

BHP

Ministers North Derived Proposal

Terrestrial Fauna Environmental Management Plan

Ministerial Statement 1105

September 2025



Version Control

Version	Description	Key changes	Date
0a	Draft submitted for interna BHP review	-	04/07/2025
0b	Draft submitted to BNTAC for review.	New document	4/08/2025
1	Final draft EMP submitted to the EPA	Incorporated feedback from BNTAC	15/09/2025

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Abbreviations and Definitions

Term	Meaning
BC Act	<i>Biodiversity Conservation Act 2016</i> (Western Australia)
BHP	BHP Iron Ore Pty Ltd
BNTAC	Banjima Native Title Aboriginal Corporation
CEO	Chief Executive Officer of DWER
Clearing	As defined by Section 51A of the <i>Environmental Protection Act 1986</i> (WA)
DBCA	Department of Biodiversity, Conservation and Attractions
DWER	Department of Water and Environmental Regulation
EMP	Environmental Management Plan
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986</i> (Western Australia)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
GIS	Geographic Information System
m	metre
MEZ	Mining Exclusion Zone
mm/s	millimetres per second
OHP	Ore Handling Plant
OSA	Overburden Storage Area
PPV	peak particle velocity
ROM	Run of Mine

Executive Summary

Ministers North Terrestrial Fauna Environmental Management Plan	
Proposal	Ministers North
Proponent	BHP Iron Ore Pty Ltd
Ministerial Statement	Derived Proposal Request – Ministerial Statement 1105 – Pilbara Expansion Strategic Proposal
EMP Purpose	To meet the requirements of implementation conditions of Ministerial Statement 1105 for the Pilbara Expansion Strategic Proposal, being: <ul style="list-style-type: none"> • Condition 6 - Condition Environmental Management Plans • Condition 8 - Terrestrial Fauna Environmental Management Plan
Key Environmental Factors and EMP Objectives	Terrestrial Fauna <ul style="list-style-type: none"> • To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.
EMP Key Components	Refer to Section 2 <i>EMP Components</i> .
Proposed construction date	2026
EMP required Pre-construction	Yes, this EMP will be applicable for all activities for the Ministers North Derived Proposal request including clearing activities ahead of construction

1 Context, Scope and Rationale

1.1 Pilbara Expansion Strategic Proposal

BHP referred the Pilbara Expansion Strategic Proposal (Strategic Proposal) to the EPA under Part IV of the EP Act on 6 July 2012. Having devised a long-term mine development plan, BHP's aim was to consider a more regional approach to environmental management across all its current and future operations. The Strategic Proposal included new mining operations and future expansions to existing mining operations, and associated infrastructure and activities in the Pilbara. The EPA assessed the Strategic Proposal at the level of Public Environmental Review and published its report on 9 July 2018 (EPA Report 1619, EPA 2018).

The Minister for Environment issued Ministerial Statement 1105 (MS1105) for the Strategic Proposal on 11 July 2019. The Statement states that in the event that the EPA declares a future proposal as identified in EPA Report 1619 and described in Schedule 1 of MS1105 under section 38E to be a derived proposal, the derived proposal may be implemented, subject to the Minister for Environment's identification of relevant conditions under section 45B(3) from the conditions set out in the Statement. The area covered by the Strategic Proposal is identified by Figure 1-1.

The MS1105 approval provides a framework through which future proposals within BHP's Strategic Proposal area may be referred to EPA for assessment as a 'Derived Proposal'. The intent of the Terrestrial Fauna Environmental Management Plan is for the Ministers North Derived Proposal to meet the requirements of MS1105 Condition 8.

1.2 Ministers North Derived Proposal

The Ministers North Derived Proposal (Ministers North) is located within the boundary of the Strategic Proposal, positioned to the south of the existing Yandi Mining Operations, as identified by Figure 1-1. Ministers North was also identified within the environmental assessments of the Strategic Proposal by BHP (2016) and EPA (2018).

The Derived Proposal is positioned within a Development Envelope of 5,556.6 ha, with an Indicative Footprint of 2,360 ha (Figure 1-2). The Indicative Footprint requires clearing of 1,848 ha of native vegetation and 512 ha of existing cleared/ disturbed land.

Mining will be undertaken through standard open pit mining techniques (drill, blast, load, haul) with the extracted ore from the mine pits temporarily stockpiled, prior to transport of the ore to the existing Yandi Mining Operations for processing. Waste rock extracted from the Mine Pits will be disposed of through a combination of Overburden Storage Areas (OSA) and the in-pit backfilling of the Mine Pits.

Generally, the Derived Proposal includes the following main elements and activities:

- mining above the groundwater level in open mine pits.
- stockpiling of ore on a Run of Mine (RoM) pad (including mobile crushing units, if required) prior to transport of ore to the existing Yandi Mining Operations for processing.
- waste rock disposal to Overburden Storage Areas (OSA), and in-pit backfilling of the mine pits.
- transport corridor connecting Ministers North to the existing Yandi Mining Operations, including:
 - a dual lane Haul Road with an overpass over a third-party railway.
 - land bridge over Yandi Mine W5 pit (existing approved pit).

- a widening of an existing creek crossing over Marillana Creek watercourse and crossings of other minor watercourses (includes disturbance to watercourse bed/banks).
- infrastructure changes at the existing Yandi Ore Handling Plant (Yandi OHP, located at the Yandi Mining Operations) to accommodate the Brockman-type ore supply, including a new primary crusher at the Eastern Front End crushing facility.
- mine access roads to connect various mining infrastructure.
- borrow pits to supply civil construction works (roads, RoM).
- laydown areas for equipment storage and construction.
- stockpiles for cleared rehabilitation materials (topsoil, subsoil, vegetation).
- temporary and localised minor diversion of drainage lines / watercourses comprising earthworks, earthen bunds, swale drains and/or culverts.
- water supply pipelines including water storage (e.g. turkey's nest) and pump stations.
- various non-process infrastructure for purposes including but not limited to administration, workshops, warehouse/storage, vehicle parking, vehicle and equipment wash-down, fuel storage and transfer, explosives storage, power generation and transmission powerlines, pipelines, and communications.

A full description of the Ministers North proposal, and an assessment of the potential impacts to the recorded environmental values, is provided within the BHP (2025a) *Ministers North Derived Proposal Request*.

1.3 Terrestrial Fauna EMP

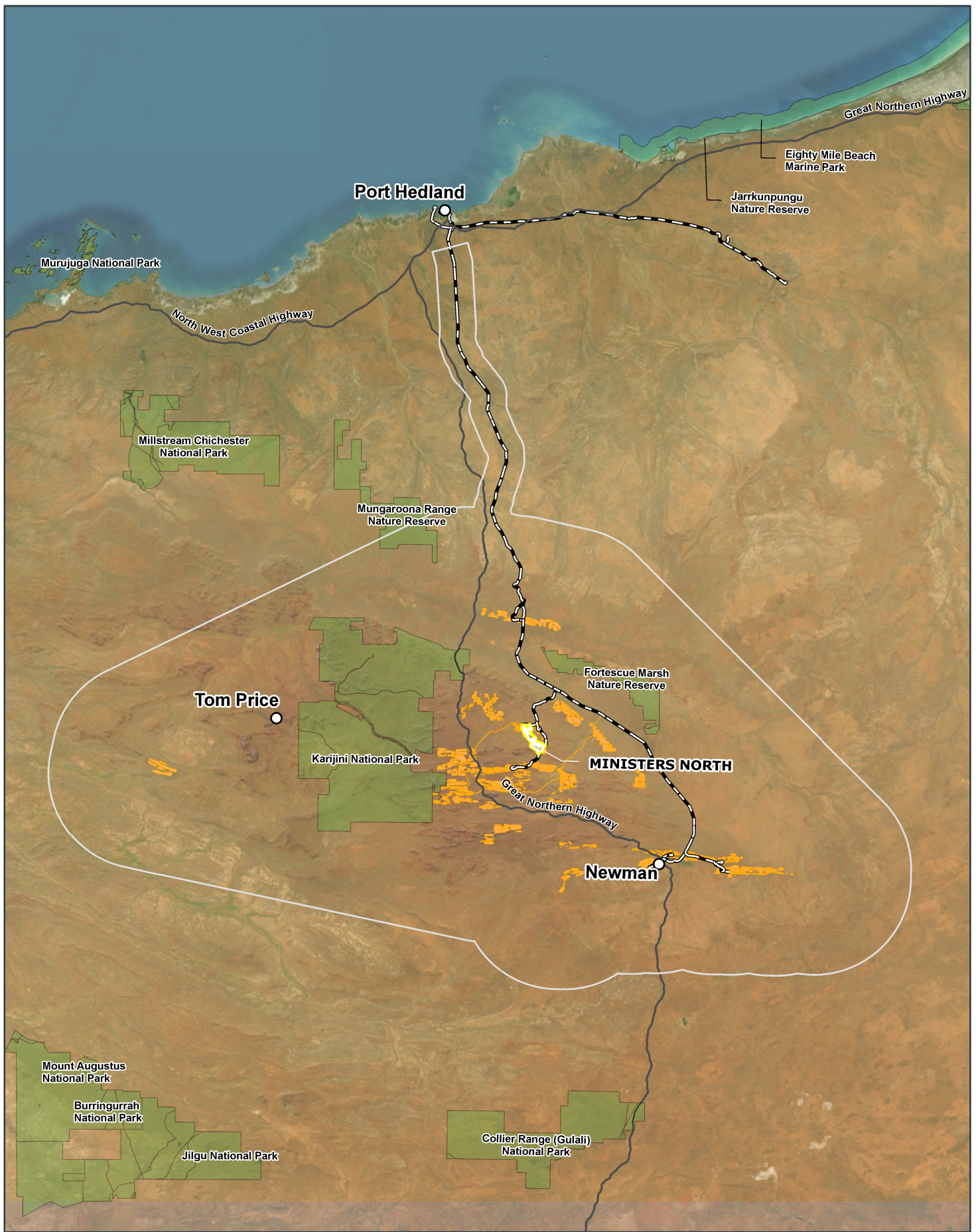
BHP has prepared this Terrestrial Fauna Environmental Management Plan (EMP) for Ministers North to meet the requirements of the implementation conditions for the Strategic Proposal under the MS1105 approval.

The intent for this EMP is to meet the requirements of the following implementation conditions:

- Condition 6 - Condition Environmental Management Plans.
- Condition 8 - Terrestrial Fauna Environmental Management Plan.

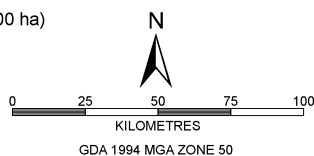
The scope of this EMP is the mining operations at Ministers North.

BHP has prepared this EMP to be consistent with the EPA (2024) document *Instructions: How to Prepare Environmental Protection Act 1986 Part IV Environmental Management Plans*.



Legend

- Development Envelope (5,557 ha)
- Indicative Footprint (2,360 ha)
- Strategic Proposal Area (7,650,074 ha)
- Strategic Proposal Full Conceptual Development Scenario (98,500 ha)
- Conservation Area
- Townsite
- Major Roads
- Rail (BHP)



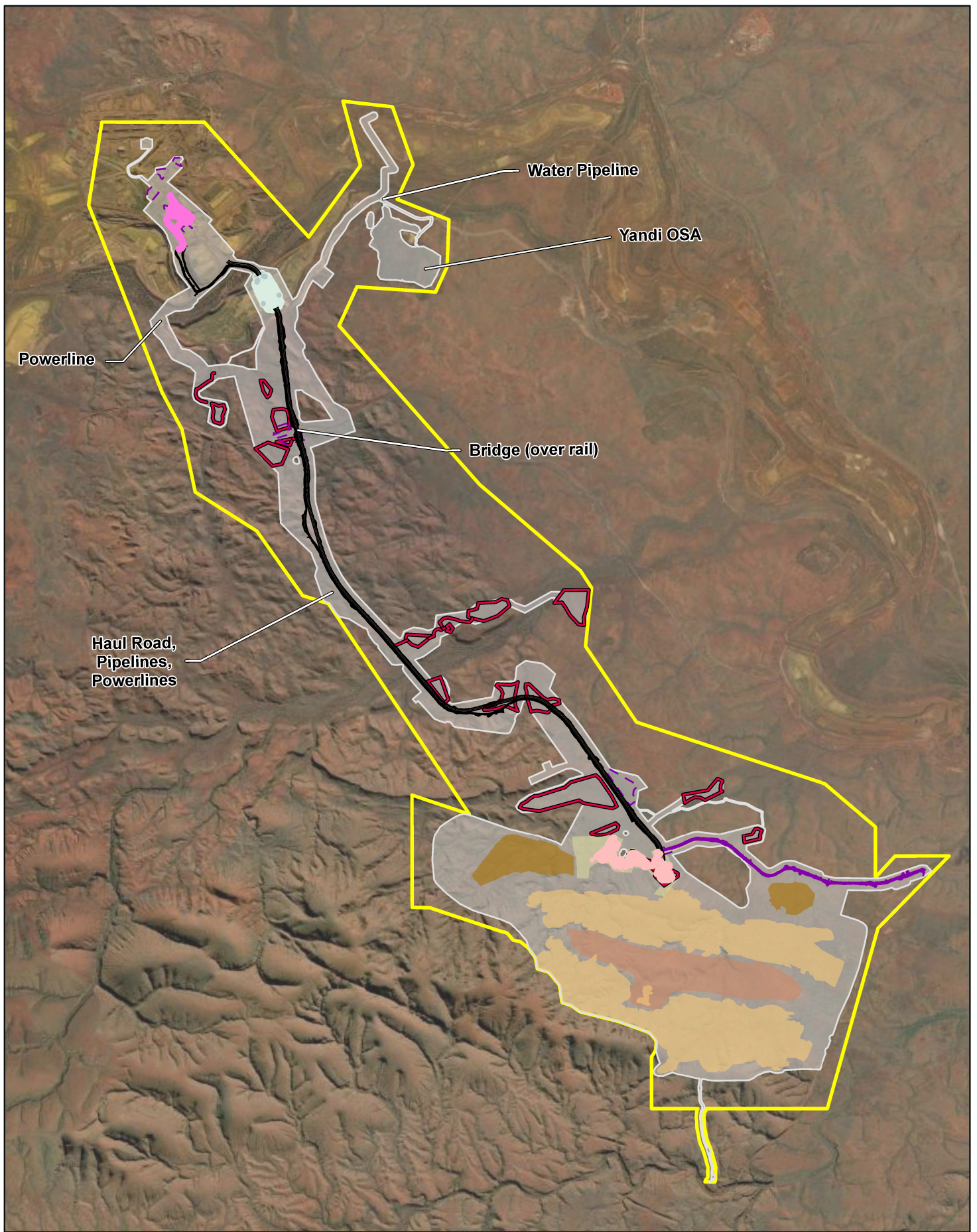
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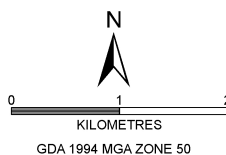
**MINISTERS NORTH
STRATEGIC PROPOSAL AND
MINISTERS NORTH DERIVED PROPOSAL**

WAIO PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:2,600,000	REQUESTOR:	PROJECTS	FIGURE:	1-1
DATE:	15/09/2025	PREPARED:	GEOMATICS	NO:	A1317-007 RevG
		REVIEWED:			



- Legend**
- Development Envelope (5,557 ha)
 - Indicative Footprint (2,360 ha)
 - Indicative Mine Layout**
 - Non-Process Infrastructure
 - Stockpile
 - OSA
 - Pit
 - Non Process Infrastructure Layout
 - Borrow Pits
 - Road
 - Pipelines Access Road



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**MINISTERS NORTH
DEVELOPMENT ENVELOPE AND
INDICATIVE FOOTPRINT**

WAIO- PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4: 1:70,000 REQUESTOR: PROJECTS FIGURE: 1-2
 DATE: 15/09/2025 PREPARED: GEOMATICS
 REVIEWED: NO: A1317-003 RevK

1.4 Key Environmental Factors

The 'Key Environmental Factor' relevant to this EMP is 'Terrestrial Fauna'.

Table 1-1 describes the environmental values, proposal activities and potential impacts to terrestrial fauna values addressed in this EMP.

Table 1-1: Key environmental values, proposal activities and potential impacts

Key Environmental Factor	Environmental Values	Proposal Activities	Actual / Potential Impacts
Terrestrial Fauna	Conservation significant terrestrial vertebrate fauna	Clearing of native vegetation (fauna habitat) for mining operations within the Development Envelope	<p>Direct impacts</p> <ul style="list-style-type: none"> Clearing of up to 1,848 ha of native vegetation (fauna habitat), including removal of fauna habitats suitable for conservation significant native fauna <p>Indirect impacts</p> <ul style="list-style-type: none"> Loss of fauna taxa (mortality) during native vegetation clearing, including vertebrate fauna and invertebrate fauna Habitat clearing can enhance the ability of feral predators to move through the landscape and prey on native fauna.
		Mining operations e.g. mine pit blasting (noise and vibration), vehicle movements (interaction with fauna), infrastructure (e.g. barbed wire) within the Development Envelope	<p>Indirect impacts</p> <ul style="list-style-type: none"> Potential for vibration and/or noise to impact individuals of Ghost Bat <i>Macroderma gigas</i> (EPBC-V, BC-V) occupying two (2) 'Category 3' roosts (caves) located in proximity to the mining operations Potential for vibration resulting in physical damage (structural collapse) of a 'Category 3' Ghost Bat roost (cave) positioned within 500 metres (m) of the northern Mine Pit Potential exists for fauna taxa to interact with mining areas and infrastructure (including barbed wire and vehicles).
		Waste and water management within the Development Envelope	<p>Indirect impacts</p> <ul style="list-style-type: none"> Operations may attract native and introduced fauna (e.g. attracted to domestic waste, artificial water sources etc.).

1.5 Condition Requirements

The following conditions for the Strategic Proposal under the MS1105 approval are relevant to Ministers North:

- Condition 6 – Condition Environmental Management Plans.
- Condition 8 – Terrestrial Fauna Environmental Management Plan.

In accordance with Condition 6-1, this EMP has been submitted prior to ground-disturbing activities, and within six (6) months from the date of issue of the Section 45A Notice, to demonstrate that the environmental objectives specified in the conditions referred to in the Section 45A Notice for the proposal will be met. In accordance with Condition 6-4 (2), BHP will continue to implement this EMP until the CEO has confirmed by notice in writing that BHP has demonstrated the objectives specified in the relevant conditions referred to in the Section 45A Notice for the proposal have been met.

BHP has provided the condition requirements of Conditions 6-2, 6-3 and 6-5 to 6-7 in the provisions table (Table 2-1, Table 2-2 and Table 3-1) in *EMP Components (Section 2) and Reporting (Section 3)*, which the EPA (2024) guidance allows for, where there are multiple conditions and/or condition clauses.

Condition 6-8 and 6-9 requirements are addressed in *EMP Adaptive Management (Section 4)*.

The relevant sub-clauses of Condition 8 and how they are addressed within this EMP is outlined in Table 1-2.

Table 1-2: Ministerial Statement 1105 Condition 8

Condition	Applicable to this EMP?	EMP Section
8 Terrestrial Fauna Environmental Management Plan		
8-1 The proponent shall manage the implementation of the Proposal to meet the following environmental objective: (1) protect terrestrial fauna so that biological diversity and ecological integrity are maintained, and in particular: (a) maintain the local and regional populations of terrestrial fauna taxa that are listed as threatened or specially protected under the relevant legislation; (b) avoid and minimise direct and indirect impacts on the habitat of terrestrial fauna that is specially protected under the relevant legislation; (c) avoid and minimise direct and indirect impacts on terrestrial fauna listed as priority fauna, and its habitat; and (d) avoid and minimise direct and indirect impacts on conservation significant short-range endemic fauna.	Yes	Section 2
	Yes	Section 2
	Yes	Section 2
	Yes	Section 2
	No	N/A
8-2 The proponent shall prepare a Terrestrial Fauna Management Plan required by condition 6-1 that satisfies the requirements of condition 6-2, to meet the objectives specified in condition 8-1, in consultation with the agency responsible for administration of the Wildlife Conservation Act 1950 and the Biodiversity Conservation Act 2016.	Yes	This EMP
8-3 The Terrestrial Fauna Management Plan required by condition 6-1 shall include provisions required by condition 6-2 to address impacts on conservation significant fauna, where relevant, including from, but not limited to: loss of habitat; changes to surface water regimes; risk of vehicle strikes; changes to fire regimes; emissions of dust ¹ , light and noise; and impacts from feral animals.	Yes	Section 2
8-4 The proponent shall continue to implement the version of the Terrestrial Fauna Management Plan most recently approved by the CEO until the CEO has confirmed by notice in writing that the plan required by condition 6-1 satisfies the requirements of condition 6-2 to meet the objectives specified in condition 8-1.	Yes	Section 4

Condition 5 of the MS1105 approval requires BHP to make this EMP publicly available. To meet this requirement, BHP will publish the EMP on the BHP website as soon as reasonably practicable following endorsement of the EMP by the CEO. Further, the endorsed EMP will be made available to stakeholders, including members of the public, upon request. BHP considers these actions will meet the requirements of Condition 5.

¹ Management of dust is outside of the scope of this EMP. BHP has prepared a separate Air Quality EMP which aims to manage dust and as such, management of dust is excluded from this EMP to avoid duplication.

1.6 Rationale and Approach

As outlined by the EPA (2024) guidance document *Instructions: How to Prepare Environmental Protection Act 1986 Part IV Environmental Management Plans*, this section provides a description of the rationale and approach for the components of this EMP.

1.6.1 Management Approach

BHP has applied a risk-based approach to identify and prioritise the components of this EMP. The purpose of the components is to protect the environmental values identified in Table 1-1. In developing the components, BHP has used available scientific information from surveys / studies and has applied learnings from the management of terrestrial fauna at other BHP mining operations and third-party mining operations in the Pilbara region.

At the site level and prior to any ground disturbance activities, BHP implements an internal ground disturbance permit system to ensure that any legislative and regulatory requirements associated with the environment, Aboriginal cultural heritage and land tenure relevant to the area, are met.

1.6.2 Rationale

Table 1-3 describes the rationale for the EMP components identified in Section 2, including:

- Management objectives
- Survey / study findings
- Key assumptions and uncertainties
- Rationale for choice of management actions.

Figure 1-3 identifies the fauna habitats identified by the biological surveys/studies, with Figure 1-4 identifying the location of fauna taxa recorded by the biological surveys/studies. Figure 1-5 identifies the proposed Mining Exclusion Zone (MEZ) and the 500 m Blast Management Zone for the protection of Category 3 Ghost Bat roosts and supporting habitat. Figure 1-6 identifies the proposed 10 m avoidance buffers of identified Western Pebble-mound Mouse mounds. Figure 1-7 and Figure 1-8 provide photographs of the entrance for each of the Category 3 Ghost Bat roosts as a visual identification reference to assist with environmental monitoring.

Table 1-3: Rationale for EMP components

Surveys / Studies	Survey / Study Findings	Key Assumptions and Uncertainties	Risk-based Approach and Indicators / Management Actions Rationale
<p>Environmental Value: Terrestrial fauna with specific consideration of conservation-significant fauna.</p> <p>EMP Objective: Minimise direct and indirect impact to fauna habitat and native fauna individuals.</p>			
<p>The surveys / studies used to inform the EMP are summarised in Appendix 1.</p> <p>The biological surveys include 'desktop' literature reviews and field-based 'detailed' and 'targeted' survey methodologies.</p> <p>The biological surveys were undertaken by suitably qualified and experienced environmental professionals in the survey and identification of vertebrate and invertebrate terrestrial fauna for the bioregion.</p> <p>Each of the biological surveys conform to the relevant survey guidance requirements that were applicable to the type of survey completed.</p> <p>The more recent biological surveys have also been undertaken in accordance with the BHP (2023) Vertebrate Fauna Surveys in Western Australia: Procedure and the BHP (2022) Short-range Endemic Invertebrate Fauna Assessment Methods: Technical Process Instruction.</p>	<p>Fauna Values</p> <ul style="list-style-type: none"> • 13 fauna habitat types have been mapped within the Development Envelope, comprising: <ul style="list-style-type: none"> ○ Hillcrest / Hillslope ○ Undulating Low Hills ○ Gorge / Gully ○ Breakaway / Cliff ○ Boulders / Rockpiles . ○ Drainage Area / Floodplain ○ Minor Drainage Line ○ Medium Drainage Line ○ Major Drainage Line ○ Mulga Woodland ○ Sand Plain ○ Sandy / Stony Plain ○ Wetland. • One vertebrate fauna listed as Vulnerable under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth) (EPBC Act) and the State <i>Biodiversity Conservation Act 2016</i> (WA) (BC Act) has been recorded within the Development Envelope, being the Ghost Bat (<i>Macroderma gigas</i>). <p>'Critical Habitat' for the Ghost Bat is considered to comprise the fauna habitats of Gorge / Gully and Breakaway / Cliffs. 'Supporting Habitat' for the Ghost Bat is considered to comprise the fauna habitats of Mulga Woodland, Sand Plain, Stony Plain, Drainage Area / Floodplain, Major Drainage Line and Minor Drainage Line.</p> <p>In addition, roosting habitat is categorised as either critical or supporting habitat. Category 1 and Category 2 roosts are considered critical habitat. Category 3 roosts are generally considered supporting habitat, except when adjacent to one or more Category 2 roosts, then they are considered critical roosting habitat. Category 4 roosts are considered supporting habitat.</p> <p>Individuals of Ghost Bat are known to occupy two (2) 'Category 3' roosts (caves) located within the Development Envelope in proximity to the mining operations. Individuals of Ghost Bat may also utilise a number of identified surface water features in proximity to the occupied roosts as a water source.</p> <ul style="list-style-type: none"> • Two additional Threatened Fauna have been recorded in close proximity (within 150 m) to the Development Envelope: 	<p>Assumptions</p> <ul style="list-style-type: none"> • This EMP focuses on the terrestrial fauna values, as identified during the environmental assessment of Ministers North, requiring targeted management. • In consideration of the survey / study effort, it is reasonable to believe that terrestrial fauna values have been appropriately identified and quantified. • Consistent with the environmental assessment for Ministers North, the Ghost Bat will require specific avoidance, management and monitoring actions. <p>The application of buffer distances between mining operations from Ghost Bat roosts will minimise the risk of indirect impact from noise and vibration. For 'Category 3' roosts the cave buffer distances applied are:</p> <ul style="list-style-type: none"> ○ 100 m exclusion for any land disturbance. ○ 500 m for blast vibration management measures of Mine Pits. <p>Control of indirect effects of blasting (noise and vibration) can be appropriately monitored through vibration only (as measured by peak particle velocity (PPV)), noting that monitoring of noise can be inconsistent due to the influence of other variables (e.g. wind speed). Bat Call WA (2021) recommends noise monitoring only for Category 1 and Category 2 roosts (noise monitoring not considered necessary for Category 3 or Category 4 roosts). It is assumed that control/reduction of vibration will also achieve an appropriate control/reduction of noise.</p> <p>It is assumed that the selected vibration trigger criteria and threshold criteria are appropriate as early warning indicators for cave protection. The trigger criteria of 15 mm/s is based on Bat Call WA (2022) as a conservative limit at which changes in bat behaviour may be detected. The threshold criteria of 20 mm/s is based on BHP WAIO's Operational Heritage Management Plan, being a level considered appropriate to protect caves with a 'moderate' geotechnical sensitivity. BHP's adaptive management approach enables the levels to be revised subject to the monitoring results.</p> <p>Uncertainties</p> <ul style="list-style-type: none"> • Like many native fauna taxa, Ghost Bat local presence and abundance can be expected to naturally vary between seasons and years as a result of multiple environmental factors (e.g. rainfall, abundance of prey). 	<p>Type of Components</p> <ul style="list-style-type: none"> • In accordance with Condition 8, this EMP shall include components required by Condition 6 to address the impacts to terrestrial fauna values. • BHP has chosen both outcome-based and objective-based components to address the requirements of Condition 6 and meet the objectives specified in Condition 8. • The combination of objective-based components and outcome-based components together is considered most likely to achieve the best outcomes for the protection, management and monitoring of terrestrial fauna values. <p>Rationale for Choice of Management Actions</p> <ul style="list-style-type: none"> • The key impact to terrestrial fauna values is the potential for direct and indirect impacts to individuals of Ghost Bat that occupy two (2) 'Category 3' roosts located within the Development Envelope in proximity to the mining operations. Management actions listed in Table 2-1 for Ghost Bats target: <ul style="list-style-type: none"> ○ Exclusion of direct impact to the roosts and immediately surrounding fauna habitat through implementation of a Mining Exclusions Zone (MEZ) ○ Management of blasting (noise and vibration) within 500 m of Category 3 roosts (identified by a Blast Management Zone). • Other fauna taxa will be appropriately managed through general actions applicable to fauna within this EMP. • Management of dust is outside of the scope of this EMP. BHP has prepared a separate Air Quality EMP which aims to manage dust and as such, management of dust is excluded from this EMP to avoid duplication.

Surveys / Studies	Survey / Study Findings	Key Assumptions and Uncertainties	Risk-based Approach and Indicators / Management Actions Rationale
	<ul style="list-style-type: none"> ○ Northern Quoll (<i>Dasyurus hallucatus</i>) listed as Endangered under the BC Act and EPBC Act ○ Pilbara Olive Python (<i>Liasis olivaceus barroni</i>). listed as Vulnerable under the BC Act and EPBC Act. • A number of other fauna taxa of conservation significance occur, or have the potential to occur, within the Development Envelope and surrounds, being: <ul style="list-style-type: none"> ○ Peregrine Falcon <i>Falco peregrinus</i> (BC-SPS) ○ Pilbara Flat-headed Blind Snake <i>Anilius ganei</i> (DBCA-P1) ○ Western Pebble-mound Mouse <i>Pseudomys chapmani</i> (DBCA-P4) ○ Chocolate Wattled Bat <i>Chalinolobus morio</i> (locally significant). 		