mud (sandy beaches). Includes areas along Raspins Beach and the associated sandy spit, and beaches to the south, and sandy banks of the Prosser River. Generally these areas are devoid of vegetation, but there are scattered occurrences of primarily introduced species such as Marram Grass, American Searocket or Creeping Orache.

### **3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values**

N/A

### **3.3 (i) Indigenous heritage values**

The project has been assessed by Aboriginal Heritage Tasmania who have provided advice stating that “there is no requirement for Aboriginal Heritage Investigation and that AHT has no objection to the project proceeding”. I copy of this advice accompanies this referral

### **3.3 (j) Other important or unique values of the environment**

The mouth of the Prosser River is within reserves covered by the Orford Area Reserves Native Flora and Fauna Management Plan 2014 – 2019 (GSBC 2014).

### **3.3 (k) Tenure of the action area (eg freehold, leasehold)**

The entire 34.7 ha of the project area is public land zoned as Open Space.

### **3.3 (l) Existing land/marine uses of area**

Existing uses are primarily passive recreational use of terrestrial areas and recreational boating and fishing in aquatic components.

### **3.3 (m) Any proposed land/marine uses of area**

The current project proposal is aimed at improved and safer boat usage.

## 4 Environmental outcomes

The key matters of national environmental significance of relevance to the project are the populations of shorebirds, particularly the Fairy Tern, known to breed on the sandy beaches in the study area in the period from October to March, inclusive. The design of the project has been developed giving consideration to the presence of habitat for nesting shorebirds (Burbury Consulting 2015). Given the historically dynamic nature of the river mouth and highly variable locations of sand bars and spits at the mouth, the proposed design is not considered likely to result in a significant long-term loss in available nesting or foraging habitat for these species.

The exposed nature of nesting sites of the Fairy Tern means they are vulnerable to weather events such as storms, floods and high tides and to threats including predation by introduced mammals and birds, and disturbance by humans and dogs (DSEWPac 2011). By relocating the river channel to the north and filling in the channel at its current location, the existing spit will be joined to Millingtons Beach. This is expected to continue to provide nesting and foraging habitat for these birds, but it is noted that it will also be more accessible by beach users and dog walkers. At present there is signage and fencing between Raspins Beach and the spit intended to discourage walkers and dogs during the breeding season.

## 5 Measures to avoid or reduce impacts

The following measures are intended to minimise the ecological impact of the proposed development. Relevant points will be incorporated into a Construction Environmental Management Plan to ensure that the risk of adverse environmental impacts is minimised.

A key measure to reduce impacts on biodiversity values is timing the construction works to occur outside the October to March (inclusive) annual breeding season of shorebirds, particularly the EPBC Act listed Fairy Tern and Hooded Plover.

### Design and pre-construction

- A site-specific Construction Environmental Management Plan will be prepared and will address all relevant environmental impacts of the Project and outline management requirements to mitigate these impacts.
- No ground disturbance will be permitted outside of the construction footprint. Allowance will be made within the construction footprint for all access tracks, storage areas and services.
- Temporary fencing and signage will be used to protect all areas of retained native vegetation and fauna habitat during construction. Fencing and signage will be installed before construction work commences and the fenced areas will be treated as no-go zones.

### Construction

- Construction works will be undertaken only outside the breeding season for resident shorebirds, particularly Fairy Tern and Hooded Plover (1 October to 31 March).
- Following excavation of surface sand from the spit below the high-tide line to be deposited on Raspins Beach, the beach profile will be restored to a natural gradient to avoid a steep drop off from the beach.
- All vehicles will be clean and free of weeds and pathogens before entering the construction area.
- The construction footprint will be kept to a minimum.
- All environmental constraints will be clearly communicated to construction personnel and incorporated into the workforce induction program.
- All areas of retained native vegetation and fauna habitat will be protected during construction by means of temporary fencing and signage. Fencing and signage will be installed before construction work commences and the fenced areas will be treated as no-go zones. All protective fencing will be maintained in good repair throughout construction.

**Post-construction**

- Appropriate management to protect shorebirds from the public and predators (canine and feline) including fencing and signage will be implemented and maintained in collaboration with Glamorgan Spring Bay Council and Parks and Wildlife Service
- Implementation of a long term vegetation management plan in conjunction with Glamorgan Spring Bay Council and Parks and Wildlife Service to control vegetation ensuring suitable Fairy Tern nesting habitat is retained.

## 6 Conclusion on the likelihood of significant impacts

### 6.1 Do you THINK your proposed action is a controlled action?

<input checked="" type="checkbox"/>	No, complete section 5.2
<input type="checkbox"/>	Yes, complete section 5.3

### 6.2 Proposed action IS NOT a controlled action.

The only matters of national environmental significance that may utilise the site sufficiently for the project to present a possibility of any impact are Fairy Tern and Australian Grayling. The effects of the project on those two species are not considered to trigger any criteria for a significant impact, as defined in EPBC Act Significant Impact Guidelines.

### 6.3 Proposed action IS a controlled action

#### Matters likely to be impacted

<input type="checkbox"/>	World Heritage values (sections 12 and 15A)
<input type="checkbox"/>	National Heritage places (sections 15B and 15C)
<input type="checkbox"/>	Wetlands of international importance (sections 16 and 17B)
<input type="checkbox"/>	Listed threatened species and communities (sections 18 and 18A)
<input type="checkbox"/>	Listed migratory species (sections 20 and 20A)
<input type="checkbox"/>	Protection of the environment from nuclear actions (sections 21 and 22A)
<input type="checkbox"/>	Commonwealth marine environment (sections 23 and 24A)
<input type="checkbox"/>	Great Barrier Reef Marine Park (sections 24B and 24C)
<input type="checkbox"/>	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
<input type="checkbox"/>	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
<input type="checkbox"/>	Protection of the environment from Commonwealth actions (section 28)
<input type="checkbox"/>	Commonwealth Heritage places overseas (sections 27B and 27C)

## 7 Environmental record of the responsible party

	Yes	No
<b>7.1 Does the party taking the action have a satisfactory record of responsible environmental management?</b>  <b>Provide details</b> Marine and Safety Tasmania is a statutory authority whose tasks include the provision of marine facilities and management of waterways through training walls and/or dredging. The organisation has existed since 1997 delivering in excess of 450 projects either upgrading existing or building new infrastructure. Most of these projects have required Council DA approval and many have also required Parks and Wildlife or EPA approval.	X	
<b>7.2 Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?</b>  <b>If yes, provide details</b>		X
<b>7.3 If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?</b>  <b>If yes, provide details of environmental policy and planning framework</b>	N/A	
<b>7.4 Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?</b>  <b>Provide name of proposal and EPBC reference number (if known)</b>		X

## 8 Information sources and attachments

(For the information provided above)

### 8.1 References

- Biosis 2015. Prosser River Stabilisation: Flora and Fauna Habitat Assessment. Report to Marine and Safety Tasmania. Authors: K. Kay & C. McCutcheon.
- Forest Hill Wildlife Consultants 2016. Prosser River Stabilisation Project – Evaluation of Impacts on Fairy Terns and Management Options. Report to Marine and Safety Tasmania. Author: Mark Holdsworth.
- Burbury Consulting. 2015. Prosser River Entrance Stabilisation – Design Basis Report. Report to Marine and Safety Tasmania and Glamorgan Spring Bay Council, 25 September 2015, Hobart.
- **GSBC. 2014. Orford Area Reserves Native Flora and Fauna Management Plan 2014 – 2019. Glamorgan Spring Bay Council.**
- E. Woehler (BirdLife Tasmania) letter to Marine and Safety Tasmania dated 19 March 2016.
- Marine Solutions Tasmania 2016. Marine Ecological Impact Assessment for the Prosser River Entrance Stabilisation, East Coast Tasmania. Report to Marine and Safety Tasmania. Author: C. Giosio.
- Aboriginal Heritage Tasmania. Advice to Marine and Safety Tasmania on Aboriginal Heritage Assessment. Author: E.Smith.

### 8.2 Reliability and date of information

The information in this referral, related to matters of national environmental significance is based on data collected first-hand from the project site during 2015 and 2016 and from publicly available databases maintained by State and Commonwealth authorities. The information was collected and assessed by appropriately tertiary qualified ecologists.

The precise responses of ecosystems and receptors such as particular taxa, can not be predicted with complete certainty. Expected responses as outlined in the referral are based on sound knowledge of ecosystems functions and informed professional judgement.

### 8.3 Attachments

		✓ attached	Title of attachment(s)
<b>You must attach</b>	figures, maps or aerial photographs showing the project locality (section 1)	✓	<i>Prosser River General Arrangement Nov 2015.</i>
	GIS file delineating the boundary of the referral area (section 1)		<i>Prosser River EPBC Referral GIS</i>
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	
<b>If relevant, attach</b>	copies of any state or local government approvals and consent conditions (section 2.5)	✓	Glamorgan Spring Bay Council 2016. <i>DA Approval</i>
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if	✓	Parks and Wildlife Service. <i>Reserve Activity Assessment – Prosser</i>

available (section 2.6)		<i>River Stabilisation</i>  Aboriginal Heritage Tasmania. <i>Advice to Marine and Safety Tasmania on Aboriginal Heritage Assessment</i>
copies of any flora and fauna investigations and surveys (section 3)	✓	Biosis 2015. <i>Prosser River Stabilisation: Flora and Fauna Habitat Assessment</i>  Forest Hill Wildlife Consultants 2016. <i>Prosser River Stabilisation – Evaluation of impacts on Fairy Terns and Management Options</i>  Marine Solutions 2016. <i>Marine Ecological Impact Assessment for the Prosser River Entrance Stabilisation, East Coast Tasmania</i>
technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Burbury Consulting 2015. <i>Prosser River Stabilisation – Design Basis Report</i>
report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)	N/A	



## 9 Contacts, signatures and declarations

**Project title:** Prosser River Stabilisation, Orford, Tasmania

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### 9.1 Person proposing to take action

1. Name and Title:

Justin Foster, Manager MAST Assets

2. Organisation

Marine and Safety Tasmania

3. EPBC Referral Number

4: ACN / ABN: ABN 65 826 980 806

5. Postal address GPO Box 607, Hobart TAS 7001

6. Telephone: (03) 6235 8818

7. Email: admin@mast.tas.gov.au

8. Name of proposed  
proponent (if not the  
same person at item 1  
above

9. ACN/ABN of proposed  
proponent (if not the  
same person named at  
item 1 above):

I qualify for exemption  
from fees under section  
520(4C)(e)(v) of the  
EPBC Act because I am:

- ☐ an individual; OR
- ☐ a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the *Income Tax Assessment Act 1997*); OR
- ☐ not applicable.

If you are small business  
entity you must provide  
the Date/Income Year  
that you became a small  
business entity:

I would like to apply for a  
waiver of full or partial  
fees under Schedule 1,  
5.21A of the [EPBC  
Regulations](#). Under sub  
regulation 5.21A(5), you  
must include information  
about the applicant (if  
not you) the grounds on  
which the waiver is  
sought and the reasons  
why it should be made:

- ☐ not applicable.

Declaration

I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.

I understand that giving false or misleading information is a serious offence.  
I agree to be the proponent for this action.  
I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature



Date 17<sup>th</sup> May 2016

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**9.2 Person preparing the referral information (if different from 8.1)**

Name

Title

Organisation

Organisation name should match entity identified in ABN/ACN search

ACN / ABN (if applicable)

Postal address

Telephone

Email

Declaration

I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.  
I understand that giving false or misleading information is a serious offence.

Signature

Date

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# REFERRAL CHECKLIST

## HAVE YOU:

- ☐ Completed all required sections of the referral form?
- ☐ Included accurate coordinates (to allow the location of the proposed action to be mapped)?
- ☐ Provided a map showing the location and approximate boundaries of the project area?
- ☐ Provided a map/plan showing the location of the action in relation to any matters of NES?
- ☐ Provided a digital file (preferably ArcGIS shapefile, refer to guidelines at [Attachment A](#)) delineating the boundaries of the referral area?
- ☐ Provided complete contact details and signed the form?
- ☐ Provided copies of any documents referenced in the referral form?
- ☐ Ensured that all attachments are less than three megabytes (3mb)?
- ☐ Sent the referral to the Department (electronic and hard copy preferred)?

## **Geographic Information System (GIS) data supply guidelines**

If the area is less than 5 hectares, provide the location as a point layer. If the area greater than 5 hectares, please provide as a polygon layer. If the proposed action is linear (eg. a road or pipeline) please provide a polyline layer.

GIS data needs to be provided to the Department in the following manner:

- Point, Line or Polygon data types: ESRI file geodatabase feature class (preferred) or as an ESRI shapefile (.shp) zipped and attached with appropriate title
- Raster data types: Raw satellite imagery should be supplied in the vendor specific format.
- Projection as GDA94 coordinate system.

Processed products should be provided as follows:

- For data, uncompressed or lossless compressed formats is required - GeoTIFF or Imagine IMG is the first preference, then JPEG2000 lossless and other simple binary+header formats (ERS, ENVI or BIL).
- For natural/false/pseudo colour RGB imagery:
  - If the imagery is already mosaiced and is ready for display then lossy compression is suitable (JPEG2000 lossy/ECW/MrSID). Prefer 10% compression, up to 20% is acceptable.
  - If the imagery requires any sort of processing prior to display (i.e. mosaicing/colour balancing/etc) then an uncompressed or lossless compressed format is required.

Metadata or 'information about data' will be produced for all spatial data and will be compliant with ANZLIC Metadata Profile. ([http://www.anzlic.org.au/policies\\_guidelines#guidelines](http://www.anzlic.org.au/policies_guidelines#guidelines)).

The Department's preferred method is using ANZMet Lite, however the Department's Service Provider may use any compliant system to generate metadata.

All data will be provide under a Creative Commons license (<http://creativecommons.org/licenses/by/3.0/au/>)