





APPENDIX C Fauna Handling Procedures

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	SPC. 10-ZA-E-85965		
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FAUNA HANDLING PROCEDURE



Revision	Reason For Issue	Prepared	Checked	Approved	Date
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COMPANY REVIEW CODE		
Code	Description	Tick
1	No comment. Proceed to AFC.	
2	Revise as noted and re-submit.	
3	Revise as directed and re-submit. Works may NOT proceed.	
4	Information Only. Re-submission not required.	
5	Approved for Construction (AFC)	
Signed:		Dated:
Contractor remains responsible for the due and proper performance in accordance with the Contract. Comments do not limit or relieve Contractor of any obligation or liability under the Contract or give rise to any claim.		



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1 INTRODUCTION



1.1 Project Description

GLNG Operations Pty Ltd (Company) has planned the development of a Liquefied Natural Gas (LNG) processing facility at Curtis Island in the Port of Gladstone. A gas transmission pipeline (GTP) (hereafter referred to as the GLNG GTP Pipeline), of approximately 420km in length will transport coal seam gas (CSG) to the LNG Facility from existing and future fields in the Roma, Fairview and Arcadia Valley area. The Scope of Work (SoW) for the GLNG Pipeline includes all buried and surface facility requirements for the mainline pipeline, and a segmental lining tunnel from the mainland to Curtis Island to allow the installation of the GLNG Gas Transmission pipeline under the sea bed. Approximately 44 km of the onshore pipeline is located within a Callide Infrastructure Corridor State Development Area (CICSDA). This area is subject to coordination and access limitations imposed by the shared use of this corridor with existing and new pipelines being constructed by other LNG proponents.

The Company is planning a large scale development to extract CSG from existing and future fields in the Roma, Fairview and Arcadia Valley area (Upstream) and to supply that gas for commercial sale and/ or conversion to LNG in the Gladstone area (Downstream).

Currently the project is scheduled to be broken down into the following segments;

1. Carnarvon Range KP 0 – 37;
2. Arcadia Valley KP 37 - 130;
3. KP 130 - 234;
4. Calliope Range KP 234 – 370.4;
5. Weed Area KP 370.4 – 409;
6. Mudflat Area & Narrows; and
7. Curtis Island.

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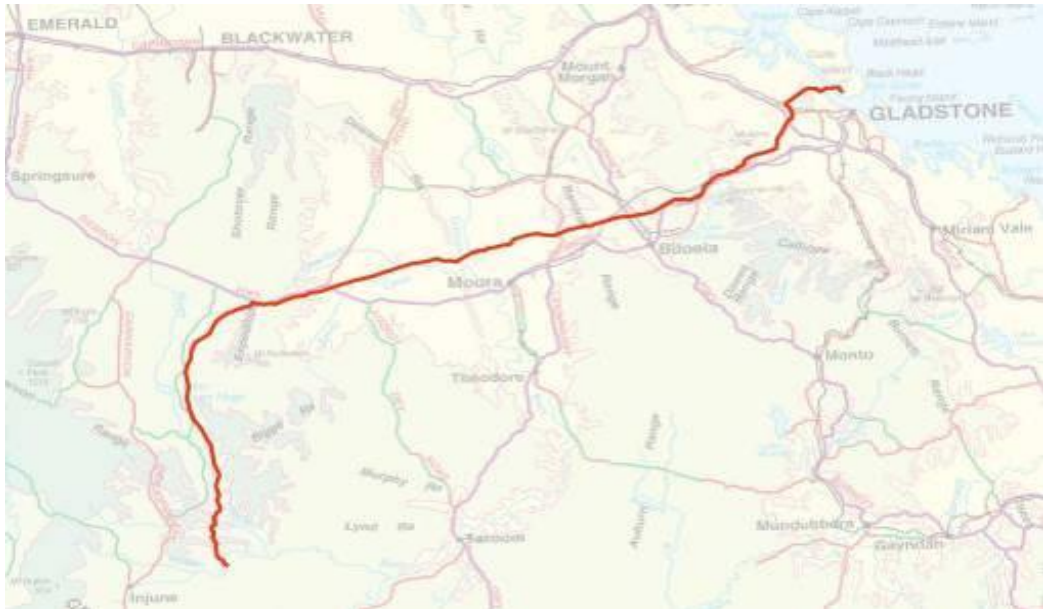




Fig. 1 – Project area

1.2 Scope

This Fauna Handling Procedure (FHP) provides details how Saipem will manage fauna interactions during the life of the GLNG GTP Project. For specific management of all threatened species (Endangered, Vulnerable, Near Threatened and Special Least Concern) refer to the Significant Species Management Plan.

Activities associated with these works include;

- Fauna habitat survey to identify habitat trees, areas of significant habitat and animal breeding places (e.g. nests);
- Fauna load reduction, hollow removal and relocation;
- Fauna habitat embellishment installation (e.g. nest boxes, glider poles, etc.);
- Stage 1 clearing works, including the commercial timber harvest and relocation of Type A restricted flora species;
- Stage 2 clearing works consisting of vegetation grubbing works;
- Trenching operations;
- Tunneling operations; and
- General handling and management of fauna.

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This Procedure outlines how fauna management will be undertaken in accordance with the requirements of the Environmental Authority issued under the *Environmental Protection Act 1994*; the Coordinator-General (CG) Conditions issued under the *State Development and Public Works Organisation Act 1971*; and the Conditions of Approval listed in the EPBC Referral 2008/4096 under the NC Act and the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act).



This document has been prepared for the purpose of an attachment to the Construction Environmental Management Plan (CEMP) (Doc. No. 3380-SAIP-4-1.3-1814-Revision B). As such, this Procedure is to be read and interpreted in conjunction with the CEMP, with particular reference to Section 15. Although developed independent of the Species Management Plan (SMP) and Significant Species Management Plan (SSMP), this Procedure will need to be reviewed in conjunction with these documents. It must be noted that this Fauna Handling Procedure as currently constructed, is a working document and will continue to be reviewed and updated as required.

1.3 Purpose

This FHP has been developed to detail the management and handling of fauna during all pre-clearing, clearing and construction activities associated with the GLNG GTP Project.

Key aims:

- To avoid, minimise, reduce or mitigate the risk of harm or injury to fauna during clearing of woodland vegetation and in any other areas of fauna habitat within the Right of Way (RoW) and ancillary areas of the Project; as well as the safe handling and removal of any stock or wildlife that may be found or trapped in open trenches or other excavations (e.g.HDD pits) within the Project footprint;
- Avoid, minimise, reduce or mitigate stress to fauna that might be injured or captured as a result of works during execution of the Project;
- To comply with conditions imposed on the Project by the administering authority;
- Provide a uniform system for data collection and incident reporting to comply with project conditions;
- Provide guidance to those certified to handle fauna on suitable and accepted methods of fauna handling and, where necessary, euthanasia;
- Ensure that all State and Commonwealth policies, permits and conditions are met.

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1.4 Key Legislation

1.4.1 Nature Conservation Act 1992: Protected Animals

The NC Act provides for the conservation of nature through an integrated and comprehensive conservation strategy for Queensland. Part 5 – Wildlife and habitat conservation, Division 1 – Basic Concepts, Section 71 lists the classes of wildlife to which the Act applies:

- a) protected wildlife, that is:
 - i) extinct in the wild wildlife;
 - ii) endangered wildlife;
 - iii) vulnerable wildlife;
 - iv) near threatened wildlife; and
 - v) least concern wildlife.
- b) international wildlife; and
- c) prohibited wildlife.



Division 2 – Classes of Wildlife. Sections 77 to 80 further define the classes addressed in this document as follows:

S77 – Endangered wildlife: A regulation may prescribe native wildlife as Endangered wildlife if:

- (a) there have not been thorough searches conducted for the wildlife and the wildlife has not been seen in the wild over a period that is appropriate for the life cycle or form of the wildlife; or
- (b) the habitat or distribution of the wildlife has been reduced to an extent that the wildlife may be in danger of extinction; or
- (c) the population size of the wildlife has declined, or is likely to decline, to an extent that the wildlife may be in danger of extinction; or
- (d) the survival of the wildlife in the wild is unlikely if a threatening process continues.

S78 – Vulnerable wildlife: A regulation may prescribe native wildlife as Vulnerable wildlife if:

- (a) the population size or distribution of the wildlife has declined, or is likely to decline, to an extent that the wildlife may become endangered because of a threatening process; or

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- (b) the population size of the wildlife has been seriously depleted and the protection of the wildlife is not secured; or
- (c) the population of the wildlife is
 - (i) low or localised; and
 - (ii) dependent on habitat that has been, or is likely to be, adversely affected, in terms of quantity or quality, by a threatening process.



S79 – Near Threatened wildlife:

- (1) A regulation may prescribe native wildlife as Near Threatened wildlife if:
 - (a) the population size or distribution of the wildlife is small and may become smaller; or
 - (b) the population size of the wildlife has declined, or is likely to decline, at a rate higher than the usual rate for population changes for the wildlife; or
 - (c) the survival of the wildlife in the wild is affected to an extent that the wildlife is in danger of becoming vulnerable.
- (2) Native wildlife may be prescribed as near threatened wildlife even if the wildlife is the subject of a threatening process.

S80 – Least Concern wildlife:

- (1) A regulation may prescribe native wildlife as Least Concern wildlife if the wildlife is common or abundant and is likely to survive in the wild.
- (2) Native wildlife may be prescribed as least concern wildlife even if
 - (a) the wildlife is the subject of a threatening process; or
 - (b) the population size or distribution of the wildlife has declined; or
 - (c) there is insufficient information about the wildlife to conclude whether the wildlife is common or abundant or likely to survive in the wild.

Division 4 of the NC Act establishes restrictions on activities relating to protected wildlife. Section 88 stipulates that a person must not unlawfully take, keep or use a protected animal other than under some form of authorisation, such as a license or permit or under a conservation plan. Section 88 also states that, subject to Section 93, a person, other than an authorised person, must not keep or use a lawfully taken protected animal unless the keeping or use is authorised under the NC Act (such as through a Rehabilitation Permit).

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1.4.2 NC Act Species Management Program

The Department of Environment and Resource Management (DERM) requires under the NCA to obtain a clearing permit when it is required to clear protected plants unless an exemption applies. In general, exemptions will only apply to the clearing of least concern protected plant species. Clearing of Endangered, Vulnerable, Rare or Near Threatened protected plants will require a clearing permit. Where activities involve tampering with animal breeding places (being these located in caves, trees or any other vegetation), the tampering may only be authorised by application to DERM for an approved species management program.

Holders of relevant resource authorities are able to apply to DERM to operate under the protected plant class exemption and in accordance with an approved Species Management Program.

The SMP addresses these requirements and provide specific management strategies throughout the life of the Project.

1.4.3 Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006 – 2016



Multiple regulations are in place to provide adequate management and protection to specific fauna such as Koalas. The South East Queensland Koala Conservation State Planning Regulatory Provisions and the State Planning Policy 2/10: Koala Conservation in South East Queensland regulate all policies and development activities in the region. Along with the Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006 – 2016 they provide guidelines for industry practices to minimise risk of impact on the species.

1.4.4 Nature Conservation (Wildlife Management) Regulation 2006 (NCR)

The NCR provides for the management of wildlife, including taking, keeping and using wildlife. This regulation is subordinate legislation to the NC Act, and provides further details pertaining to the listings of all protected wildlife, excluding those of least concern status.

Part 2 – Classes of Native Wildlife and Declared Management Intent for the Wildlife, Division 5 – Least Concern wildlife, section 34(3) also defines the Special Least Concern Wildlife as the following:

- (a) the koala (*Phascolarctos cinereus*);
- (b) the echidna (*Tachyglossus aculeatus*);
- (c) the platypus (*Ornithorhynchus anatinus*);
- (d) a least-concern bird to which any of the following apply
 - (i) the agreement called 'Agreement Between the Government of Australia and the Government of Japan for the Protection of Migratory Birds and Birds in

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Danger of Extinction and their Environment’ and signed at Tokyo on 6 February 1974;

- (ii) the agreement called ‘Agreement Between the Government of Australia and the Government of the People’s Republic of China for the Protection of Migratory Birds and their Environment’ and signed at Canberra on 20 October 1986;
- (iii) the convention called ‘Convention on the Conservation of Migratory Species of Wild Animals’ and signed at Bonn on 23 June 1979.

1.4.5 The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The Commonwealth EPBC Act focuses on the protection of Matters of National Environmental Significance (MNES), with the States and Territories having responsibility for matters of State and local significance. Under the EPBC Act there are eight MNES, including:



- World heritage properties;
- National heritage places;
- Wetlands of international importance (listed under the Ramsar Convention);
- Listed threatened species and ecological communities;
- Migratory species protected under international agreements;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park; and
- Nuclear actions (including uranium mines).

1.5 Relevant Conditions

The purpose of this section is to detail the environmental conditions issued under State and Commonwealth legislation to The Company that are relevant to this Fauna Handling Procedure. This includes the Environmental Authority (EA) issued under the Environmental Protection Act 1994 (EP Act) as well as the Nature Conservation Act Class Exemption, Coordinator General’s Conditions and Species Management Program.

1.5.1 EA Conditions

The following outlines the EA conditions (PEN102664411) imposed on the project by DERM:

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- (F1)** The holder of this environmental authority must develop and implement a species management plan for all fauna, including all endangered, vulnerable or near threatened (EVNT) listed species likely to be impacted by the pipeline activities. The plan must:
- (a) address the impacts to the species; and
 - (b) provide for the survival of the species in the wild.
- (F2)** The holder of this environmental authority must develop and implement fauna management procedures in such a manner that petroleum activities are undertaken to prevent and/or minimise environmental harm. The fauna management procedures must include but not be limited to:
- (a) training and awareness of staff and contractors;
 - (b) conduct of a preconstruction ecological survey to identify the presence of any endangered, vulnerable or rare fauna species and identify and mark hollow-bearing trees;
 - (c) minimising the clearing of mature and hollow-bearing trees;
 - (d) minimising the length of time the trench is open through the staging of activities;
 - (e) temporary exclusion fencing where practicable to restrict fauna access to the trench;
 - (f) the use of "night caps" over open pipe string ends to prevent the ingress of wildlife;
 - (g) pipes being strung with gaps to allow for fauna movement across the line of the pipe;
 - (h) a suitably qualified person for fauna handling must be present during clear and grade activities to relocate fauna or recover any injured fauna and must check the entire trench for captured fauna at least daily, preferably in the morning;
 - (i) ensure any vertebrates injured by clearing activities under this permit are referred to an appropriate wildlife carer group or veterinarian (to be predetermined prior to clearing) and DERM must be notified within 24 hours of any injuries or deaths;
 - (j) installation of ramps and trench plugs with a slope less than 50% at least every 1,000 metres to assist fauna to leave the trench; and
 - (k) installation of shelter material to provide wet weather protection and reduction of heat stress, such as by placing sawdust filled Hessian bags in pairs every 250 metres.

1.5.2 EPBC Referral

Conditions described in EPBC referral 2008/4096 include:

Condition 3. The Environmental Management Plan must include:

- (e) Measures to minimise impacts on fauna during pipeline construction, including:

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- (i) Measures to protect Matters of National Environmental Significance (MNES) in the areas of the RoW where trenching is being undertaken, including measures to exclude listed terrestrial fauna from gaining access to those areas of the RoW where trenching is currently being undertaken
- (ii) Mechanisms to allow fauna to escape from the pipeline trench;
- (iii) Daily monitoring surveys for trapped fauna;
- (iv) Mechanisms for a suitably qualified person to relocate fauna; and
- (v) Record keeping for all survey, removal and relocation activities.

Condition 5. Before the clearance of native vegetation in the pipeline RoW, the proponent must:



- (a) undertake pre-clearance surveys for the presence of listed threatened species and migratory species, their habitat and listed ecological communities.
- (b) alternatively, where recent surveys have already been undertaken and those surveys meet the Department's requirements for surveys for the relevant MNES, the proponent may elect to develop management plans based on those surveys in accordance with the requirements of Condition 8.

Condition 6. Pre-clearance surveys must:

- (a) for each listed species, be undertaken in accordance with the Department's survey guidelines in effect at the time of the survey. This information can be obtained from <http://www.environment.gov.au/epbc/guidelines-policies.html#threatened>;
- (b) be undertaken by a suitably qualified ecologist approved by the Department in writing;
- (c) document the survey methodology, results and significant findings in relation to MNES;
- (d) apply best practice site assessment and ecological survey methods appropriate for each listed threatened species, migratory species, their habitat and listed ecological communities.

Condition 8. [...] For listed species, each plan must also include:

- (e) Management practices and methods to minimise impacts such as
 - (ii) use of sequential clearing to direct fauna away from an impact zone;

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1.5.3 Coordinator-General Conditions

The Coordinator-General's report for the GLNG project issued on May 2010, included in Appendix 3 (Gas transmission pipeline) the following conditions for the project:

Part 2:

Condition 7. Prior to commencement of construction, a species management plan for affected fauna, regardless of status (both terrestrial and marine) must be prepared in consultation with DERM for the total project including, development, operation and decommissioning phases. The plan must satisfy the requirements under section 322 of the Nature Conservation (Wildlife Management) Regulation 2006 relating to tampering with animal breeding places. The plan shall be developed to:

- a) address the impacts to the species
- b) provide for the survival of the species in the wild.



Condition 17. The following requirements must apply to clearing of plants protected under the Nature Conservation Act 1992:

- e) clearing must be conducted in a sequential manner and in a way that directs escaping wildlife away from the activity and into adjacent natural areas;
- j) an authorised person must be employed where there is a risk to native fauna present within the clearing site. An authorised person is a person permitted to tamper and interfere with a protected animal or a protected animal's breeding place. (For example, a licensed spotter-catcher is someone who is specifically licensed as a spotter-catcher through a Rehabilitation Permit issued by DERM.)
- k) the permit holder must ensure any animals injured by clearing activities under this permit are referred to an appropriate wildlife carer group or veterinarian (to be predetermined prior to clearing) and DERM must be notified within 24 hours of any injuries or deaths.

Part 3:

Condition 3. [...] the design of all creek crossings and waterway barrier works must take account of the matters discussed in Waterway barrier works development approvals (Fish Habitat Management Operational Policy FHMOP 008, DPI and F, July 2009), including:

- a) Protection of flora and fauna during construction and operation, including reduction or disruption to habitat. Particular mention must be made of any potential disruption to Koala or endangered species habitats.
- b) Scheduling of construction to protect the breeding and nesting seasons of the endangered Fitzroy and White Throated Snapping Turtles where applicable
- c) Unless otherwise agreed by DERM, horizontal directional drilling must be undertaken at all wetland crossings within the known distribution of *R. leukops* and *E. albagula* with a minimum buffer width exceeding the maximum recorded distance of nesting from the waterway.

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Condition 4. The following requirements apply to clearing of plants protected under the Nature Conservation Act 1992:

- e) clearing shall be conducted in a sequential manner and in a way that directs escaping wildlife away from the activity and into adjacent natural areas.

Condition 5. The following requirements apply to habitat protection under the Native Conservation Act 1992:

- c) An authorised person must be employed where there is a risk to native fauna present within the clearing site. An authorised person is a person permitted to tamper and interfere with a protected animal or a protected animal's breeding place. (For example, a licensed spotter-catcher is someone who is specifically licensed as a spotter-catcher through a Rehabilitation Permit issued by DERM.)

2 REFERENCES DOCUMENTS

2.1 Company References

- /1/ EA Mainland Model Conditions 3380-GLNG-4-8.2-0018
- /2/ GLNG GTP Corridor Species Management Plan 3380-GLNG-3-1.3-0036
- /3/ GLNG GTP Corridor Significant Species Management Plan 3380-GLNG-3-1.3-0031

2.2 Project References



- /1/ EPBC 2008/4096.
- /2/ Coordinator-General's Evaluation Report for an Environmental Impact Statement – GLNG Project May 2010.
- /3/ Nature Conservation Act 1992: Protected Animals.
- /4/ Australian Pipeline Industry Association (APIA) Code of Environmental Practice.
- /5/ Approved Level 1 Environmental Authority DERM Permit no. PEN 102664411, Environmental Protection Act 1994, November 2011.

2.3 Contractor References

- /1/ 10-ZA-E-85814 - Project Specific Contractor Construction Environmental Management Plan.
- /2/ 10-ZA-E-85836 – Project Specific Health & Safety Management Plan.
- /3/ Project Specific Species Management Plan.
- /4/ Project Specific Significant Species Management Plan.

2.4 Additional References

Sharp, T. & Saunders, G. (unk.). *General: GEN001 Methods of Euthanasia*. New South Wales, Australia: NSW Department of Primary Industries.



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Department of Environment and Resource Management (unk.). *Technical Manual: Hygiene Protocol for Handling Amphibians*

Department of Environment and Resource Management (2011). *Draft Code of Practice for Orphaned, Sick or Injured Protected Wildlife.*

Department of Primary Industries and Fisheries (2004). *Fish Salvage Guidelines.* Queensland, Australia: Department of Primary Industries and Fisheries.

Department of Environment and Resource Management (2006). *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006 – 2016*

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3 TERMS, DEFINITIONS AND ABBREVIATIONS



Terms, definitions and abbreviations used in this Faunal Handling Procedure include:

3.1 Definitions



Company	GLNG Operations Pty Ltd
Contractor	Saipem Australia Pty Ltd
Project	GLNG Gas Transmission Pipeline (GTP) project
Subcontractor	Party employed by Contractor to perform part of a Contract.
Work	Any activity performed as part of Contractor's Scope of Work (SoW) under the Contract.

3.2 Abbreviations

ABL	Australian Bat Lyssavirus
APIA	Australian Pipeline Industry Association
ARAZPAQ	Australasian Regional Association of Zoological Parks and Aquaria Queensland
CEMP	Construction Environmental Management Plan
CICSDA	Callide Infrastructure Corridor State Development Area
CG	Coordinator-General
CEMP	Construction Environmental Management Plan
CSG	Coal Seam Gas
DERM	Department of Environment and Resource Management
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
EA	Environmental Authority
EC	Environmental Coordinator
EM	Environmental Manager
EP Act	<i>Environmental Protection Act 1994</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESA	Environmentally Sensitive Areas

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EVNT	Endangered, Vulnerable or Near Threatened
EWP	Elevated Work Platform
FH	Fauna Handler
FHP	Fauna Handling Procedure
GTP	Gas Transmission Pipeline
HBT	Hollow/Habitat Bearing Trees
HDD	Horizontal Directional Drilling
HSE	Health, Safety and Environment
HSSM	Health, Safety and Security Manager
LLO	Landowner Liaison Officer
LNG	Liquefied Natural Gas
MNES	Matters of National Environmental Significance
NC Act	<i>Nature Conservation Act 1992</i>
NCR	<i>Nature Conservation (Wildlife Management) Regulation 2006</i>
PM	Project Manager
PV	Project Veterinarian
QPWS	Queensland Parks and Wildlife Service
RoW	Right of Way
SEO	Site Environmental Officer
SMP	Species Management Plan
SoW	Scope of Work
SS	Spread Superintendent
SSMP	Significant Species Management Plan
SWMS	Safe Work Methods Statement

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4 RESPONSIBILITIES OF KEY PERSONNEL

The following table provides details of the roles and responsibilities of Contractor's staff.



POSITION	RESPONSIBILITIES
Project Manager (PM)	<ul style="list-style-type: none"> Ensuring that the Fauna Handling Procedure is issued, approved and communicated; and Ensuring adequate human and financial resources, organisational means and proper assets for the effective implementation of this Procedure are provided.
Environmental Manager (EM)	<ul style="list-style-type: none"> Responsible for overseeing the implementation of the Fauna Handling Procedure during the life of the GLNG GTP Project; Ensuring sufficient resources and appropriately licensed suitably qualified personnel are involved in fauna handling; Reviewing the Fauna Handling Procedure for adequacy and functionality; Ensuring that Fauna Handling Procedure are issued and up-to-date; Liaise with the Company in all matters regarding communication with authorities (such as DERM); and Ensuring that staff and subcontractors on site are properly inducted and aware of the Fauna Handling Procedure.
Health, Safety & Security Manager (HSSM)	<ul style="list-style-type: none"> Ensuring that First Aid Boxes are available at each work Camp; Ensuring staff are adequately trained in First Aid procedures and are aware for specific treatments for venomous animal bites; Ensuring that First Aid procedures for fauna bites in the HS&S Management Plan are up-to-date; and Ensuring all staff are aware of emergency procedures for life threatening injuries and bites.

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POSITION	RESPONSIBILITIES
Environmental Coordinator (EC)	<ul style="list-style-type: none"> • Ensuring that each work camp has the details of the wildlife carer group or veterinarian to be contacted when injured fauna are found; • Update and manage the FHP; • Provide assistance to the EM with any fauna incident reporting to authorities or the Company; • Checking on the maintenance of Fauna Interactions Register and Fauna Handling Report-Injury/Death Forms; • Reviewing weekly environmental reports from SEO and providing a weekly feedback and monthly report to EM; and • Periodically reviewing procedures with FH.
Site Environmental Officer (SEO)	<ul style="list-style-type: none"> • Provide the necessary support the FH, liaising with both camp and construction personnel to ensure the safety of both people and wildlife; • Ensure all First Aid kits are identified, have a full inventory and are inspected as scheduled; • Ensure Fauna Incident Reporting procedures are followed and all notifications are sent to the EC in a timely manner; • Ensure all site personnel is aware and properly inducted in issues regarding fauna interactions; • Reviewing Fauna Interactions Register and Fauna Handling Reports-Injury/Death Form/s to compile feedback to management as required; and • Conduct periodic inspections to ensure site compliance at all times.
Spread Superintendent (SS)	<ul style="list-style-type: none"> • Assist the foreman in monitoring and supervising of works, therefore needs to be made aware if work in a specific vicinity has to be delayed until fauna has been removed.
Project Veterinarian (PV)	<ul style="list-style-type: none"> • It is a requirement that a consultant veterinarian is listed under the FH spotter-catcher licence, therefore this position will be filled by the

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POSITION	RESPONSIBILITIES
	appointed FH; <ul style="list-style-type: none"> • Provide support to FH when incidents require additional experience and knowledge; and • Be on call to receive any wildlife that may require surgery.
Fauna Handlers (FH)	<ul style="list-style-type: none"> • Hold appropriate permit/license from DERM to handle and relocate fauna; • Maintaining Fauna Interactions Register; • Reporting on results of wildlife interactions through Fauna Handling report-Injury or Death Form/s for any fauna injured or killed; • Fauna identification, capture, handling and relocation of all fauna species (including venomous snakes); • Identification of tracks, scats, burrows, nests and other fauna habitat of conservation significant species; • Assessing injured fauna for suitability for release, rehabilitation or euthanasia; • If required, to undertake euthanasia of any significantly injured fauna, as per appropriate ethics procedures; • Relocating healthy fauna back into a suitable habitat; • Organising the appropriate action to take any injured fauna to designated wildlife carer group or veterinarian; • Contacting the designated wildlife carer group or veterinarian to make arrangements for injured fauna to be received and treated; • Prepare reports on frequency and outcomes of any fauna interactions between site personnel and wildlife; and • Must comply with Project Specific Health and Safety Management Plan with special focus on:

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POSITION	RESPONSIBILITIES
	<ul style="list-style-type: none"> a) Section 7 – Safe Operations Procedures; b) Section 8 – Confined space area management; c) Section 22 – Workplace, Environment & Hygiene; and d) Section 23 – Medical facilities.
All personnel	<ul style="list-style-type: none"> • Comply with this FHP.

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5 FAUNA HABITAT SURVEYS



Fauna habitat surveys will be conducted prior to any vegetation clearing activities. The purpose of these surveys is to identify and flag any habitat (such as tree hollows, termitaria [hollow arboreal termite mounds], stick nests, possum drays, burrows, etc.), known habitat for threatened species, and any areas of high fauna utilisation (e.g. high number of sightings, scratches or scats) that are within the proposed clearing alignment. The survey will be conducted as close as possible to construction.

For the project there will be two methods for fauna habitat surveys. The first method is required to occur within the key significant fauna habitat areas as identified within previous reporting. This survey is to occur ahead of vegetation clearing. The purpose of this survey is to identify fauna habitat areas and mark these as targeted points for the FH during clearing. This survey will also identify areas where fauna load reduction is required. The methodologies outlined below will be followed for this survey:

- The alignment through key habitat areas, such as Calliope Range, will be walked by teams of suitably qualified FHs and/or ecologists. These areas will be reported on per segment as described in Section 1.1;
- Active and inactive fauna habitat, such as tree hollows, termitaria, arboreal and ground termite mounds, stick nests, possum drays, burrows, areas of high fauna activity and high levels of fauna evidence (scats and scratches) will be recorded by hand-held GPS and flagged with flagging tape; and
- Field data and findings will be compiled into a reference table for clearing works per identified segment. A pre-clearance ecology assessment will be compiled summarising results.

The second methodology for fauna habitat surveys will be associated with the clearing fronts. It has been identified that between two to four clearing fronts may be active at one time during the vegetation clearing of the RoW. The methodologies outlined below will be followed for this survey:

- A minimum of two suitably qualified FHs per clearing front will walk the targeted clearing area daily prior to vegetation clearing. Ideally, this survey would be no more than three days ahead of the clearing front. No vegetation is to be cleared without a FH present;
- Fauna habitat, such as tree hollows, termitaria, arboreal and ground termite mounds, stick nests, possum drays, burrows, areas of high fauna activity and high levels of fauna evidence (scats and scratches) will be recorded by hand-held GPS and marked (e.g. pink flagging tape);
- Data will be compiled into an electronic data base that will be managed by the FHs. This information will be made available at each morning toolbox meeting, so all construction staff are aware of fauna sensitive areas; and
- This data will be included into daily, monthly and annual reports that are to be distributed to relevant persons from Saipem, Santos and GLNG.

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Records of active fauna habitat (hollows, logs, burrows and nests) will be kept at the end of each day and compiled into an electronic database. The information will be used to for fauna embellishment as part of the projects rehabilitation.

6 FAUNA LOAD REDUCTION, HOLLOW REMOVAL, HOLLOW RELOCATION AND NEST MANAGEMENT

From data and information collected during the pre-clearance survey, fauna load reduction zones will be identified. The fauna reduction will predominately focus on arboreal mammals due to the ability to relocate their habitat. Within these areas, felling will be undertaken with extra care as trees are felled they will be checked for active hollows and surviving and injured fauna. In addition to physical removal of fauna, hollows (active) will be removed and relocated to nominated areas outside the RoW to discourage fauna from returning to the clearing alignment (see Section 6.2).

Due to fauna behaviours and habitat requirements for a number of fauna species, it is not possible or viable to remove and relocate all fauna habitat (e.g. leaf litter). It is anticipated that most ground dwelling fauna will vacate the area once disturbance and vibrations commence. It is known that it is more difficult for arboreal animals to vacate an area, therefore these species and their habitat require further management. Nevertheless, areas of high habitat value, especially associated with records of EVNT species, will be identified and flagged prior to clearing works commencing.

Nests shall be considered as per Section 11.1.3.3, giving preference to the establishment of exclusion zones to minimise disturbance over relocation or removal. Where exclusion is not possible, the habitat embellishment (see section 7) will target affected species to compensate for loss of nests.

It is identified that a number of hazards are associated with these works, including working at heights, use of a chainsaw, moving heavy objects etc. All aspects of OH&S will be addressed through a Safe Work Method Statement (SWMS).

Fauna load reduction and removal of habitat will not result in an area being free from fauna, however it is considered that fauna numbers will be minimised. All fauna interactions are to be managed by licensed FHs utilising handling techniques as outlined in Section 11. In addition, any works at heights are to be conducted by a licenced climber where available to the project.

It is noted that relocation areas for fauna will be constrained within the CICSDA. Resolutions to this constraint are discussed further in Section 11.6.

6.1 Trapping

In sensitive environmental areas known to contain fauna habitat (such as range crossings) fauna trapping will be undertaken. Fauna will be trapped using Elliot and cage traps baited with appropriate attractants as outlined below in Table 1.



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Table 1: Suggested Fauna Trap Bait

Fauna Diet	Suggested Bait
Carnivore	<ul style="list-style-type: none"> • Chicken wing/neck. • Canned dog food. • Beef jerky.
Frugivore	<ul style="list-style-type: none"> • Fresh fruit (e.g. apple).
Nectivore	<ul style="list-style-type: none"> • Sweet bait mix (rolled oats, peanut butter, honey and vanilla essence).

As the majority of mammals are most active at night, traps are to be baited and opened in the late afternoon, no earlier than 3-hours before dusk. Traps are then to be cleared no later than 3-hours after dawn, to ensure animals are not inside traps during the heat of the day. Fauna to be relocated are to be placed in clean calico bags as per methods outlined in Section 11, and are to be released at allocated release points outside of the clearing alignment at a suitable time dependant on the fauna species. Negotiations have been held between the Company and landholders to identify which properties are not to have captured fauna released onto. This list will be appended and updated to the plan as the agreements with individual landowners are progressively set.



All traps are to be erected by a FH in a manner that will allow ease of access for fauna. Information including, but not limited to species, sex, health condition, trap location and capture/release GPS co-ordinates will be recorded for each fauna species.

6.2 Hollow Removal and Relocation

Any identified active hollows within the vegetation clearing corridor will be flagged. Once felled they will be checked for fauna. If fauna are located they will be captured and assessed as per the fauna handling procedure. Hollows will be relocated as part of the project rehabilitation.

7 FAUNA HABITAT EMBELLISHMENT INSTALLATION

Numbers and locations of habitat embellishments, such as nest boxes, glider poles and koala poles, will be taken from the conclusion and recommendations of the preclearance ecology reports, and the fauna habitat reports prepared during the clearing. These documents will be prepared from findings of the fauna habitat surveys as outlined in Section 5. These documents will be prepared at the completion of each staff rotation. The EC and EM will liaise with the Company to ensure an agreement is reached in regards of the final detail on numbers and location of these habitat embellishments. The purpose of this installation process is to offset the disturbance

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and habitat loss within the key habitat areas due to vegetation clearing. Installation of the embellishments will occur as part of the rehabilitation of the RoW.

Nest boxes will be erected by a suitably qualified and licensed climber or using lifting equipment where practicable, and will be installed as per requirements of the Fauna Habitat Embellishment Report. In addition, glider and koala poles will be erected by a suitably qualified contractor. A FH or site environmental officer will be required during this process to ensure that embellishments are being erected in the appropriate locations and in a manner that will encourage fauna usage.

It is noted that constraints will be associated with the CICSDA and GSDA where all GTP easements have been grouped. Care is to be taken to ensure that habitat embellishments are not installed into another proponent's easement. This risk of this will be minimised by ensuring contractors clearly understand the extent of all easements within this area. It has been identified that the GLNG GTP is the northern most pipeline within this area. As such, all fauna relocations and embellishment installation through this area will be placed north of the alignment.

8 VEGETATION CLEARING WORKS

8.1 Stage 1 – Selective Clearing



Before the commencement of any significant vegetation clearing works, an initial selective process of vegetation removal will take place where required. Stage 1 vegetation clearing works will consist of the following;

- Translocation of Type A Restricted plant species pursuant to the *Nature Conservation (Protected Plants) Conservation Plan 2000*;
- Translocation of *Cycas megacarpa* as per the *Cycas megacarpa* Management Plan required under conditions 24 and 25 of the EPBC Act approval (2008/4096); and
- Commercial timber harvest as per schedule 23 section 7.5 of the Saipem GLNG contract requirements.

Clearing of vegetation will be in accordance with practices outlined in Section 8.3.

8.2 Stages 2 & 3 – Grubbing and final vegetation clearing

The second phase of clearing will consist of vegetation grubbing of the understorey, with the third stage consisting of clearing the balance of vegetation. This grubbing allows easier access for machinery to larger canopy trees, however the clearing contractor may choose to conduct these stages simultaneously. Clearing of vegetation will be in accordance with practices outlined in Section 8.3.



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8.3 Vegetation Clearing Practices

FHs will be present during all vegetation clearing activities where fauna interactions are expected to happen. During operational works conducted on site, the FHs will be the only authorised personnel to handle fauna. This requirements is to be complied at all times due to conditions imposed by DERM in the EA. This will also ensure impact on all fauna is minimised by construction activities.

The following measures will be implemented during vegetation clearing to minimise, reduce or mitigate the risk of harm or injury to protected species pursuant to the NC Act and Queensland *Animal Care and Protection Act 2001*:

1. All clearing works will occur in the presence of a qualified FH. If for any reason the FH is required to leave the machinery they are allocated to, clearing works for that machine are to immediately cease and recommence only when the FH returns;
2. For easy identification of fauna habitat during clearing activities, all hollow/habitat bearing trees (HBT) will be identified and flagged with flagging tape (or equivalent) during Stage 2 of clearing. Where working in an environmentally sensitive area containing trees with hollows. Where possible, clearing will be undertaken around the hollow bearing trees leaving them to stand overnight allowing resident fauna the opportunity to move into adjacent habitat on their own accord. Where possible, connecting canopy trees will be also retained to allow unimpeded escape. After 24 hours if fauna is still present within the hollow it will be felled and checked immediately. The ability to return to a location and clear trees the following day will need to be checked for compliance with the pest and weed management plan. In some cases where crossing property or weed zone boundaries this technique may not be feasible.
3. Within koala habitat areas, sequential clearing will be utilised to assist fauna in relocating to nearby habitat on their own accord. Under *The Nature Conservation (Koala) Conservation Plan 2006* the regulations exist in relation to clearing of koala habitat in Koala Districts A and B only. The GTP RoW is located wholly in District C, however the following measures will be undertaken to to minimise, reduce or mitigate impacts to koalas in potential koala habitats identified by constraints mapping:
 - Clearing of trees will be carried out in stages that allow koalas in the area being cleared (the clearing site) enough time to move out of the clearing site without human intervention;
 - Ensuring that between each stage and the next there is at least 1 period of 12 hours that starts at 6p.m. on a day and ends at 6am. on the following day, during which no trees are cleared on the site;
 - That no tree in which a koala is present, and no tree with a crown overlapping a tree in which a koala is present, is cleared.

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4. All fauna interactions are to be managed by FHs using methodologies outlined in Section 11, with all interactions recorded on appropriate data sheets;
5. All fauna handled are to undergo a health assessment by the FH. Appropriate release or rehabilitation actions are to be implemented as per advice of the FH;
6. If a koala is not injured but refuses to move from the clearance area on its own accord after two days, the SEO will notify EM to liaise with the Company to contact DERM and negotiate appropriate methods for removal and relocation. Under no circumstances must the tree and the koala be disturbed; and
7. If an animal is incapable of moving from the clearing area due to physical obstructions, or is in direct harm from clearing equipment, it will be captured and relocated into suitable habitat as per methods noted previously.



9 TRENCHING OPERATIONS

9.1 Minimising Fauna Interactions



Lengths of trench will be excavated along the terrestrial section of the GLNG GTP Mainland and Curtis Island section, prior to the lowering-in of the welded pipe sections. Due to operational constraints, several days may elapse between the excavation of the trench and the lowering-in of the pipe. All attempts will be made to minimise the length of time the trench is open at any one time. To minimise handling of fauna, Saipem will put in place numerous measures to reduce the risks of fauna falling into the trench and being traumatised during clearing of vegetation.

Precautionary measures during construction works will include:

- Reduce the width of the construction right of way down from 40m to 30m width where significant species and vegetation remnants are located and within identified Environmentally Sensitive Areas (ESAs);
- Saipem have nominated compliance with APIA Application Code of Environmental Practice (2009) in relation to fauna exclusion fencing. It is noted that this code makes mention that fauna management practices are to be utilised over fencing. It is also noted that condition F2 of the EA states that temporary exclusion fencing will be erected where practicable.
 - Barbed wire is not permitted to be utilised for any fencing associated with the project, unless it is a specific remediation agreement between landowner and landowner liaison officer for reinstatement of property fence lines removed for the construction of the RoW. In this circumstance, if barbed wire to be used, visual aids (such as high-vis bunting) are to be installed to ensure the wire is visible to native fauna.

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- As per Section 5, preclearance surveys will be conducted prior to all vegetation clearing activities;
- Fauna escape features, such as ramps will be installed at a minimum distance of 500m at a 45 degree angle. In addition, hessian ladders are to be placed at a minimum distance of 500m apart between ramps. This will result in an escape feature every 250m and will allow fauna to escape the trench on their own accord. It is noted within the EA that escape points are required every 1,000m, however this separation is considered too distant for some fauna species. These egress assistance points are to reach from the floor of the trench to over the lip of the trench;
- As per Condition F2 of the EA, shelter material will be installed to provide wet weather protection and reduction of heat stress, e.g. placing sawdust filled Hessian bags in pairs every 250 metres;
- Structures for shade will be implemented near egress points to encourage fauna to seek out these cooler areas;
- With reference to published literature (Doody *et al.*, 2003), a high number of fauna deaths can be attributed to flooding of the trench. As such, flood mitigation / drowning prevention devices will need to be utilised. These will include the use of some of the following;
 - If deep water is standing within the trench over a number of days, the water can be pumped from the trench;
 - Construction of drift/silt fences along the top of the trench near flooded sections to avoid fauna falling in;
 - Setting funnel traps at the water's edge to capture fauna before they potentially enter the water;
 - Placing floating objects in the flooded sections of the trench; and
 - Utilising temporary 'bridges' across the trench.
- Where practical, avoid unnecessary vegetation clearing and areas identified as environmentally significant. If moving the machinery around an environmentally significant area is not possible, temporary access tracks comprised of gravel on geo-fabric, or mats, or other low footprint load distributing structures are to be utilised;
- Night-caps will be used over pipe string ends to discourage and prevent wildlife entering into the pipe;
- Pipes will be strung with gaps to allow for fauna movement across the line of pipe;
- Where practicable avoid working at night, particularly near native vegetation; and



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- Site buildings and construction infrastructure where people congregate will be located as far from areas of identified habitat (e.g. native vegetation and waterbodies).

9.2 Trench Inspections

FHs and environmental officers are required to inspect the trench a minimum of twice a day. A tool such as a modified pool scoop with a mirror on the end will be used to view the side of the trench shadowed by the steep wall. This will eliminate the need to walk both sides of the trench. The purpose of these inspections is to search for any fauna that may be trapped inside the trenches. If an environmental officer locates fauna they will call the FH to that section of the trench where the fauna can be captured by the FH. FHs and environmental officers will be looking for direct observations in addition to indirect observations, such as new scats or tracks within the trench.

It is to be noted that the frequency of trench inspections is dependent upon weather conditions. The FH will be responsible for providing guidance and making the decision as to when additional inspections are to be conducted.

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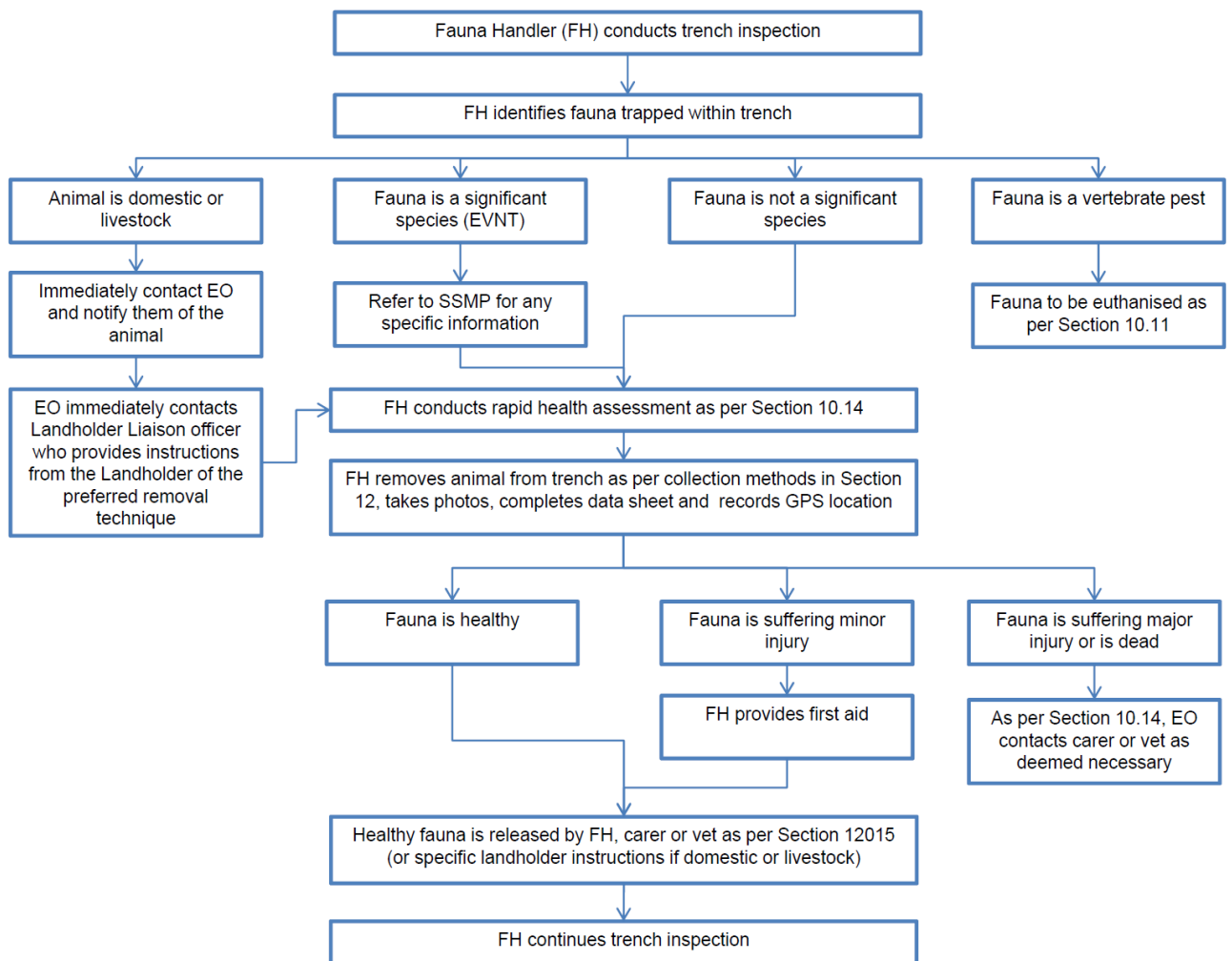




Figure 2: Fauna Collection Procedure to be followed by Fauna Handler

When an animal is noted as trapped within the open trench, work within 50 m of the animal will immediately cease and the Spread Superintendent notified. The Spread Superintendent will immediately engage the FH to assess the situation and together ascertain the best approach to remove the fauna. No operations will commence or continue until the fauna has been removed from danger.

Depending on the faunal group and condition of the fauna (noticeable injuries, stress level, fatigued, etc), the FHs will use the most appropriate collection method as per Section 11 to safely and efficiently remove the animal from the trench.

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9.3 Trench Constraints for Fauna Collection

It is understood that a number of constraints exist due to Health, Safety and Environment (HSE) construction requirements and accessibility. The most common of these constraints are outlined below, along with proposed solutions.

9.3.1 Trench Depth & Access

The trench for the GLNG GTP Project will be 2.1m deep by 2.1m wide, with the potential to be deeper in areas such as creek crossings. These dimensions pose significant constraints for access. Any personnel that are granted permission to be within close proximity of the trench will need to have all required permits, such as construction white card, works associated with a ground level change, working in confined spaces and any additional permits required by the Client and/or the Company. Physical access into the trench will be in accordance with construction regulations and requirements.

It is understood that certain construction constraints exist for access to the trench. However, it is essential that FHs are allowed permission to conduct work within the trench, as they will need to remove any trapped fauna. As such, all FHs will need to obtain all relevant permits and authority to access these zones.

To comply with project HSE requirements for all entities involved, a SWMS, 'Take 5 assessment' or similar, depending on the scale of the potential hazard, will be reviewed to minimise the risk.



9.3.2 Wet Weather Access

It is noted that there is a conflict with Company policy and ethical considerations for fauna during times of wet weather. It is understood that no vehicle access is permitted within the construction zone during wet weather due to HSE concern. However, during periods of rainfall is when trench inspections are most important for FHs due to the high possibility of fauna drowning.

It has been identified that a solution for this conflict will be site access via a Santos approved All-Terrain Vehicle, such as a quad bike. Any use of such equipment will need to be assessed through a SWMS or similar to minimise the risk.

9.3.3 Strung Pipe Locations

Any strung pipe along the edge of the trench is to be located at a distance that permits FHs to conduct trench inspections, but at a distance suitable for construction purposes. FHs will need to walk along either side of the trench to inspect for any trapped fauna, therefore will need an unimpeded track between the trench and strung pipe. Because pipe will be strung 1m from the edge of the trench along one side, with a soil stockpile along the other side, it has been deemed possible to walk between the

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edge of the trench and pipe/soil, where safe. It is to be enforced that the pipe and soil is not to be located any closer as this will impede assessment of the trench.

9.3.4 Timeframe Constraints



Depending on the extent of open trench, timeframe constraints may arise to successfully comply with trench clearing, capture and release timeframes. As the first trench inspection is to occur before construction works commence, FHs need to check the open trench in a timely and efficient manner. Often suitable release habitat is not located immediately adjacent to the clearing alignment. As a result, it is recommended that the FHs travel methodically from one end of the open trench to the other, collect all fauna as they progress, record details of the collection location, then release all fauna at appropriate locations once the trench has been cleared. This process will allow for trench works to commence as soon as possible each morning. To reduce pressure on FHs, field environmental staff may be substituted to assist in locating any trapped fauna. Once located the FH will be called to the location to retrieve the fauna.

It is recognised that a conflict of interest arises between the HSE requirements of the Company and the ethical responsibilities of FHs for working before dawn and after dusk. It is acknowledged that certain activities pose a higher risk during the twilight hours, however it is the ethical responsibility of FHs under their licencing that fauna should be removed from trap locations as close to sunrise as possible. In addition, nocturnal species are required to be released at night. To mitigate and account for any potential hazards associated with these works, risks are to be identified within a SWMS and managed accordingly.

9.3.5 Fatigue Management

Due to the requirements of FHs having to complete trench inspections within 3 hours after dawn and 3 hours before dusk, issues may arise with fatigue management as per Company policies. This may particularly become a problem if staff are required to travel a distance to and from site. It is understood that restrictions are in place for the number of hours worked per day and the number of days worked without a break.

There are a number of possible solutions to manage fatigue, therefore all works will be in compliance with the Company policies for fatigue management. The solutions implemented during the project will be dependent on factors such as distance between site and camp, weather conditions and season, however will consist of staggered or split shifts as well as support from field environmental staff. During the winter months when days are shorter, this risk will not be as difficult to manage. To mitigate and account for any potential hazards associated with these works, risks are to be identified within a SWMS and managed accordingly.

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10 TUNNEL CONSTRUCTION AND MARINE VESSEL OPERATIONS



10.1 Minimising Marine Fauna Interactions

The proposed method for installing the GLNG Gas Transmission Pipeline (GTP) from the mainland to Curtis Island ('The Narrows' crossing - Marine Crossing) is by constructing a segmental lining tunnel (tunnel) under the sea bed. The tunnel will be constructed by excavating a launch shaft on the mainland and driving an Earth Pressure Balance (EPB) Tunnel Boring Machine (TBM) with a segmental lining to a reception shaft on Curtis Island. This method of construction has been selected to minimise the environmental disturbance of the sensitive shore and near-shore areas avoiding any trenching, temporary causeway or temporary pad in the mudflat area and in The Narrows.

Construction activities associated with construction of TBM launch and recovery sites are located above HAT but may result in noise and light impacts to marine fauna (e.g. marine turtles, cetaceans and birds) located in near-shore marine environments. However, due to the location of launch and recovery sites at sites inland from marine areas, impacts to marine fauna are likely to be minimal. Vessel movements associated with the pipeline construction on Curtis Island may also potentially impact on marine fauna by disrupting normal foraging behaviour, introducing marine pests and causing death or injury via vessel collisions. (It should be noted that boat movements associated with construction of the GTP are a small subset of boat movements in the area and need to be managed as part of wider coordination of maritime traffic around Gladstone Harbour.)



Species-specific measures to minimise, reduce or mitigate impacts are listed in the Significant Species Management Plan. To minimise marine fauna interactions associated with pre-construction, construction and operation phases of the GTP in marine environments Saipem will put in place numerous management measures to prevent impacts to marine turtles and marine mammals. These will include:

- Prior to site entry, all site personnel shall be appropriately inducted and made aware of the sensitive environments in which they will be working;
- Where applicable, relevant construction crews working within the intertidal and marine zones will receive marine fauna training which will provide them with the necessary skills to spot/identify marine fauna and follow the procedures required when working in these environments (e.g. to reduce risk of boat strike etc.). This additional training will provide information on the location of "no-go" zones.
- All vessels and their crew will at all times abide by Port of Gladstone restrictions relating to vessel access, speed limits and limited access areas;
- All vessels operating within Port Curtis will comply with all relevant quarantine requirements imposed by Marine Safety Queensland (MSQ), the Gladstone Port Authority (GPA) and the Australian Quarantine and

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Inspection Service (AQIS) to prevent the introduction of invasive marine species;



- All vessels operating within the Narrows area will nominate a vessel crew member as fauna spotter to verify and record any turtle or marine mammal sightings while the vessel is navigating within the reported area. This fauna spotter may or may not be the same as a Fauna Handler;
- A fauna exclusion zone of at least 300m shall be established around the perimeter of all vessels working within the marine zone. If turtles or marine mammals are spotted within 300m of the vessel(s), the protocol below must be followed:
 - Keep watch (at least every 15 minutes) for turtles or marine mammals within the alert (greater than 300 m away) and exclusion (300m or closer) zones
 - If turtles or marine mammals are observed within the alert zone, inform the site supervisor, who should then reduce work that may cause significant underwater noise until the animal has left the alert zone;
 - If turtles or marine mammals are observed within the safety zone, inform the site supervisor, who should then cease any work that may cause significant underwater noise until the animal has left the safety zone;
 - Keep watch for turtles or marine mammals during approach to work areas;
 - If turtles or marine mammals are observed at a distance greater than 300 m, slow down and deviate from current path to avoid closer approach;
 - If turtles or marine mammals are observed at a distance less than 300 m, reduce speed to less than 8 knots and steer away as safely as possible to avoid closer approach;
 - If turtles or marine mammals are observed at a distance less than 100 m, disengage engines (if safety allows) and do not deviate or try to avoid animals. Do not engage engines until animals are observed away from the alert zone or 15 minutes have passed without visual contact;
- No marine animals may be harassed or physically moved on at any time. This includes deliberately making any noises that will likely disturb or attract the animal(s);
- Where applicable, sonar devices on vessels should have operating frequencies above 200kHz to minimise the impact upon dolphins and dugongs that may be present in the general area;

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- Where possible and in accordance with approval conditions, night works within The Narrows crossing area will be avoided. However, any lighting within the marine environment will comply with the Occupational Health and Safety (OHS) guidelines to minimise light spill on marine fauna. In addition and wherever possible, any night lighting associated with the construction phase of the project shall be directed landwards and facing away from the coastline and include measures to limit light spill (e.g. light guards, replacing floodlights with spotlights);
- All waste streams will be correctly disposed of as per the approved Waste Management Plan. The use of plastic bags will be minimised at all site offices and project areas within the coastal zone (intertidal and marine zones);
- When crossing intertidal areas (known areas of aggregation for marine fauna), vessels will to adhere to go-slow zones to minimise boat/fauna strikes and disturbance of shorebirds;
- In the event of a non-compliance, the Company might issue a “stop work” order, upon which all work will cease in the area until the non-compliance has been rectified and measures implemented to prevent the breach re-occurring;
- Any incidents involving will be notified as soon as possible to the EM, who will liaise with the Company to notify the administering authority within 24 hours.
- Regardless of fault (vessel or other), any injuries to, or deaths of marine turtles or marine mammals will be immediately reported to the EM, who will liaise with the Company as soon as possible to notify the administering authority (QPWS) during the contractual standard liability period;



Precautionary environmental management measures to prevent impacts to migratory birds will include:

- An ESCP will be developed and implemented to minimise the risk of erosion and habitat degradation that might affect migratory birds;
- Where constructability allows, every effort will be made to minimise the disturbance within shorebird roosting areas from mid-September onwards. If construction activities are unavoidable during times when migratory birds are present, the EM will notify the Company and help liaise with DERM for further advise on offsetting measures (e.g. targeting the works outside peak periods when migratory birds may be present). A SQEC will be engaged to regularly check the status of shorebirds within The Narrows crossing and notify the Proponent when the shorebirds have left for the season (expected to leave between March/April);
- Prior to the commencement of construction clearing, the limits of clearing will be clearly marked out by a surveyor. Barricade webbing or similar should be used for

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the temporary “no-go” zones located during pre-clearing surveys. Wherever practicable, signage should be erected to increase awareness of migratory birds in the area;

- Prior to site entry, all site personnel shall be appropriately inducted and made aware of the sensitive environments in which they will be working;
- Construction crews working within the intertidal and marine zones will receive training regarding the sensitivity of wetland ecosystems (particularly migratory birds that may be present) and why access to areas outside the GTP ROW is prohibited. This additional training will be provided by the SEO and/or SQEC throughout relevant works conducted in wetlands;
- Where appropriate, signage should be erected to increase personnel awareness of the migratory bird habitats within and adjacent to the GTP ROW.
- Dust suppressing activities must be conducted during earth disturbing activities to minimise potential harm to critical habitat associated to migratory birds;
- Clearing activities within these areas will be monitored by the SEO.
- The PWMP must be implemented and enforced throughout the life of the project to minimise risk of introducing invasive species that might add predation/competition pressure to migratory birds;
- All reasonable and practical measures will be taken to locate site offices, construction camps, stockpiling/laydown areas and plant and equipment storage areas (incl. heavy machinery) on existing cleared lands;
- No activities or vehicle movements (including parking) should be conducted outside the approved access tracks or the ROW;
- Vehicle speed limits must be reduced providing safe driving conditions allow;
- The GTP ROW should be located at the maximum distance from the intertidal wetlands of Curtis Island associated with Graham Creek;
- All reasonable and practical measures must be taken to avoid any waste stream to pollute waterways and wetlands;
- All waste streams will be correctly disposed of as per the approved Waste Management Plan and will not pose a risk to local fauna. The use of plastic bags will be minimised at all site offices and project areas within the coastal zone (intertidal and marine zones). Where applicable, active nests and their immediate surrounding area must be declared temporary “no-go” zones in accordance with the SSMP until the fledglings have left the nest. The status of active nests will be checked weekly in a way that does not risk the nest being abandoned by the breeding pair (adult birds);
- All site offices, construction camps, stockpiling/laydown areas and plant and equipment storage areas (incl. heavy machinery) will be located on existing cleared lands at least 100m from wetlands and watercourses;

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- All reasonable and practical measures must be taken to store hazardous substances and chemicals away from areas identified as critical habitat for migratory birds;
- Observed nesting locations will be reported to the Company, and DERM as required.
- The Rehabilitation Plan will be implemented and monitored to encourage the re-establishment of any habitats disturbed by tunnel construction activities;
- Any mortality of migratory birds observed during the contractual default liability period will be notified to the Company. Assistance will be provided in liaising with DERM to notify such events;
- All vessels and their crew will at all times abide by Port of Gladstone restrictions relating to vessel access, speed limits and limited access areas;
- All vessels operating within Port Curtis will comply with all relevant quarantine requirements imposed by Marine Safety Queensland (MSQ), the Gladstone Port Authority (GPA) and the Australian Quarantine and Inspection Service (AQIS) to prevent the introduction of invasive marine species;
- Regardless of fault, any injuries to, or deaths of migratory birds will be reported to the EM, who will liaise with the Company as soon as possible to notify the administering authority (DERM) within 24 hours during the contractual standard liability period.



11 GENERAL FAUNA HANDLING PROCEDURES

All fauna interactions are to be conducted and managed by suitably qualified and experienced FHs. This condition is required to ensure that accidents or injuries are minimised for both the fauna and FH. In addition, this is required as per the Conditions of Approval under the EPBC Act and NC Act for the GLNG GTP Project.

As a general principle, all interactions will be regulated by the procedures contained in this plan; however, specific management actions for EVNT species and Special Least Concern species are located in the SSMP.

For all fauna interactions during the life of the project, a record of all capture and release locations will be kept. In addition to the capture/release locations, information such as species identification, sex, age class, health condition, etc will be recorded. This information is required as a reporting requirement to DERM under the Spotter-Catcher licence.

Any fauna injured by clearing activities will be referred to an appropriate wildlife carer group (see below) or veterinarian and DERM will be notified within 24 hours of any injuries or deaths.

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11.1 Terrestrial

11.1.1 Reptiles

11.1.1.1 Snakes/Legless Lizards

Unless species identification is immediately certain, all snakes and legless lizards are to be treated as venomous. As such, equipment requirements will generally be for the handling of venomous snakes. Only FHs that have been deemed competent after having **completed a venomous snake handling course may handle venomous snakes**. It is therefore important that a certified venomous snake handler is present when completing the routine checking of trenches. The process for catching, handling and releasing a venomous snake consists of the following:

- Assess the situation – identify the species, note any obstacles and observers within close proximity of the capture area. Ensure a second FH is present to manage onlookers and provided assistance if required. Other staff associated with the project will be interested in the situation, however it is important they remain clear of the area;
- Catch the reptile using appropriate equipment, which may include but not be limited to;
 - Snake hooks of differing shapes utilised for different purposes (trench hook, flat hook, standard hook etc);
 - Extendable poles with catch bags suitable for venomous snakes (i.e. dead corners with tabs, suitable size, clean & sterilised black cotton material);
 - Elbow length welders gloves;
 - ‘Gentle Giants’ snake tongs or other approved tong apparatus;
 - Zip tie or fastener to secure bag closed; and
 - Suitable dark container for holding if immediate release is not possible.
- Snake bite kit to be carried on person or within immediate access in the event that an emergency situation arises from a bite;
- Place bag into a box or garbage bin with a clear label stating ‘caution: venomous snake’ for transport;
- Release snake at an identified suitable release site – ALWAYS with a second FHs with an appropriate level of first aid training for safety;
- Clearly explain the release process with the second FH prior to release so there is no confusion as to how the release is going to occur, the anticipated escape route of the snake, the escape route FHs and refresh first aid procedures for snake bite;

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- Release all reptile species downhill and towards ground cover.

11.1.1.2 Small Reptiles

Small reptiles, such as small dragons, skinks and geckos can be captured by hand with or without the use of riggers gloves. For animals smaller than an average hand, it is recommended that gloves are not used due to the significant reduction in dexterity and sensitivity.

When capturing these reptiles, it is ideal to grip the animal at the base of the neck/upper back with pressure sufficient to restrain the animal. FHs must avoid handling the tail of skink and gecko species as they will drop tails to escape.

Once caught, the animal is to be placed in a dry, clean and sterilised calico fauna bag large enough to be tied off. The bag is to be placed in a suitable cool, dark container for holding if immediate release is not possible.



11.1.1.3 Large Reptiles

Large reptiles, such as large dragons and monitors require additional force due to the strength of the animal. Depending on the size of the animal, capture of large reptiles may be a two person task. Monitors can be caught by taking hold of the base of tail whilst wearing elbow length welders gloves. Care must be taken as monitors will easily swing around towards the handler and bite. Once the animal is under some control, a towel or calico bag is to be used to cover the head, allowing the handler to take hold of the neck. The animal is then in a suitable position that it can be lifted without harm to the animal or FH. Whilst carrying the animal, slightly tilt the head/neck back and hold the animal away from your body, taking note where the tail is, as it will be used to strike.

Once caught, the animal is to be placed in a dry, clean and sterilised large, heavy duty hessian sack and secured with a zip tie. Due to the large weave and strength of the material used for hessian, it is unlikely that any large reptile will be able to rip through the sac. It is noted however that their claws will protrude through the woven gaps, therefore care is to be taken when transporting the sac. The sac is to be placed in a suitable cool, dark crate for holding if immediate release is not possible.

11.1.2 Amphibians

A 'one bag – one frog' approach to frog handling will be utilised in accordance with the *Technical Manual: Hygiene Protocol for Handling Amphibians* prepared by the DERM. New latex gloves will be used between each frog collected within the trench, or between each water body if relocating frogs from the same water source. The purpose of these high level hygiene standards is to help prevent the spread of disease transfer, such as chytridiomycosis and ranaviral disease.

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Frogs should be gently captured by the back legs, pinning their thighs flat between the thumb and forefinger, with their legs lying in the palm of the hand. Frogs can be difficult to handle when slippery, so once the back legs are secured, the second hand should gently cover the head/body. The captured frog is to be placed in a moist, clean and sterilised calico fauna bag, or plastic bag if release is to be immediate. The calico bag is to be stored in a cool dark container for holding if immediate release is not possible.

11.1.3 Birds

11.1.3.1 Small Birds (<3kg)

Bird species will initially move away from construction machinery noise and vibrations. Once construction works become established and bird species become conditioned to construction works, certain species may nest within machinery or the area of construction works. Felled trees or other cleared vegetation may also contain injured birds and/or their offspring.

To capture birds it is best practice to pin the bird with both palms, ensuring that both wings are secured, whilst slipping the bird's neck gently between the first and middle fingers. Once in this position, the bird can be flipped onto its back to minimise movement. It is recommended that riggers gloves are used to avoid being bitten, however care is to be taken to ensure that the grip around the bird's neck is not too tight. Once caught the bird can be placed in a dry, clean and sterilised calico fauna bag large enough to be tied off or in a crate of suitable size covered by a towel. Fauna which is caught is to be placed in a suitable dark area for holding if immediate release is not possible.



11.1.3.2 Large Birds (>3kg)

Large bird species, such as emus, may potentially become entrapped within the trench. Due to the size and risk associated with handling these species, extreme care is to be taken. If the bird is uninjured and suitable for release, it should be calmly encouraged to exit the trench via the nearest egress ramp, and allowed to vacate the RoW. All construction traffic must be stopped in the immediate vicinity to reduce the chance of vehicle related accidents.

If a rapid assessment conducted by a FH deems that the large bird has sustained an injury, the most humane outcome is for the animal to be euthanised via the use of a firearm.

11.1.3.3 Nests

Where a nest is identified, the FH shall establish whether the nest is currently being used or not. In the event that the nest is not being used, the FH, in consultation with the SEO and EC shall consider the potential for, and likely success of, relocating the

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nest to a suitable area adjacent to the RoW. Should the decision be to relocate, the FH must observe the nest during the following days to ensure that it is not being used. If the nest is not suitable to be relocated, the option to create a “no-go” zone shall be discussed. Nests located in the border of the RoW must be protected where practical. If the nest cannot be saved, the FH must be present while the nest is removed to ensure no animals are potentially at harm.



In the event that a nest is occupied by eggs/ chicks, the main goal must be to try and protect the nest until the fledging period is completed. Where practical, a “no-go” zone is to be established and the FH must monitor frequently the nest to verify the nest is being used. If the parents subsequently abandon the nest, the young shall be taken to the nearest fauna carer. In the event that this is not considered a suitable option, i.e. distance to nearest carer is too great etc. then an appropriate method of euthanasia shall be carried out by an experienced FH as per the methods described in Section 11, Table 2.

If it is not possible to save or protect the nest, all surviving young/ eggs shall be transported to the nearest fauna carer. Young shall be bundled together and kept in a cushioned, dark crate. Eggs shall be similarly transported ensuring that all measures are taken to avoid breakage. In the event that this is not considered a suitable option i.e. distance to nearest carer is too great etc., then an appropriate method of euthanasia shall be carried out by an experienced FH as per the methods described in Section 11, Table 2.

Where a tree or a spot is identified that contains a nest for an EVNT species, a buffer in accordance with the SSMP must be clearly marked and the FH, along with the SEO and EM must liaise with the Company to notify DERM for further consultation on the appropriate procedure. The preferential outcome is to allow for the breeding cycle to progress unhindered until young have fledged completely. The end of the fledgling period must be verified by a FH.

11.1.4 Small Mammals & Marsupials

Small mammal species such as gliders and bush rats, are to be handled in a firm but gentle manner. To capture gliders on the ground, it is best practice to hold the animal between the palm of the hand and ground. In this position, gently pinch the scruff of the neck with the thumb and fore finger whilst gentle pushing (in an upwards direction) on the base of the lower jaw bone. This will ensure both the best grip on the animal and that FHs are not in danger of being clawed or bitten. Once the glider is caught, it is to be placed into a dry, clean and sterilised calico fauna bag which is large enough to be tied off. If multiple gliders are found sharing one hollow, they should be placed in the one large calico bag due to their communal behaviour. Any fauna caught is to be placed in a suitable cool and dark location until release.

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11.1.5 Bats/Flying Foxes

Ideally, bats should only be handled by FHs that have undergone the series of 'pre-exposure' immunisation shots for Australian Bat Lyssavirus (ABL). Most bat species can carry ABL, which is closely related to common rabies. It is to be noted that immunisation against ABL is a personal preference for FHs as the vaccine consists of three 'pre-exposure' shots followed by two 'post-exposure' shots or a series of 5 'post-exposure' shots. Both methods have the same outcome therefore either option is valid.

Bats should be handled with heavy gloves, such as riggers gloves, at all times. Best practice for capturing a bat is to place a towel over it, followed by an upturned cage of an appropriate size. Once the bat has calmed down, it may be possible to transfer to a clean and sterile calico fauna bag or to be placed into the cage.

If FHs are bitten or scratched by bats or flying foxes, they must report the injury immediately to the SEO and seek immediate medical attention as they will require vaccines.



11.1.6 Large Mammals

Large mammals, including species such as possums and large glider species, require additional force and care due to the strength of the animal and the speed in which they can move. It is recommended that elbow length welders gloves are worn to prevent injury to the FH. To capture large mammals on the ground, it is best practice to hold the base of the tail and the back of the neck. This will ensure the best grip on the animal and also ensures that the FH is not in danger of being clawed or bitten. Once the animal is caught, it is to be placed into a dry, clean and sterilised calico fauna bag which is large enough to be tied off. It is also possible to place larger mammals into a suitably sized cage trap covered with towels. Any caught fauna is to be placed in a suitable cool and dark location until release.

11.1.7 Macropods

Macropods can be difficult to handle due to their size and strength. If the macropod is uninjured and suitable for release, it should be calmly encouraged to exit the trench via the nearest egress ramp, and allowed to vacate the RoW. All construction traffic must be stopped in the immediate vicinity to reduce the chance of vehicle related accidents.

Wallabies can be captured in a large pole net and handled by the base of the tail. The wallaby should be placed into hessian sack until time of release. Once inside the sack, the animals will settle down. The sack should be hung suspended off the ground in a cool, quiet and dark environment.

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Small kangaroos can be captured in the same way as a wallaby. For large specimens, the animals need to be captured by hand, by quickly taking hold of the base of the tail. The animal needs to be lifted off the ground to facilitate being placed inside a suitably sized large hessian sack. The sack should be hung suspended off the ground in a cool, quiet and dark environment.

Care must be taken to ensure the animals are not held such that their legs are in a position to injure the FH. To avoid injury, the legs of the animal need to be facing away so they cannot kick out.

All injured or dead macropods shall be checked for pouch young, particularly those that are injured and required veterinary attention or those that have been killed.

11.1.8 Domestic Animals and Livestock

In the case where a domestic animal or livestock is trapped within the trench, the Landholder Liaison Officer (LLO) will be immediately contacted by the EO. It is then the LLO's responsibility to initiate contact with the landholder, advise them of the situation, and discuss how the animal is to be handled. The trapped animal will then be removed in collaboration or under instruction of the LLO and/or landholder directly.

If the animal is uninjured, it should be calmly encouraged to exit the trench via the nearest egress ramp, and allowed to vacate the RoW. All construction traffic must be stopped in the immediate vicinity to reduce the chance of vehicle related accidents. If injured, further instruction from the LLO is required.

11.1.9 Vertebrate Pests



Any vertebrate pests that are captured are not to be released; instead, they are to be euthanised as soon as identification is confirmed. It is illegal pursuant to State legislation to release an introduced species after capture. Techniques outlined in Section 11.5.5 are to be used to ethically euthanise pest fauna species.

Only a trained FH/veterinarian who is licensed to administer euthanasia under the *Health (Drugs and Poisons) Regulation 1996* and *Animal Care and Protection Act 2001* is permitted to do so.

11.2 Freshwater and Marine

Aquatic works for the project will consist of waterway crossings, potential dam de-watering and the crossing of The Narrows. Aquatic vertebrates, such as fish, turtles, and marine mammals require additional care during handling due to their dependency on water.

11.2.1.1 Fish

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Freshwater and marine fish species may be encountered during works within watercourses, dam de-watering and potentially at The Narrows crossing. FHs are to handle fish handled in accordance with the Department of Primary Industries and Fisheries (DPI&Fs) *Fish Salvage Guidelines* (2004). The following methods are to be utilised to minimise damage and stress to fish;



- Catch nets are to be made of a fine, soft mesh with no knots. This net is preferred as a tough mesh will often scrape the body and remove scale mucus. In addition, a large mesh may tear the fins and knotted mesh can remove scales and damage flesh;
- Handle fish with wet hands or a wet towel. Dry hands will transmit infection and remove protective mucus;
- Gloves that are wet, open weaved and knotless are good for handling purposes. Be aware of sharp gill-rakers and dorsal spines common to some species;
- Care is to be taken with large fish (greater than 2kg). They are not to be lifted by the mouth as it can cause damage the spinal structure or other parts of the fish. Large fish need to be fully supported in a horizontal position with two hands or a knotless net; and
- Fish should be placed into suitably sized receptacles containing good quality water as soon as possible to minimise the handling time of the fish.

11.2.1.2 Freshwater Turtles

Mature freshwater turtles must be held from the base of the shell to ensure that FHs are not at risk of being bitten. For larger freshwater turtles this may require two hands. Most freshwater turtles are not inclined to bite, however some species can be quite aggressive, such as the red-eared slider turtle (*Trachemys scripta elegans*), which is a declared pest.

It is noted that there is a chance that freshwater turtle breeding locations may be encountered along the RoW. Due to the nature of the nesting of turtles, it is extremely difficult to identify nest locations. In the event that a freshwater turtle nest is uncovered during excavation, operational works are to cease immediately and the FH and SEO must be notified immediately. The process of egg collection from the nest is extremely delicate, time consuming and often completed with minimal success. Nonetheless, if a freshwater turtle nest is uncovered, the following procedure is to occur:

- FH is to contact a suitably qualified environmental consultant/expert to gain information on an appropriate carer;
- A temporary incubator (such as a hard shell esky) is to be half filled with Perlite and water at a 1:1 ratio by weight (e.g. for every 100g of Perlite, 100mL of water is to be added (as 1mL of water equals 1g);



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- Extreme caution is to be taken when moving the eggs due to the soft shell and the yolk being attached to the shell. As such, the eggs need to be collected from the nest and placed at the exact same orientation into the Perlite. To ensure no confusion, a small dot can be gently marked on the top of the egg with a permanent marker. When packing the eggs, it is highly important that the box is placed onto a relatively flat surface to ensure this orientation is maintained. When placing eggs into the temporary incubator, they are to be located at equidistant intervals;
- It is recommended that a layer of plastic wrap be used to seal the container to increase and maintain the humidity within the temporary incubator;
- A temperature of 28°C is to be maintained inside the incubator. As the field incubator is only a temporary fix, the heat can be provided by 'instant heat packs';
- During transport, the box is to be securely fastened and kept on a flat surface. This is important to ensure the box does not move in transit;
- The eggs are to be passed onto the nominated carer and incubated at the appropriate temperature until they hatch; and
- Once hatched, the carer is to contact the SEO to organise collection so they can be released. It is to be noted that female turtles will always return to the same location they were laid to breed, therefore it is important that all hatchlings are returned to the exact location they were collected.

11.2.1.3 Marine Turtles

Marine turtles may be encountered by construction crews and project vessels operating in marine areas of Port Curtis. The following procedures are adapted from DERMs guide for reporting of marine animal interactions by commercial fishers (http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/caring_for_wildlife/pdfs/info-sheet-commercial-fishers.pdf).

- In many areas of Queensland, marine turtles will remain on the inter-tidal flats as the tide recedes, even though they are healthy. This can also occur at night. Turtles that are 'stranded' below the high tide area should be left where they are. If they wash in with the rising tide, or are unable to swim away vigorously, regard them as in need of assistance and report immediately to the EM, who will liaise with the Company as soon as possible to notify the administering authority (QPWS) via the marine animal strandings hotline (see below).
- Injuries or deaths of marine turtles will be reported immediately to the EM, regardless of fault (vessel or other) during the contractual standard liability period. The EM will liaise with the Company as soon as possible to notify the administering authority (QPWS) via the marine animal strandings hotline (see below); QPWS will require the following information:



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- Contact details of the person reporting turtle injury/death
 - Location of the animal (GPS coordinates if possible)
 - A description of the condition and what is wrong with the animal (e.g. thick algae covering, deep cuts, entangled in a net)
 - Animal information (type of turtle (if possible), size, any identifying tags)
 - Photos if available.
- Exhausted or partly drowned turtles can appear dead but can often be resuscitated. A turtle may be checked for signs of life by gently touching the eyes to check for eyelid reflexes. If eyelids indicate a reflex response, the turtle is still alive and needs to rest. Secure the turtle in the shade and raise its tail slightly. Place a wet towel over it to prevent it from drying out. A turtle may require up to 24 hours to sufficiently recover for release.
 - If a turtle is more responsive, under the instructions of QPWS, release it head first into the water at a safe location. Should it fail to become responsive or can't be released safely, call the marine strandings hotline (see below) for further advice.
 - Under the instructions of QPWS, a turtle may need to be retained or secured for collection.
 - If instructed to retain injured turtles, a turtle must not be dragged by its flippers as this can cause injury. Always lift turtles by holding the front and back of their shell (Two people may be required for a large turtle).



11.2.1.4 Marine Mammals (cetaceans and dugongs)

Marine mammals may be encountered by construction crews and project vessels operating in marine areas of Port Curtis. Where applicable, relevant construction crews working within the intertidal and marine zones will receive marine fauna training which will provide them with the necessary skills to spot/identify marine mammals and to follow the procedures required when working in marine environments (e.g. to reduce risk of disturbance, boat strike etc.). This additional training will be provided by the SEO and/or Fauna handler. The following procedures relating to marine mammals will apply:

- Injuries or deaths of marine mammals will be reported immediately to the EM, regardless of fault (vessel or other) during the contractual standard liability period. The EM will liaise with the Company as soon as possible to notify the administering authority (QPWS) via the marine animal strandings hotline (see below); QPWS will require the following information:
 - Contact details of the person reporting marine mammal injury/death

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- Location of the animal (GPS coordinates if possible)
 - A description of the condition and what is wrong with the animal (e.g. thick algae covering, deep cuts, entangled in a net)
 - Animal information (type of marine mammal (if possible), size, any identifying tags)
 - Photos if available.
- Marine mammals can drown if entangled. If a marine mammal is found alive and entangled, where practicable and under the instructions of QPWS, it should be released as soon as possible to minimise stress to the animal. This is best done in the water at the side of the vessel. Where practicable and under the instructions of QPWS the animal's head should be supported out of the water by placing a rope under the body and behind the flippers.
 - No attempt should be made to untangle a whale. Instead, contact QPWS and record and report the whale's location (provide GPS coordinates if possible), its direction of travel and details of any injury.
 - Stranded marine mammals can appear dead but may be resuscitated. Strandings of marine mammals will be reported immediately to the EM during the contractual standard liability period. The EM will liaise with the Company as soon as possible to notify the administering authority (QPWS) via the marine animal strandings hotline. Under instruction by QPWS stranded live animals should be stabilised to ensure that they can breathe and will not overheat or become too stressed. This can be achieved by:
 - Supporting the animal in an upright position if possible, digging trenches under the pectoral fins (front flippers);
 - Keeping the animal moist by covering it with wet blankets or towels, sprayed or doused with a constant supply of water;
 - Protecting any damaged skin with zinc oxide;
 - Not covering or obstructing the blowhole and making every effort to keep sand and water away from the blowhole;
 - When hot, providing shade for the animal by erecting a tarpaulin above it;
 - When in cold or windy weather, erecting a windbreak around the animal;
 - If animals are in the surf zone, they should be moved into deeper waters or shifted so that they are perpendicular to the water's edge, with the head facing land;
 - All noise, contact and disturbance around the animal must be kept to a minimum.



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- If the stranded animal seems healthy, under the direction of the QPWS attempts may be made to re-float the animal and guide it to deeper waters using methods advised by QPWS. Attempts to refloat should only be attempted on rising tides and made when a sufficient number of experienced people are available (e.g. 6 for a medium-sized bottlenose dolphin). Once the animal is towed back to the sea, it should be supported, with its blowhole kept above the surface. Acclimation is complete when the animal is able to surface on its own to breathe. If several cetaceans beached together they should be released together.
- If the animal is unfit for immediate release other options will be considered i.e. rehabilitation, euthanasia or natural death. Euthanasia may be considered and undertaken only by trained veterinary staff.
- Under the instructions of QPWS, a stranded or dead marine mammal may need to be retained or secured for collection.
- Note, all care should be taken when handling marine mammals as a thrashing animal can cause serious injury. If contact with the animal is necessary, it should be minimised through the use of gloves and mask. Also, avoid inhaling any air expired by the animal.

11.3 Injured Fauna

If a native animal is injured on site, the following procedures will be adopted for the handling of the injured fauna:

- All operations will cease immediately;
- The FH is to conduct a rapid assessment to determine the state of health and any injury to the animal as per Section 11.5;
- Where it is safe for the animal and FH, the animal will be bundled into a secure holding container, kept warm and taken to a quiet location;
- If it is unsafe or not possible to bundle the animal, then:
 - An additional FH (preferably the most experienced one) and EO will be contacted immediately to assist in the capture of the injured fauna;
 - The FH will GPS-mark the location of the injured animal and keep a watch on the animal at a safe distance to monitor the condition of the animal and be on standby if the animal moves;
 - The SEO and FH, will arrange the best method for removal of the injured fauna;
 - The FH will secure and capture the injured animal.
 - If necessary the PV will be consulted.

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- Injured fauna will be referred to an appropriate wildlife carer group (see below) or veterinarian and DERM will be notified within 24 hours of any injuries or deaths. Appropriate wildlife carer groups and their contact details are listed below:

Local

1. Gladstone and District Wildlife Carers Association (GDWCA)

Phone: 0427 106 803.

Po Box 7009 Kin Kora Gladstone QLD 4680.

www.boynevalley.org.au/community/gladstone-and-district-wildlife-carers-association/

2. Central Highlands & Coal Fields Wildlife Care & Rescue

Phone: 0437 829 658

Claremont, QLD

www.fauna.org.au/fauna_det.asp?Organisation=Central+Highlands+%26+Coal+Fields+Wildlife+Care+%26+Rescue

Queensland

3. Queensland Parks and Wildlife Service (State-wide referral service and a ranger is sometimes available to provide advice).

Phone: Terrestrial fauna, 1300 130 372

Marine megafauna (turtles, marine mammals), via RSPCA Queensland Marine Animal Strandings Hotline 1300 264 625

<http://www.derm.qld.gov.au/contactus/index.html>

4. Royal Society for the Prevention of Cruelty to Animals (RSPCA) (Call centre open 24 hours for advice and referral)

Phone: 1300 852 188 or 07 3426 9999

<http://www.rspcaql.org.au/>

5. ARROW (Australian Rescue and Rehabilitation Of Wildlife Assoc Inc.) (24 hour Emergency Service)

Phone: 0430 904 415



<http://www.arrowwildlife.org.au/>

6. BAT Conservation and Rescue Queensland (24 hour Emergency Service)

Phone: 0488 228 134

<http://www.bats.org.au/>

- Fauna injured/killed will be recorded within the Fauna Interactions Register and a Fauna Handling Report-Injury/Death will be completed within 24hrs;

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- Seriously injured animals will be euthanised on site as per Section 11.5.5 at the discretion of the experienced/trained FH who is licensed to administer euthanasia under the *Health (Drugs and Poisons) Regulation 1996* and *Animal Care and Protection Act 2001*; and
- Following the capture/recovery of injured fauna, an investigation into the cause of the incident will be undertaken;



11.4 Fauna Mortality

If a fauna mortality, either native or pest occurs on site, then;

- The FH and EO will be contacted immediately and advised of the situation;
- If the fauna mortality was one of the following;
 - Occurred previously (fauna starting to decay); or
 - Was not associated with vegetation clearing; or
 - If the death was a trench mortality; or
 - If the fauna was euthanised by a non-medicated method;

the animal will be moved to bushland away from the site and be placed in a position that will not place other fauna attracted to carrion in danger. This will allow the natural process of decay and scavenging to occur. Alternatively, the animal can be buried at a location approved by the landholder;

- If the fauna mortality was a medicated euthanasia, the animal will be buried deeply to ensure no other fauna can access the carcass. This will ensure that no other fauna are affected by the residual effects of the lethal injection. Alternatively, the PV can be contacted to ascertain if they are willing to accept the carcass to be disposed of as per their procedure (e.g. incinerated);
- If the fauna is noted to be ill or diseased, care is to be taken in not transferring the disease. The carcass is to either be deeply buried or taken to the local veterinarian as per the above;
- Following the removal and appropriate disposal of deceased fauna, an investigation into the cause of the incident will be undertaken;
- All fauna mortalities will be recorded within the Fauna Interactions Register, the DERM register and into a Fauna Handling Report-Injury/Death by the FH; and
- If the species impacted is classified as Least Concern, the SEO must notify DERM via email within 24 hrs to transmit the DERM register. The Company needs to be notified verbally with 12 hours of the event and the incident must be included in the weekly report; and
- A report of the incident must be prepared using the Fauna Handling Report-Injury/Death and be provided to the Company within 48 hours.

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11.5 Fauna Health Inspection & Actions

For any fauna captured during the project, the FH is to conduct a rapid and accurate assessment to determine the state of health and/or any injury to the animal. The possible outcomes of the assessment are that the animal:

- Is fit for immediate release – the animal will be released at an appropriate time by the FH considering specific requirements of the biology/ecology of the animal (e.g. bats and gliders require to be released after dusk or before dawn); or
- Requires minor rehabilitation – the animal will be treated with basic first aid by the FH, will be held overnight and released at the appropriate time; or
- Requires long-term rehabilitation prior release – rehabilitation should be conducted by a registered Wildlife Carer (see above) and animals should only be released after further assessment is conducted; or
- Would not survive without surgery that would prevent its re-entry into the wild – the fauna must be first inspected by a trained professional, such as an experienced wildlife vet nurse, then either sent to a Wildlife Carer for long term rehabilitation or humanely euthanised; or
- Is so badly injured that it cannot survive – the qualified FH will euthanise the animal as per Section 11.5.5.

11.5.1 Animal is Fit for Immediate Release



If the FH assesses the fauna and does not identify any injuries or excessive stress levels in the animal, it is possible to release the fauna as per methodologies outlined in Section 11.

It has been identified that careful consideration will need to be made for release of fauna within the CICSDA and GSDA due to the proximity of clearing to other proponents easements. Solutions to this situation are outlined further in Section 11.1.

11.5.2 Animal Requires Basic First Aid and Release within 24-hr Period

All FHs will be capable to provide treatment for minor first aid to injured fauna. If any captured animal is suffering from a minor injury (e.g. heat stress or a minor cut), the FH will remove the animal to a cool, sheltered, quiet location and administer first aid. Treatment of injured animals shall take priority over clearing disturbance. All plant and equipment working with FHs is to immediately cease works until the FH has administered the adequate care for the injured animal and only then recommence work.

If the animal is to be held overnight or for a short period of time (i.e. 3 days maximum), the FH is to utilise an appropriate room at the camp where they are residing that will function as fauna first-aid room. This room needs to be fitted out with

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basic needs, such as a hot box, an air-conditioner and basic first aid equipment and rehabilitation supplies. Every 12-hours (prior leaving camp and on return to it), the FH will conduct further assessments of the animal to determine if its health has improved. If the animal is fit for release, the FH will be able to release the animal as per methodologies outlined in Section 11.1. If the health assessment concludes that the animal requires further care, the FH responsible will transfer the animal to a wildlife carer as per Section 11.3.

It has been identified that careful consideration will need to be made for release of fauna within the CICSDA and GSDA due to the proximity of clearing to other proponents easements. Solutions to this situation are outlined further in Section 11.1.

11.5.3 Animal is Fit for Rehabilitation and Release

If the FH identifies that the animal requires rehabilitation beyond their capabilities (e.g. an animal requiring care for a period greater than 3 days), or that rehabilitation requires specialised equipment, a suitably qualified wildlife carer will take responsibility for the animal.

It is recognised that a carer's network exists within the Gladstone region, with additional resources available in Brisbane. As such, these resources will be utilised for the rehabilitation of fauna. These wildlife carers are to have the facilities to perform a 'soft-release' prior to wild release. This will provide the animal with a better chance of survival.



When the time comes for the release of fauna, the carer is to contact the appointed FH to organise an appropriate time and date for collection. The FH is to then take the animal back to the appropriate location for release.

It has been identified that careful consideration will need to be made for release of fauna within the CICSDA and GSDA due to the proximity of clearing to other proponents easements. Solutions to this situation are outlined further in Section 11.1.

11.5.4 Animal Requires Surgery

If an animal requires surgery, the FH is to contact the PV to discuss the likelihood of survival from the sustained injury. If immediate surgery is required to ensure the animal survives, then euthanasia must be the preferred alternative. Only if the injured fauna is an EVNT species, all efforts shall be made for the survival of the animal. The criteria to decide if surgery is the option must consider the animal requiring to be transported to Brisbane. Only if the assessment and conditions of the injury warrants the animal would survive the trip, the alternative of surgery must be considered as a viable option.

Once the animal undergoes surgery, it is to be rehabilitated through local carers that have the facilities to perform a 'soft-release' prior to wild release. This will provide the animal with a better chance of survival. If the fauna is not fit for release-to-the-wild

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after surgery but it is suitable for a life in captivity, the Australasian Regional Association of Zoological Parks and Aquaria Queensland (ARAZPAQ) and the Queensland Parks and Wildlife Service (QPWS) have developed a process for allocating these animals to zoos that intended to use them for captive breeding programs known as Queensland Species Management Plan.

11.5.5 Animal Requires Immediate Euthanasia

Conclusions from a rapid health assessment by the FH may deem an injury sustained by an animal significant enough to warrant euthanasia. If the FH is not capable to assess the situation to warrant the procedure, the FH is to contact the nominated PV for advice and recommendations.

It is to be acknowledged that no form of euthanasia is pleasant. Only those FHs, with suitable euthanasia experience, who are licensed to administer euthanasia under the Health (Drugs and Poisons) Regulation 1996 and Animal Care and Protection Act 2001 are allowed to perform the procedure. The FH is to ensure that the process is conducted out of the public eye and with the minimum number of witnesses.



Methods of euthanasia generally fall into two broad categories – chemical or physical. There are three basic mechanisms that fall into these two categories, which include;

1. Hypoxia (direct or indirect);
2. Direct depression of neurons vital for life functions; and
3. Physical destruction of brain activity and destruction of neurons vital for life

Outlined below is a selection of humane euthanasia techniques that are recommended for use on site, and that are published by the New South Wales Department of Primary Industries. It is to be noted that the method and technique of euthanasia of fauna is highly dependent on the size and species of the animal.

11.5.5.1 Shooting

- Shooting is a quick and effective means of humanely destroying animals and in most situations is the only practical method available for use in the field. It is recognised that a high level of risk is involved with the use of firearms on site, however it is proposed that these potential hazards be minimised through capability assessment, licensing, and implementation of a specific SWMS;
- Correctly placed head shots are preferred, which causes brain function to cease. Shots must be aimed so that the projectile enters the brain, causing instant loss of consciousness. This must take into account differences in brain position and skull conformation between species as well as the energy requirement for skull bone and sinus penetration;
- In some situations chest shots may be required where an accurate head shot cannot be achieved (e.g. injured free-ranging animals or animals that cannot be restrained). Death from a shot to the chest is due to massive tissue damage and



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haemorrhage from major blood vessels. Insensibility will occur after an interval ranging from a few seconds to a minute or more. If a shot stops the heart functioning, the animal will lose consciousness rapidly.

- Shooting should only be performed by a capable operator who have the necessary experience with firearms and who hold the appropriate Queensland Firearms Licence of the correct Category, damage mitigation permits (if required) and any additional accreditations deemed necessary;
- Storage and transportation of firearms and ammunition must comply with the requirements of the *Weapons Regulation 1996*;
- Unnecessary people should keep away from the area to allow the animal to become less agitated. The shooter should approach the animal in a calm and quiet manner;
- To maximise the impact of the shot and to minimise the risk of misdirection the range should be as short as possible e.g. 5–20 cm from the head if using a rifle, 1–2 metres if using a shotgun. The barrel should never be touching the animal's head;
- Never fire when the animal is moving its head, be patient and wait until the animal is motionless before shooting. Accuracy is important to achieve a humane death. One shot should ensure instantaneous loss of consciousness and rapid death without resumption of consciousness; and
- Smaller calibre rifles (minimum .22 magnum) are adequate for euthanasia of most species of animals at short range (< 5 metres), as long as the shot is correctly positioned. Soft-nose or hollow point ammunition which expands on impact are preferred to minimise the risk of collateral damage.

11.5.5.2 Blunt force trauma

- Blunt force trauma, such as a blow to the head may be acceptable in small or young animals with a soft skull (e.g. neonatal young <3 weeks old, rats, mice, birds, reptiles, amphibians, fish);
- A single, sharp blow should be delivered to the central skull bones. This can be achieved with a hard and heavy, blunt instrument (e.g. metal pipe, wooden club etc.). Alternatively, small animals can be held by the hind quarters and swung in an arc so that the back of the head is struck on the edge of a hard object;
- Often this technique only renders an animal unconscious, therefore it must be immediately followed by a second method that ensures death (e.g. cervical dislocation);
- When properly performed with sufficient force, immediate depression of the central nervous system and destruction of brain tissue occurs. Loss of consciousness is rapid; and

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- It must be properly applied to be effective and humane therefore, training and skill of operator is essential. If not performed correctly, various degrees of consciousness with accompanying pain can occur.

11.5.5.3 Cervical dislocation

- Acceptable for small animals which are easily handled e.g. small to medium sized birds, rodents and, rabbits (weighing < 1 kg);
- The operator must be confident of performing this technique quickly and effectively. It requires mastering of technical skills to ensure that loss of consciousness is rapidly induced;
- This method involves separation of the skull and the brain from the spinal cord by pressure applied posterior to the base of the skull. The brain stem - which controls respiration and heart activity - is consequently damaged, stopping breathing and reducing blood flow to the brain, leading to death;
- Studies in rats have shown that electrical activity in the brain persists for around 13 seconds following cervical dislocation. This may represent a period of remaining consciousness;
- Violent muscular contraction can occur after cervical dislocation.

11.5.5.4 Carbon dioxide (CO₂)

- Carbon dioxide used in a sealed environment is suitable for animals up to 2 kg and is mostly used for small birds, rodents and small mammals;
- There is less risk to the operator when using CO₂ compared to anaesthetic gases or carbon monoxide;
- Carbon dioxide is available in cylinders as a compressed gas (food, medical or industrial grade). It is recommended that a cylinder containing up to 70% CO₂ is used as it is most effective with the least amount of stress. An optimal flow rate should displace at least 20% of the chamber volume per minute;
- The gas can be piped via a pressure reducing valve into either a plastic bag that encloses a cage or into a deep container with lid;
- A constant level of CO₂ should be maintained for at least 3 minutes and anaesthesia will occur within 60 seconds;
- Carbon dioxide is heavier than air so incomplete filling of a chamber may permit some animals to climb, fly up or raise their heads above the higher concentrations to avoid exposure to the gas;
- Each animal must be verified as dead before removing it from the chamber; and

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- If uncertain whether the animal is dead from CO₂ narcosis, it must be followed by another euthanasia method e.g. cervical dislocation.

11.5.5.5 Injectable agents – Barbiturates



- One of the most humane methods of euthanasia is the administration of a barbiturate overdose either by the intravenous or intraperitoneal routes;
- When using the intraperitoneal route, a non-irritant barbiturate solution should be used (i.e. a normal anaesthetic solution of barbiturate such as Nembutal® (sodium pentobarbitone)). Commercially prepared 'euthanasia solutions' (e.g. Euthatal® or Lethabarb®) are very alkaline and are thought to cause irritation of the peritoneum and pain prior to unconsciousness. Large volumes of anaesthetic solution would have to be used in anything other than a very small animal (euthanasia solutions are approximately 4 times more concentrated than barbiturates designed for anaesthesia);
- Animals need to be well restrained. If animals cannot be handled they may need to be immobilised in a restraint cage or sack or sedative drugs/ anaesthetic gases administered prior to injection of barbiturate;
- Barbiturates are restricted substances, listed as Schedule 4 under the Standard for the Uniform Scheduling of Drugs and Poisons. This listing requires that they be restricted to medical, dental or veterinary prescription or supply. Within Queensland, dispensing of these drugs are regulated under the *Health (Drugs and Poisons) Regulation 1996* and *Animal Care and Protection Act 2001*.

11.5.5.6 Recommended methods for species

Table 2 below provides recommended euthanasia techniques for specific species. These recommendations have been extracted from publications on humane euthanasia techniques that are recommended for use on site, which have been published by the New South Wales Department of Primary Industries.

Table 2: Recommended methods of euthanasia

Fauna Group	Method
Amphibians	<ul style="list-style-type: none"> • Cooling (to 4°C) followed by blunt force trauma; • Skin absorption with chloral hydrate, tricaine methane sulphonate (MS-222) or benzocaine; or • Barbiturate injection.
Bats/Flying Foxes	<ul style="list-style-type: none"> • Inhalation of CO₂; or • Barbiturate injection.

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Large Birds	<ul style="list-style-type: none"> • Shooting; or • Barbiturate injection.
Small Birds (<3kg)	<ul style="list-style-type: none"> • Cervical dislocation; • Shooting; • Inhalation of CO₂ – please note due to air sacs inside bird bones, this method requires longer periods of exposure; or • Barbiturate injection.
Small Mammals (<2kg) & Marsupials	<ul style="list-style-type: none"> • Shooting; • Inhalation of CO₂; or • Barbiturate injection.
Large Mammals (including livestock)	<ul style="list-style-type: none"> • Shooting; or • Barbiturate injection.
Macropods	<ul style="list-style-type: none"> • Shooting; or • Blunt force trauma.
Reptiles Snakes/Lizards –	<ul style="list-style-type: none"> • Shooting; or • Blunt force trauma.
Reptiles – Turtles	<ul style="list-style-type: none"> • Shooting; • Blunt force trauma; or • Barbiturate injection.

11.6 Management of Fauna Release

Once an animal is deemed fit for release, the FH is responsible for returning the animal to the appropriate area. When releasing an animal, attention must be paid to a number of factors, including proximity to operational construction activities, weather conditions, seasonal conditions and the animal's ecology. In particular, the animal should be released;

1. Away from any construction activities;
2. Into a suitable habitat with adequate food supply;
3. In appropriate weather, season and time of day (this is particularly important for migratory species);
4. Under circumstances which will not cause additional stress, such as extremes of weather, the wrong time of the day (e.g. nocturnal animals);
5. In the appropriate social group. Some animals fare better if released into social groups; and
6. Within 1km of the capture location, as per the DERM Guidelines (care will need to be taken with regard to property access, landowner agreements and the location of other proponent's corridor locations).

Fauna should be released at a suitable time of day (Table 3), in a protected location close to the site. If clearing is entirely completed, they can be released within the site. The Fauna Interaction Register must be filled to record the release of fauna impacted

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during construction, regardless of the outcome. Refer to Attachment 13.1 for an example of the register.

Table 3. Preferred fauna release times



Fauna group	Example species	Preferred release time
Arboreal mammals/nocturnal birds & reptiles	Possums, gliders, bats, owls, pythons	After dusk/ before dawn
Amphibians/reptiles/day birds/tadpoles	frogs, dragons, skinks, honeyeaters	Day or night

In situations where captured animals can be released back into the site the following important criteria must be considered;

- Sufficient habitat is, or will be retained on site to support the animal population, taking into account factors such as: viability of prey species populations; availability of nesting sites or hollows; availability of clean water; and availability of sufficient food resources;
- Habitat corridors retained are of suitable size, topography and vegetation cover to provide effective routes for normal ecological processes such as immigration, emigration, recruitment and dispersal;
- Habitat blocks and corridors are of sufficient size to maintain ecological integrity and effectiveness, taking into account likely edge effects; and
- Long-term risk factors to individual and population survival associated with the development have been (or will be) adequately managed or mitigated. For example: domestic animal control, motor vehicle/road impacts, swimming pool risk.

Release of fauna onto adjacent land will need to be confirmed with LLO for each individual lot. The FH and LLO will need to be in close communications to notify landowners in regard to access. Other locations for release will include State forest areas and significant habitat corridors. To this date, no landowners have expressed a refusal to release wildlife onto their properties. Should this condition arises, the list will be appended into the Appendix 13. 5.

It has been identified that careful consideration will need to be made for release of fauna within the CICSDA and GSDA due to the proximity of clearing to other proponents easements. With reference to figures contained within Attachment 13.4, the GLNG GTP is the most northern corridor within the CICSDA. As such, any fauna captured within this area will be released to the north to avoid placing fauna into other proponent's corridors.

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It is proposed that all fauna captured on Curtis Island is to be micro-chipped and that each animal captured is scanned. By conducting micro-chipping of these animals, data for re-capture and 'trap-happy' fauna can be accounted for. This knowledge will provide information pertaining to the impacts of vegetation clearing and construction activities.

12 FAUNA NOTIFICATION AND REPORTING



All vertebrate fauna species encountered (relocated, moved, injured or killed) during the pre-clearing, construction and operational works will be recorded daily in the Fauna Interactions Register (Attachment 13.1) and the DERM register. The Fauna Interaction Register will also contain a separate section highlighting EVNT species that have been handled. The Fauna Interactions Register information is required by the FHs for the purpose of reporting under the FH licence issued by DERM. In addition, this information recorded is to be imported into GIS and provided to the Company on request.

The Client requires verbal notification of all least-concern fauna interactions within 12 hours of the events and as soon as practicable (within 6 hours of the incident) in the event of harm to an EVNT species. DERM has placed a requirement to transmit their register within 24 hours of an interaction event when it relates to Least-Concern species and contact as soon as practicable when EVNT species have been harmed.

Weekly and monthly written reports will be prepared by the SEO and submitted to the Company on the details of all Least-Concern animals found in the trench and/or any fauna that required handling. EVNT fauna interactions and incident investigations will be notified in a written report to the Company 24 hours after the event. Raw data will be supplied to the Company as per the Flora and Fauna Management Plan. Any incident that results in the injury or fatality of an animal will be reported on Fauna Handling Report- Injury/Death Form (Attachment 13.2) which would detail the incident, cause of injury/mortality and the type of species (if known). It will also be recorded on the Environmental Issues Register which will indicate corrective action taken and close out date of the incident (Attachment 13.3). The EM will liaise with the Company when notification and reports are to be sent to DERM regarding EVNT species.

The following key performance indicators and their respective weighting will be used with respect to fauna handling:

- Sick or injured wildlife species recorded in RoW and recovered for treatment or rehabilitation (weighting of 50);
- Wildlife killed in the trench, access roads or construction area (weighting of 50);

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- Uninjured wildlife or livestock removed from the trench (weighting of 0) ;
- Sick or injured livestock recorded in RoW and recovered for treatment (weighting of 50); and
- Livestock killed in the trench, access roads or construction area (weighting of 50).

In addition to these Key Performance Indicators, it is noted that the Significant Species Management Plan (SSMP) prepared for the GLNG GTP Project outlines a number of goals that are to be aimed for during the life of operational works. These goals are to be cross referenced and acknowledged through the reporting phase.



13 AUDITING

The Fauna Handling Procedure is to be treated as a live document, therefore it will be audited internally as per the requirements specified in the Contractor's CEMP or after a major incident by the Contractor's Environmental Management Team. The purpose of this audit is to allow for recommended improvements to the procedure in the event that a particular form of management is not successfully fulfilling the intent of the document. The Fauna Handling Procedure will also be audited by Contractor's third party auditors to verify that the Fauna Handling is done per EA and CG's conditions.


Results from the internal and external audit processes are to be passed onto both the Client and the Company to advise of any potential concerns or changes. Reports generated from the TPA are required to be submitted to the DERM and the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) as per conditions of the EA and EPBC Act approvals. If either auditing process notes that changes are recommended to the Fauna Handling Procedure, amendments are to be made and submitted to the Company initially, then forwarded to DERM and DSEWPaC for approval.



14 ATTACHMENTS

- 14.1 – Fauna Interactions Register
- 14.2 – Fauna Handling Report - Injury/Death Form
- 14.3 - Environmental Issues Register
- 14.4 – CICSDA pipeline corridor locations


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14.1 Fauna Interactions Register

 FAUNA INTERACTIONS REGISTER						
FAUNA HANDLER'S INFORMATION:						
Name of Fauna Handler/s : _____ Telephone Number: _____ Email: _____						
FAUNA INFORMATION:						
No.	Location found (GPS coordinates)	Fauna Type (mammal, reptile, bird etc)	Genus and species	If Unknown, brief description & photo attached (or photo reference/hyperlink)	Significant/ Threatened Species (Y/N) If yes photos must be included	Where was fauna relocated? Include GPS location

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14.2 Fauna Handling Report – Injury/Death Form

	Fauna Incident Report – Injury/Death Form
FAUNA HANDLER'S INFORMATION:	
Name of Fauna Handler : _____ /Death: _____	Date of Injury _____
Telephone Number: _____ am/pm	Time: _____
Email: _____ _____	GPS location : _____
Signature: _____	
FAUNA INFORMATION:	
Fauna type (mammal, reptile etc): _____	
Genus and species: _____	
Sex, age and health: _____	
Significant species (Y/N) : _____	
Description of fauna (size, weight, sex, reproductive status, health condition, age class etc): NB: Ensure photos are attached, particularly for ENVT species	
INJURY TO FAUNA:	
What was the cause of injury? _____	
Brief description of extent of injury: _____	
The vet/wildlife carer the fauna was taken to: _____	
The vet/wildlife carer's prognosis: _____	

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DEATH OF FAUNA:

What was the cause of death?

Brief description of extent of injury that resulted in death:

How was it disposed of?

NOTIFICATION:

Date/Time Saipem Environmental Personnel Notified: _____ / _____

Person Contacted: _____

Notes: _____

Was any government agency notified? Yes / No



If yes, provide name, agency, contact info:

Measures to Prevent Recurrence of such an incident:


Saipem Environmental Manager: _____



Signature: _____

Date: _____

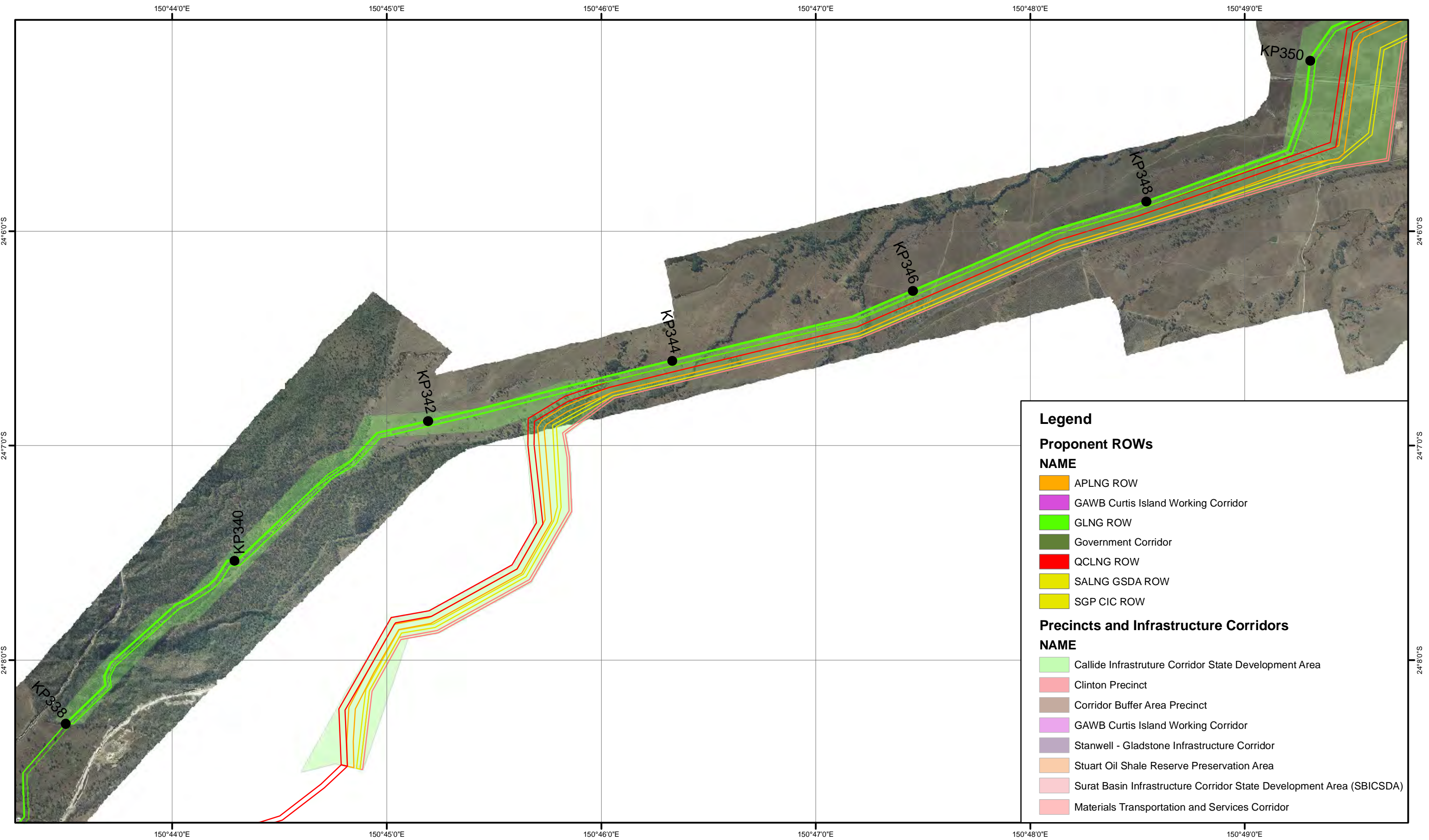
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14.3 Environmental Issues Register

 Environmental Issues Register					
Incident	Brief Description of Incident	Date	Time	Corrective Action Taken	Close out Date of Incident

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14.4 CICSDA pipeline corridor locations



Legend

Proponent ROWs

NAME

- APLNG ROW
- GAWB Curtis Island Working Corridor
- GLNG ROW
- Government Corridor
- QCLNG ROW
- SALNG GSDA ROW
- SGP CIC ROW

Precincts and Infrastructure Corridors

NAME

- Callide Infrastructure Corridor State Development Area
- Clinton Precinct
- Corridor Buffer Area Precinct
- GAWB Curtis Island Working Corridor
- Stanwell - Gladstone Infrastructure Corridor
- Stuart Oil Shale Reserve Preservation Area
- Surat Basin Infrastructure Corridor State Development Area (SBICSDA)
- Materials Transportation and Services Corridor



GLNG GAS TRANSMISSION PIPELINE

Proponent ROWs

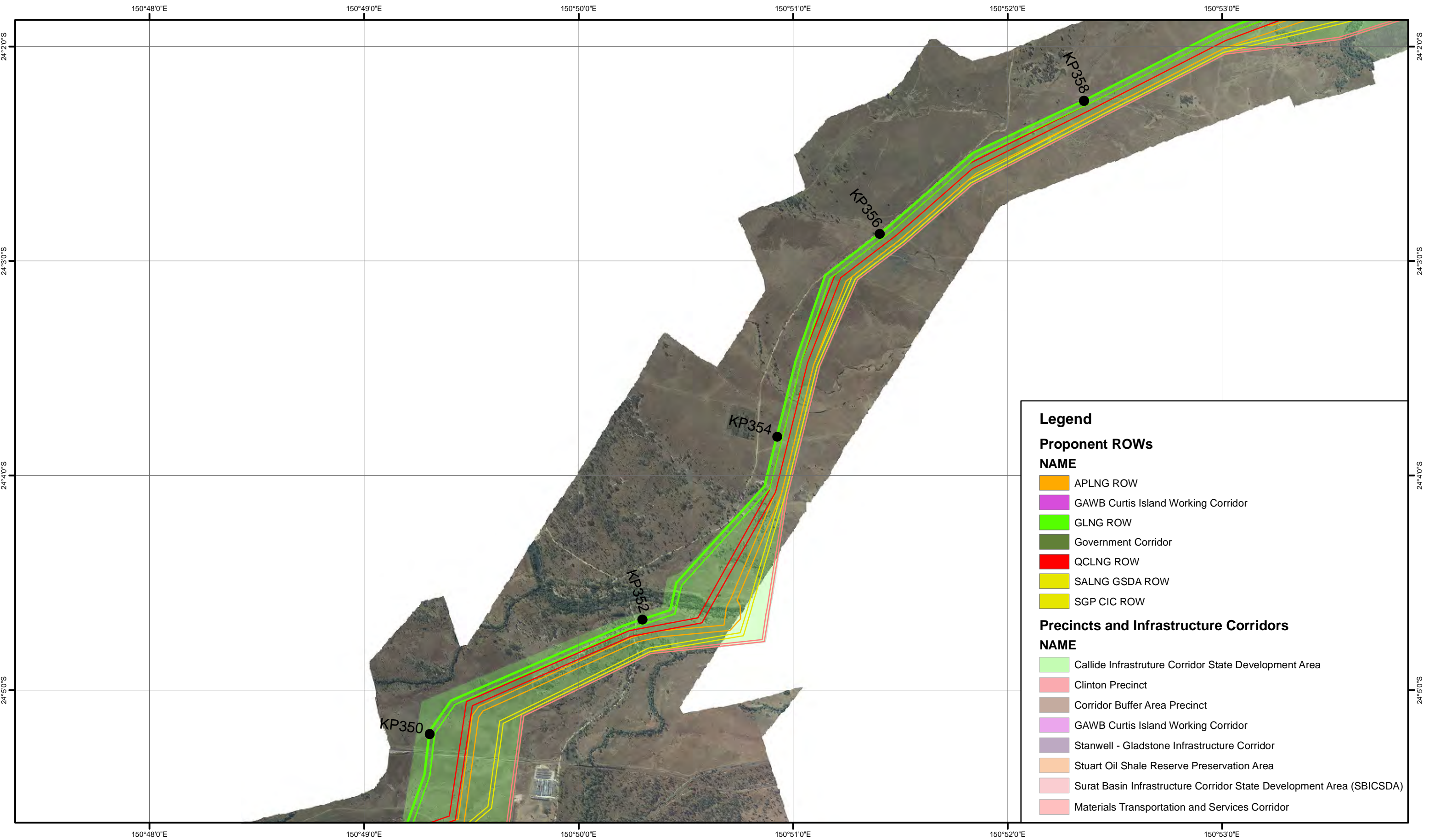


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Proponent ROWs



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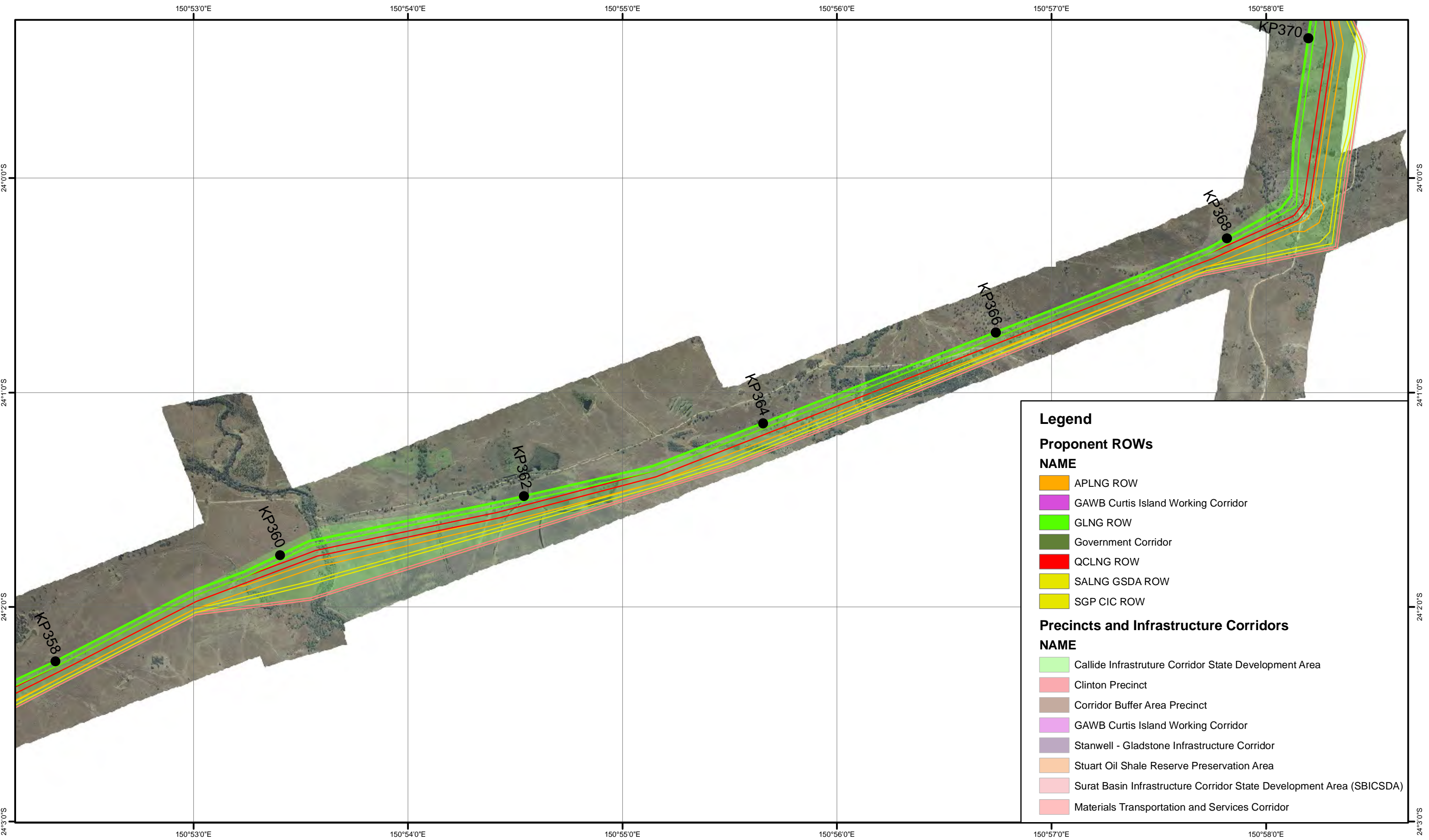
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Legend

Proponent ROWs

- NAME**
- APLNG ROW
 - GAWB Curtis Island Working Corridor
 - GLNG ROW
 - Government Corridor
 - QCLNG ROW
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 - SGP CIC ROW

Precincts and Infrastructure Corridors

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 - Materials Transportation and Services Corridor



GLNG GAS TRANSMISSION PIPELINE
Proponent ROWs

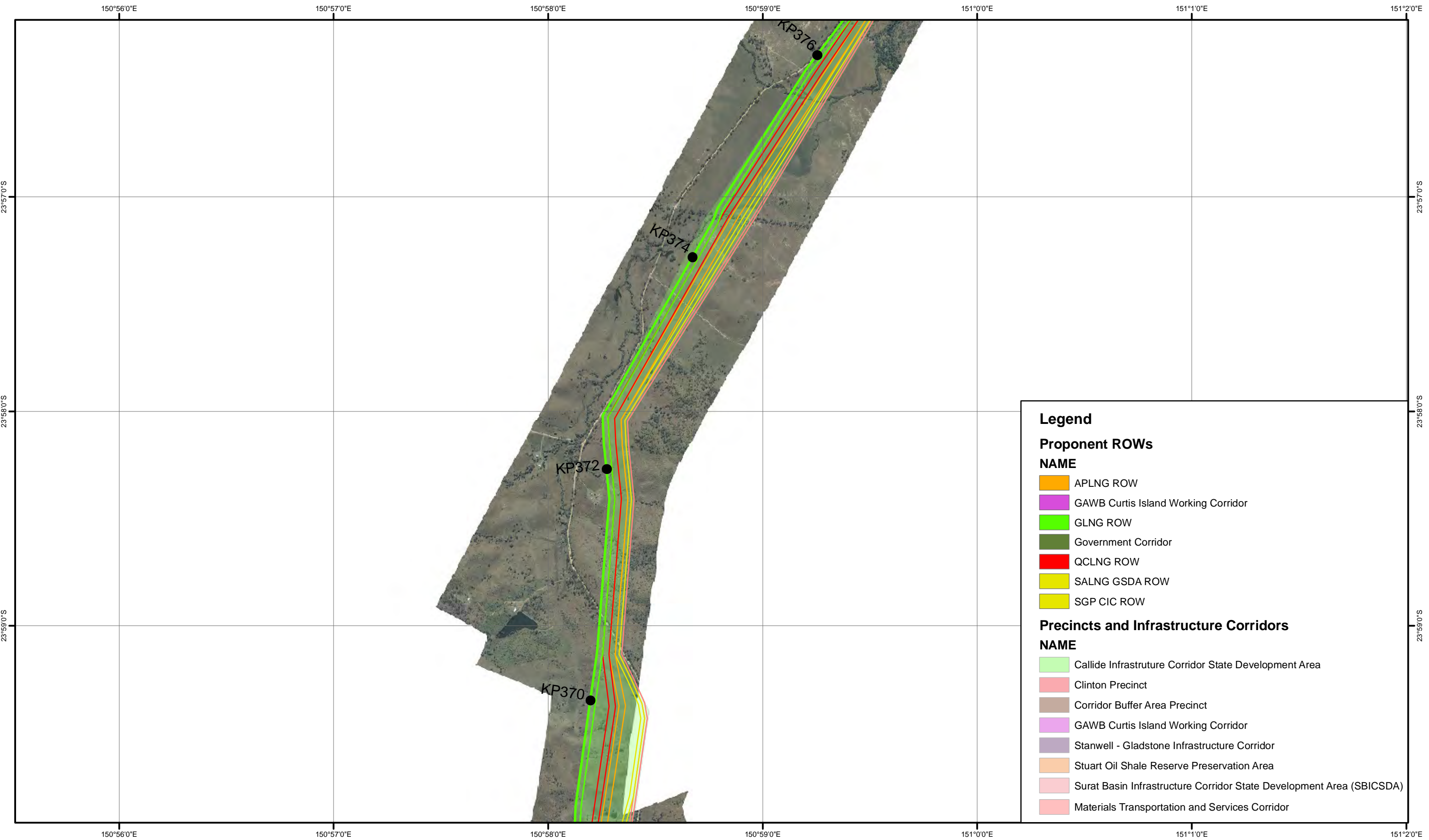


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Proponent ROWs

NAME

- APLNG ROW
- GAWB Curtis Island Working Corridor
- GLNG ROW
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Proponent ROWs



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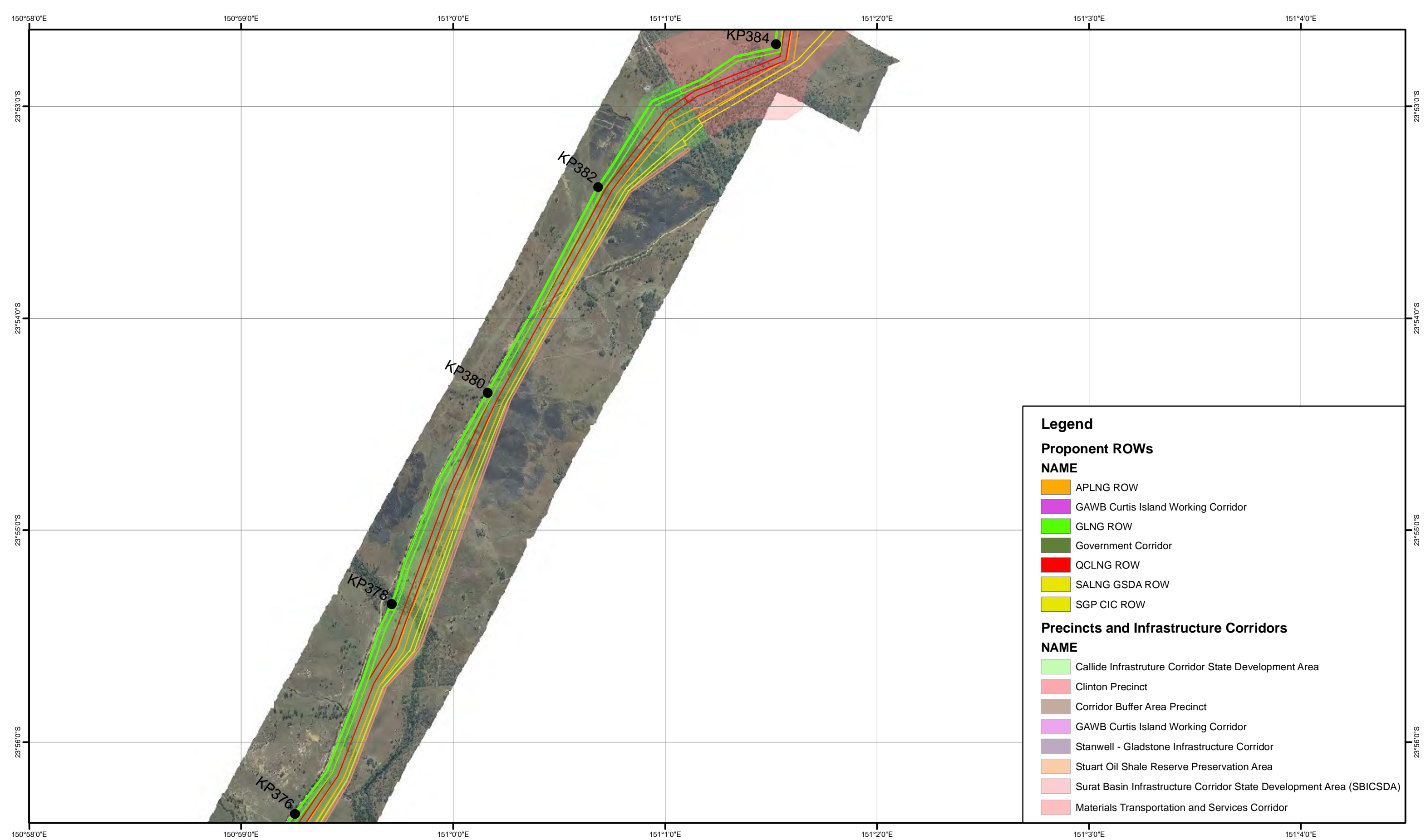
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Legend

Proponent ROWs

NAME

- APLNG ROW
- GAWB Curtis Island Working Corridor
- GLNG ROW
- Government Corridor
- QCLNG ROW
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- SGP CIC ROW

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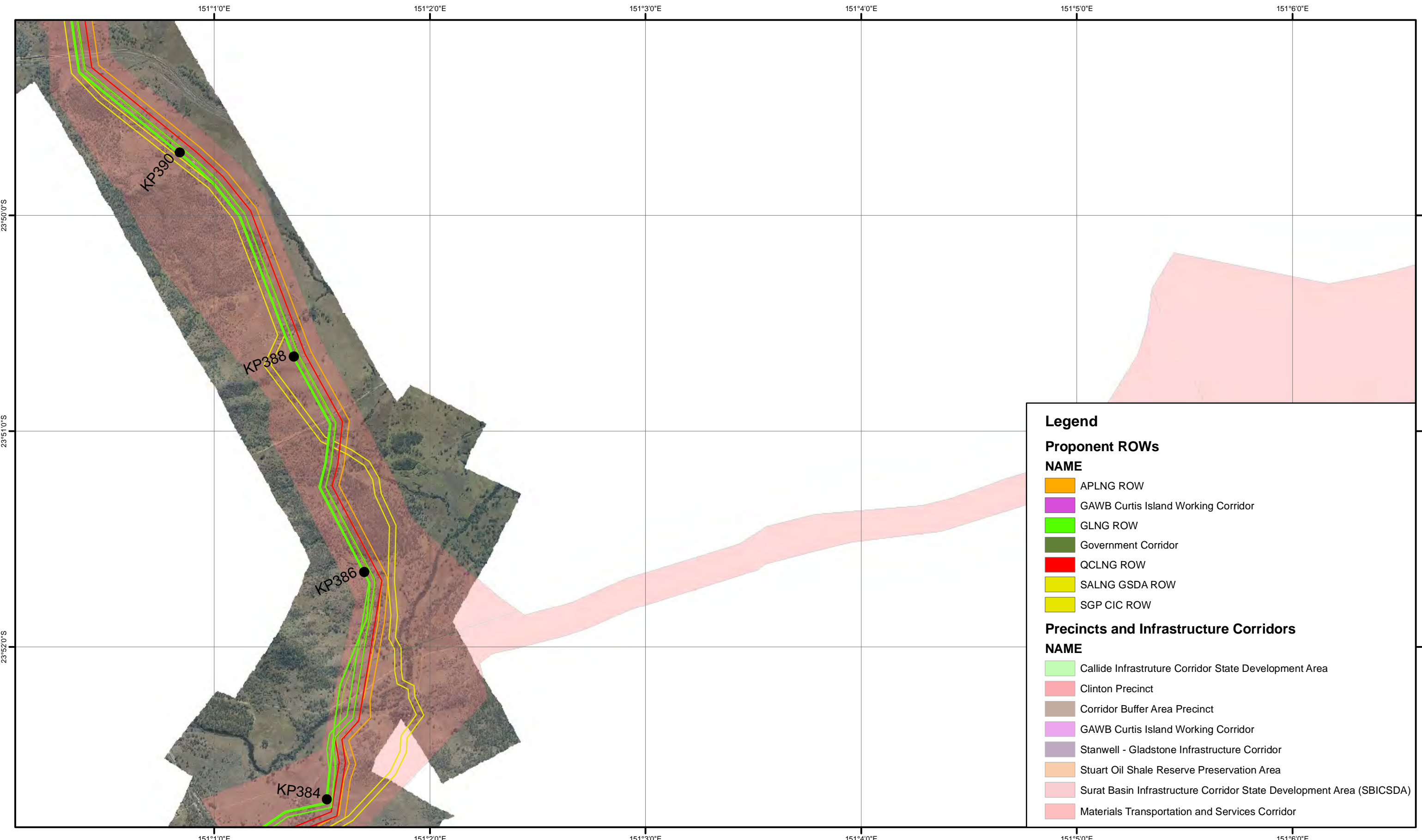
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Proponent ROWs



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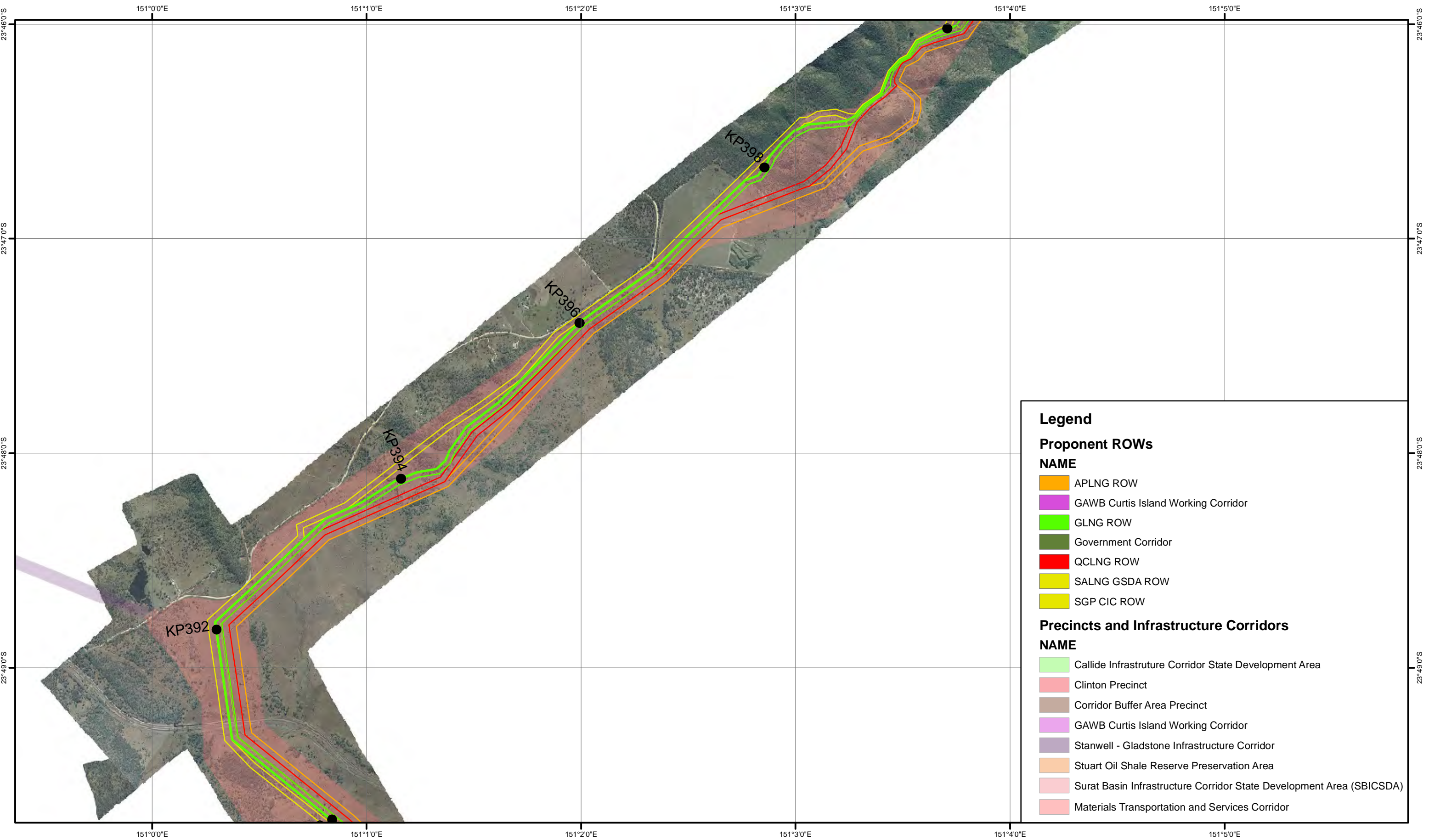
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Legend

Proponent ROWs

NAME

- APLNG ROW
- GAWB Curtis Island Working Corridor
- GLNG ROW
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- SGP CIC ROW

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- Materials Transportation and Services Corridor



GLNG GAS TRANSMISSION PIPELINE

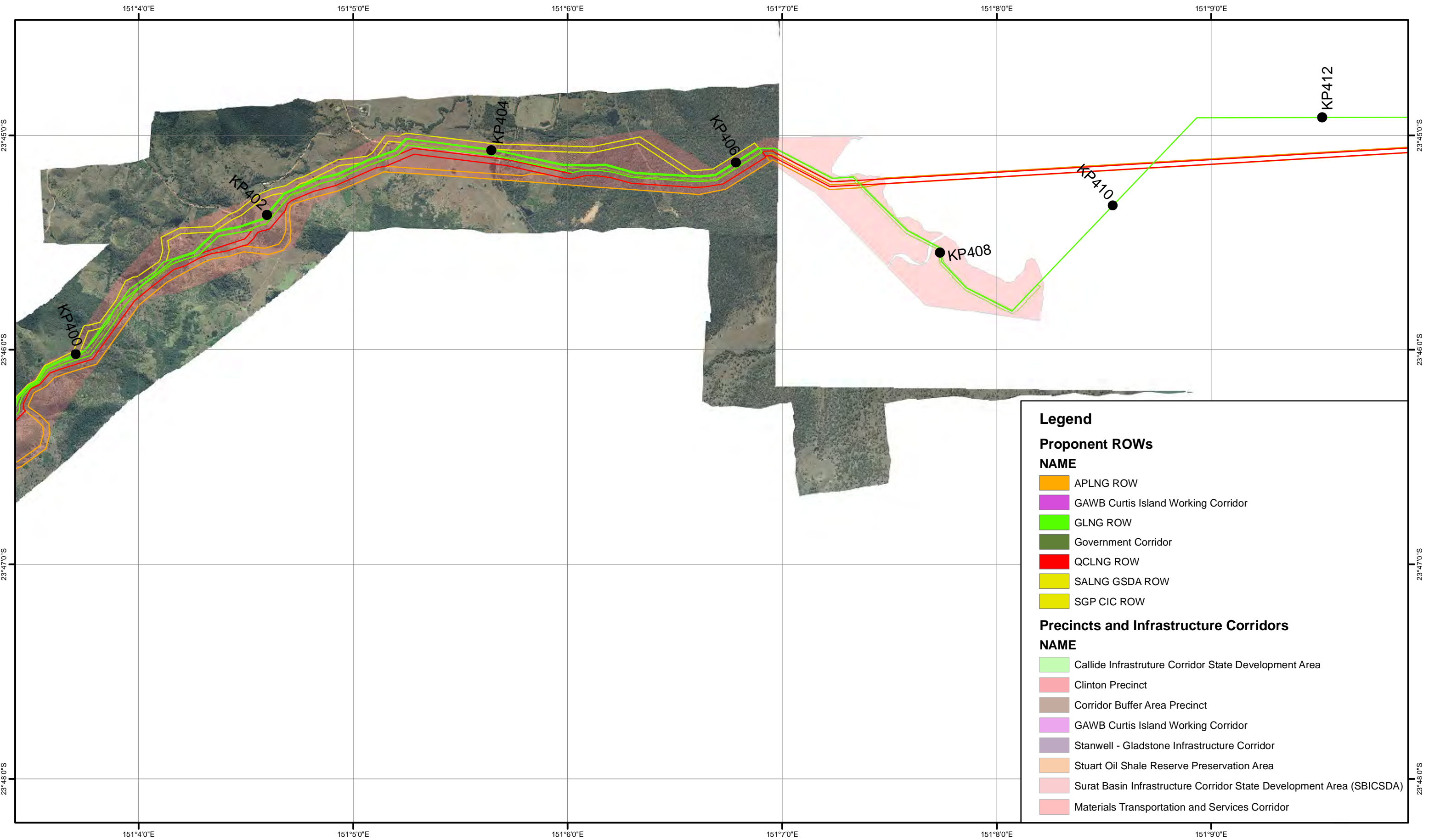
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Proponent ROWs



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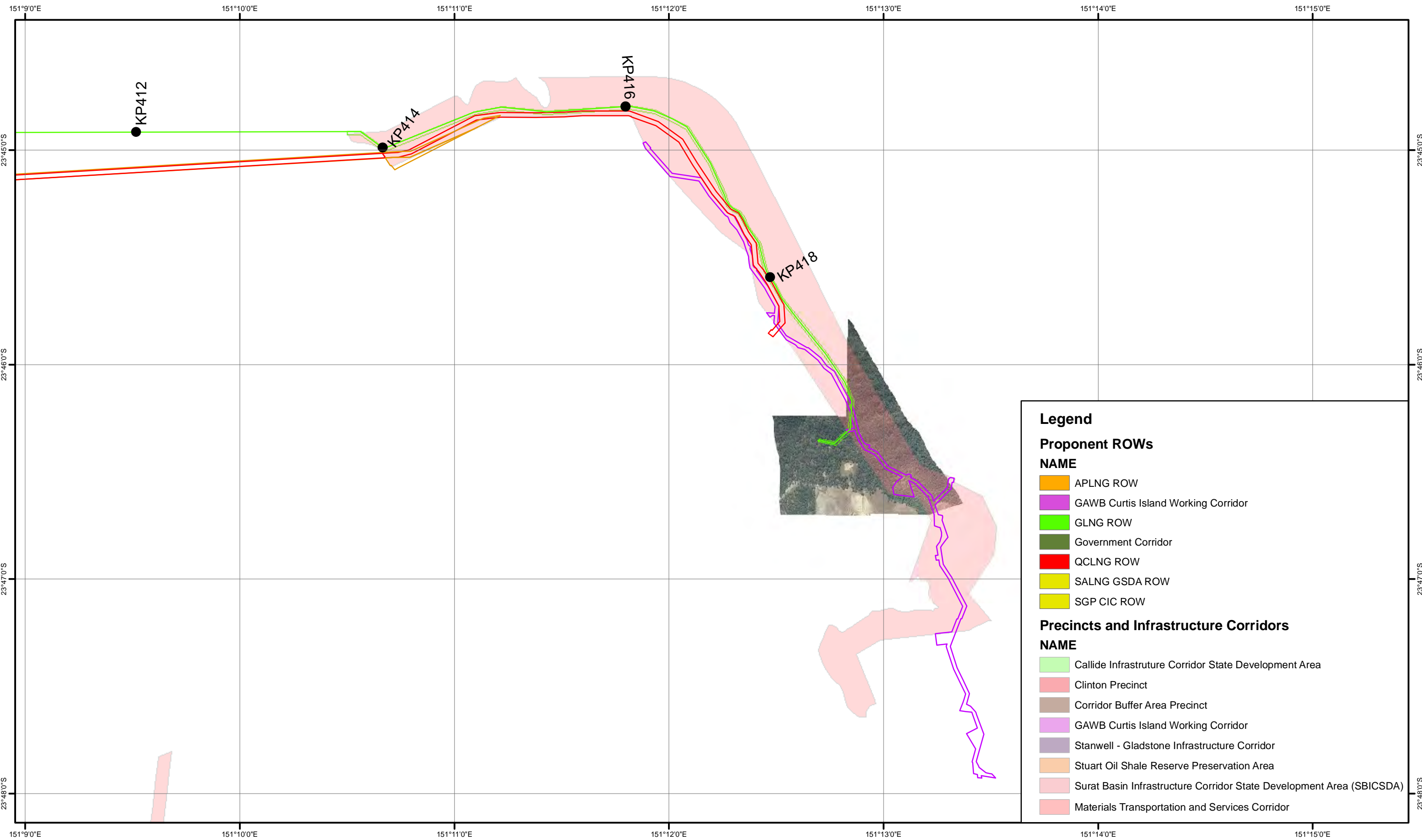
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Legend

Proponent ROWs

NAME


- APLNG ROW
- GAWB Curtis Island Working Corridor
- GLNG ROW
- Government Corridor
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