

2 EMP Components

BHP has provided detail of the EMP components in Table 2-1 Table 2-2 and Table 3-1, as per the preferred approach outlined in the EPA (2024) guidance document *Instructions: How to Prepare Environmental Protection Act 1986 Part IV Environmental Management Plans*.

Table 2-1: Outcome-based provisions

Purpose: To meet the requirements of Condition 6 and the objectives specified in Condition 8 of the MS1105 approval.

Rationale: Specified environmental outcomes relating to the Ghost Bat will be used to achieve the environmental objectives specified in Condition 8 of the MS1105.

EPA Factor and Objective:	Terrestrial Fauna - "To protect terrestrial fauna so that biological diversity and ecological integrity are maintained" (EPA 2023)
Key Environmental Values:	Conservation significant fauna - Ghost Bat <i>Macroderma gigas</i> (EPBC-V, BC-V) habitat.
Outcome-based Objectives	Category 3 Ghost Bat caves within the Development Envelope are retained.
Key Impacts and Risks:	Impacts and risks to Ghost Bat <i>Macroderma gigas</i> (EPBC-V, BC-V) Category 3 Ghost Bat caves from ground vibration caused by blasting.

Outcome-based Components			
Trigger and Threshold Criteria	Actions to be implemented in the event of a Trigger Criteria or Threshold Criteria exceedance	Monitoring (to determine if Trigger Criteria and Threshold Criteria have been exceeded)	Reporting of Monitoring Results
Ghost Bat Roost Blast Management Zone			
<p>Trigger Criteria: No blasting within the 500 m radius Blast Management Zone (Figure 1-5) around 'Category 3' Ghost Bat roost CMN-02 without the following controls in place:</p> <ul style="list-style-type: none"> Inspect the cave for baseline structural condition before the first blast event within the Blast Management Zone and record the inspection ('one-off' inspection). Follow up annual² cave structural condition inspections. Ground vibration monitor installed at the cave. 	<ul style="list-style-type: none"> Refer to contingency actions for Threshold Criteria. 	<p>Site Environmental Superintendent (or delegate) to ensure that cave inspections are complete and monitoring equipment is in place.</p>	<p>Cave inspection reports, equipment monitoring records and blast logs/records.</p>
<p>Trigger Criteria: Vibration limit ≥ 15 mm/s PPV at the cave entrance (CMN-02).</p>	<ul style="list-style-type: none"> Report (Table 3-1) and investigate the exceedance. Review vibration monitoring data. Refine the drill and blast tactical plan (blast design parameters, scheduling and sequencing) to reduce vibration levels and continue blasting. 	<p>The Site Environmental Superintendent (or delegate) is responsible for ensuring ground vibration data is monitored during each blast event and that the data is assessed to determine if the trigger criteria has been exceeded, and for ensuring that monitoring data records are kept.</p>	<p>Ground vibration monitoring records, blast logs//records, and any incident reports and investigations.</p>
<p>Threshold Criteria: Vibration limit ≥ 20 mm/s PPV at the cave entrance (CMN-02).</p>	<ul style="list-style-type: none"> Complete the Trigger Criteria response actions, and the following threshold contingency actions: Visually inspect the cave for structural condition and record the inspection. Assess if there has been a material change in the structural condition of the cave. If there has been a material change, prepare and implement an action response plan³ prior to any further blasting. 	<p>The Site Environmental Superintendent (or delegate) is responsible for ensuring ground vibration data is monitored during each blast event and that the data is assessed to determine if the threshold criteria has been exceeded, and for ensuring that monitoring data records are kept.</p>	<p>Ground vibration monitoring records, blast logs//records, cave structural condition report, and any incident reports and investigations.</p>

² An annual assessment period has been selected to minimise the risk of disturbance to Ghost Bats. It is acknowledged that frequent visitation may cause Ghost Bats to flee a roost, either temporarily or permanently. Accordingly, an annual assessment period provides an appropriate balance between the collection of information/data and the risk that the visitation for the information collection may affect Ghost Bat roost occupancy.

³ Ensure BHP Heritage Team has been engaged in any response plan.

Table 2-2: Objective-based Components

Purpose: To meet the requirements of Condition 6 and the objectives specified in Condition 8 of the MS1105 approval.

Rationale: Specified environmental objectives to meet the intent of Condition 8 of the MS1105 approval, as it is not possible to specify practical environmental outcomes.

EPA Factor and Objective:	Terrestrial Fauna - "To protect terrestrial fauna so that biological diversity and ecological integrity are maintained" (EPA 2023)
Key Environmental Values:	Conservation significant fauna
EMP Objectives	Minimise the risk of direct and indirect impact to conservation significant fauna individuals and habitat
Key Impacts and Risks:	Impacts and risks to conservation significant fauna within the Development Envelope from mine construction and operational activities.

Objective-based Components			
Risk-based Management Actions	Measurable Management Targets to determine the effectiveness of the Risk-based Management Actions	Monitoring to measure the effectiveness of Management Actions against Management Targets	Verification and Reporting (refer to Table 3-1 for DWER management action and target 'non-conformance' reporting and annual compliance reporting requirements)
Induction containing environmental awareness information in place.	Personnel complete the site induction.	Site access control system monitors induction status.	Online induction records and reports.
Light vehicle speed limits restricted on unsealed access roads, and speed limit signage installed, to minimise vehicle-strike risks to conservation significant fauna.	No light vehicle-related mortality involving conservation significant fauna on unsealed access roads.	Site inspections to verify speed limit signage. Reported light vehicle fauna strike incidents.	Inspection records, and internal incident records
Turkey's nests fenced to exclude livestock and fauna egress points installed (for operational, long-term turkey's nests) to minimise entrapment risks.	No mortality of conservation significant fauna as a result of entrapment within turkey's nests.	Site inspections to verify fencing and egress points. Reported fauna entrapment incidents.	Inspection records, and internal incident records
Targeted feral cat control program implemented to reduce predation impacts on conservation significant fauna.	Feral cat control program implemented in accordance with the program.	Annual assessment of feral cat sightings and the feral animal control program implementation status.	Feral cat sighting records, annual assessment and evidence of participation in any feral cat control programs.
Minimise the risk of injury or mortality to Ghost Bats from entanglement in barbed wire fences by ensuring: <ul style="list-style-type: none"> No new barbed wire fencing installed, unless required by legislation. Where new barbed wire fencing is required by legislation, bat reflectors or other mitigation device installed. 	No Ghost Bat entanglement mortality in new fences.	Reported Ghost Bat entanglement incidents	Internal incident records
No new land disturbance within the Ghost Bat MEZ boundary (Figure 1-5) to protect two Category 3 Ghost Bat roosts (CMN-02 and CMNY-05) and fauna habitat.	No new clearing in the MEZ.	Site inspections during construction to check land disturbance near the MEZ. Reported incidents of MEZ disturbance. Land clearing monitored via quarterly land clearing data and annual land disturbance reconciliation process (spatial footprint and hectares) to identify any land disturbance within the MEZ.	Site inspection records, internal event reporting and investigations, annual land disturbance reconciliation process results, and internal ground disturbance permits.
Implement a pre-disturbance protocol prior to disturbing a Category 4 Ghost Bat roost (CMN-07, CMN-09, CMNY-01, CMIN-01, CMN-05, CMN-06), which must include: <ul style="list-style-type: none"> Roost inspection prior to disturbance to confirm bat absence/presence. If present, a reasonable effort to displace the bats using approved displacement methods. 	No Ghost Bat mortality during a roost disturbance activity.	Completed Ghost Bat roost pre-disturbance protocol checklist. Reported Ghost Bat mortalities from roost disturbance activities.	Completed roost pre-disturbance protocol checklist and internal incident reports.

Objective-based Components			
Risk-based Management Actions	Measurable Management Targets to determine the effectiveness of the Risk-based Management Actions	Monitoring to measure the effectiveness of Management Actions against Management Targets	Verification and Reporting (refer to Table 3-1 for DWER management action and target 'non-conformance' reporting and annual compliance reporting requirements)
Minimise impacts to Western Pebble-mound Mouse mounds outside the Indicative Footprint by implementing a 10 m radius avoidance buffer (exclusion zones) around mounds located within the Development Envelope as shown on Figure 1-6.	No land disturbance within 10 m of the Western Pebble-mound Mouse mounds shown on Figure 1-6.	Avoidance condition included in BHP's internal ground disturbance permits (for any work near the exclusion zones). Reported incidents of buffer disturbance. Land clearing monitored via the annual land disturbance reconciliation process (spatial footprint and hectares) to identify any unauthorised clearing within avoidance buffers.	Granted internal ground disturbance permits, internal incident reports and annual environment report (detailing land clearing for the previous financial year).

3 Reporting

BHP must report to the CEO in accordance with Ministerial Statement 1105 when Management Actions are not implemented, Management Targets are not achieved, Trigger or Threshold Criteria are exceeded, or on detection of other non-conformances, as detailed in Table 3-1.

Table 3-1: Regulatory reporting requirements

Action or Criteria	Reporting Time	Condition	Condition Details
Non-achievement of a Management Target.	Report the non-achievement in writing to the DWER CEO within twenty-one (21) days of the non-achievement being identified.	Condition 6-5	<p>If monitoring, tests, surveys or investigations indicate non-achievement of management target(s) specified in a Condition Environmental Management Plan(s), the proponent shall:</p> <p>(1) report the non-achievement in writing to the CEO within twenty-one (21) days of the non-achievement being identified;</p> <p>(2) investigate to determine the cause of the management target(s) not being achieved;</p> <p>(3) provide a report to the CEO within ninety (90) days of the nonachievement being reported as required by condition 6-5(1). The report shall include:</p> <p>(a) the cause(s) of the management targets not being achieved;</p> <p>(b) the findings of the investigation required by condition 6-5(2);</p> <p>(c) details of revised and/or additional management actions to be implemented to prevent non-achievement of the management target(s); and</p> <p>(d) relevant changes to proposal activities.</p>
Management Action not implemented.	Report the failure to implement the management action in writing to the CEO within seven (7) days of identification.	Condition 6-6	<p>If monitoring, tests, surveys or investigations indicate that one or more management actions specified in a Condition Environmental Management Plan(s) has not been implemented, the proponent shall:</p> <p>(1) report the failure to implement the management action(s) in writing to the CEO within seven (7) days of identification;</p> <p>(2) investigate to determine the cause of the management action(s) not being implemented;</p> <p>(3) investigate to determine the potential environmental harm or alteration of the environment that occurred due to the failure to implement the management action(s);</p> <p>(4) provide a report to the CEO within twenty-one (21) days of the reporting required by condition 6-6(1). The report shall include:</p> <p>(a) the cause of the failure to implement the management actions;</p> <p>(b) the findings of the investigations required by conditions 6-6(2) and 6-6(3);</p> <p>(c) relevant changes to proposal activities; and</p>

Action or Criteria	Reporting Time	Condition	Condition Details
			(d) measures to prevent, control or abate the environmental harm which may have occurred.
Trigger Criteria and/or Threshold Criteria exceedance.	Report the exceedance in writing to the CEO within seven (7) days of the exceedance being identified;	Condition 6-6	<p>In the event that monitoring, tests, surveys or investigations indicates exceedance of trigger criteria and/or threshold criteria specified in a Condition Environmental Management Plan(s), the proponent shall:</p> <p>(1) report the exceedance in writing to the CEO within seven (7) days of the exceedance being identified;</p> <p>(2) immediately implement the trigger level actions and/or threshold contingency actions specified in the Condition Environmental Management Plan(s) and continue implementation of those actions until the trigger criteria and/or threshold criteria are being met and implementation of the trigger level actions and/or threshold contingency actions are no longer required;</p> <p>(3) investigate to determine the cause of the trigger criteria and/or threshold criteria being exceeded;</p> <p>(4) identify additional measures required to prevent the trigger criteria and/or threshold criteria being exceeded in the future;</p> <p>(5) investigate to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; and</p> <p>(6) provide a report to the CEO within ninety (90) days of the exceedance being reported. The report shall include:</p> <p>(a) details of any trigger level actions or threshold contingency actions implemented;</p> <p>(b) the effectiveness of the trigger level actions or threshold contingency actions implemented, monitored and measured against trigger criteria and threshold criteria</p> <p>(c) the findings of the investigations required by conditions 6-7(3) and 6-7(5);</p> <p>(d) additional measures to prevent the trigger or threshold criteria being exceeded in the future; and</p> <p>(e) measures to prevent, control or abate the environmental harm or alteration of the environment which may have occurred.</p>
Annual compliance reporting	Annually by 1 October each year	Condition 4-6	The proponent shall submit to the CEO a Compliance Assessment Report annually by 1 October each year addressing compliance in the previous financial year, or as otherwise agreed in writing by the CEO. In accordance with sub-clause (2), the report shall identify all potential

Action or Criteria	Reporting Time	Condition	Condition Details
			non-compliances and describe corrective and preventative actions taken. Condition 6-3, the failure to implement one or more management actions, the exceedance of a threshold criteria (regardless of whether threshold contingency actions have been or are being implemented in accordance with condition 6-7(2)), and/or comply with the requirements of a Condition Environmental Management Plan(s) represents non-compliance with these conditions.

4 EMP Adaptive Management and Review

4.1 Adaptive Management Approach

BHP applies an 'Adaptive Management Framework' for implementing management measures identified in this EMP; being an approach consistent with the EPA (2024) guidance document *Instructions: How to Prepare Environmental Protection Act 1986 Part IV Environmental Management Plans*. Adaptive management is a structured, iterative process to decision making. BHP's framework embeds a cycle of monitoring, reporting and implementing change where required. The framework allows for an evaluation of the management and mitigation measures so that they are progressively improved and refined, or alternative solutions adopted, in order to ensure that the environmental objectives and outcomes within the EMP are achieved. The key steps of BHP's adaptive management approach are depicted in Figure 4-1.

As this EMP is a requirement of the MS1105 implementation conditions, where BHP identifies that this EMP should be revised arising from information gained through the adaptive management approach, BHP will seek the endorsement of the CEO prior to the implementation of the revised EMP.

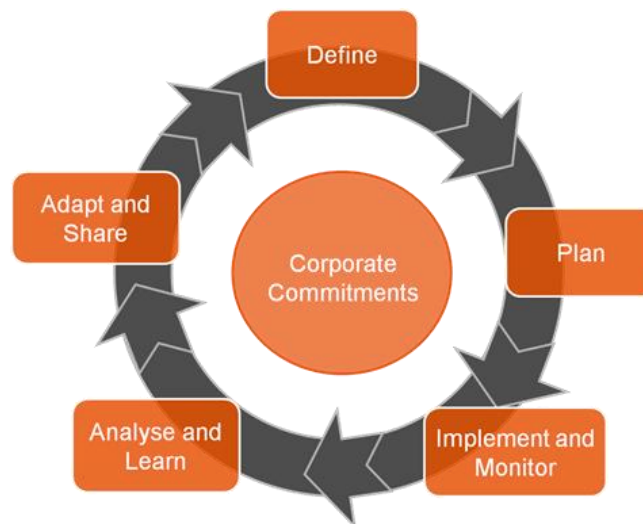


Figure 4-1: BHP's adaptive management approach

4.2 Review and Revision of this EMP

BHP will review this EMP (and revise the EMP, if required), to ensure that it achieves the identified environmental objectives and meets the implementation condition requirements of the MS1105 approval.

A review by BHP may arise from the following:

- Where initiated by BHP to revise management actions or changes to proposal activities if management targets are not being achieved, as required by Condition 6-2 (13).
- Where initiated by BHP as part of the adaptive management process, as permitted by Condition 6-8(1).
- Where directed by the CEO in accordance with Condition 6 of the MS1105 approval (Condition 6-8(2)).

- If triggered by an outcome from implementation of this EMP (e.g. if management targets are not achieved and/or management actions not implemented).

Changes to this EMP may arise from the following:

- Government publishes new or amend guidance/policy relevant to this EMP.
- BHP proposes to add and/or amend EMP components following a change to the Proposal (mining operations) and/or the implementation conditions.
- The CEO confirms by notice in writing that it has been demonstrated that the objective and/or outcome in the relevant condition is being met (and will continue to be met) and therefore certain requirements within this EMP are no longer required to be implemented.

In accordance with Condition 6-9, BHP will implement the latest revision of this EMP, which the CEO has confirmed by notice in writing, satisfies the implementation condition requirements.

5 Stakeholder Consultation

In accordance with Condition 6 and Condition 8 of the MS1105 approval, BHP has prepared this EMP to meet the objectives specified in Condition 8.

As part of the mine planning and environmental assessment processes for Ministers North, BHP has consulted with key stakeholders on the environmental values relevant to this EMP, notably including:

- Environmental Protection Authority
- Department of Water and Environmental Regulation (DWER)
- Banjima People (via the Banjima Native Title Aboriginal Corporation (BNTAC)).

Table 5-1 provides a summary of consultation undertaken by BHP with key stakeholders on the environmental values relevant to this EMP.

BHP will continue to consult with Government agencies and the Banjima People, where relevant, in relation to the implementation (and revision) of this EMP.

Table 5-1: Stakeholder consultation

Stakeholder	Date	Items Discussed	BHP Response and Outcome
Environmental Protection Authority (EPA) (includes EPA Services division of DWER)	August 2025	Pre-referral discussion introducing the Derived Proposal and key environmental factors, including Terrestrial Fauna.	BHP considered feedback provided during the engagement in relation to Terrestrial Fauna including short range endemic (SRE) fauna, opportunity to protect areas not required for mining, and conditional management plans. BHP will continue to engage with the EPA on conditional management plan requirements.
Banjima People (via Banjima Native Title Aboriginal Corporation (BNTAC))	August 2025	BNTAC provided comments on the Draft Terrestrial Fauna EMP (Version 0b). Comments related to the frequency of feral animal control programs, artificial lighting, vehicle speeds, the Ghost Bat mining exclusion zone and blast management zone (including vibration trigger and threshold criteria, weed management, and compliance inspections.	BHP is preparing a detailed response to BNTAC comments and has updated this EMP in response to the comments.

6 EMP Changes

As outlined within Section 3 *EMP Adaptive Management and Review*, this EMP may be revised. Table 6-1 provides a summary description of the revisions made to this EMP following submission to the EPA for assessment.

Table 6-1: Summary of EMP changes

Revision	Date	Description EMP Change(s)
1	September 2025	Final draft submitted to the EPA for assessment

7 References

Astron Environmental Services Pty Ltd (Astron) (2023) *Yandi 45C Targeted Significant Vertebrate Fauna Survey*.

Astron (2025) *Ministers North Consolidated Targeted Significant Vertebrate Fauna Surveys*.

Bat Call WA (2021) *A Review of Ghost Bat Ecology, Threats and Survey Requirements*. Report prepared by Bullen R D of Bat Call WA for the Department of Climate Change, Energy, the Environment and Water (formerly as the Department of Agriculture, Water and the Environment). May 2021.

Bat Call WA (2022) *Brockman Syncline Stage 1 Cave Sound and Vibration Review*. Report prepared by Bullen R D of Bat Call WA for Rio Tinto Limited. April 2022.

Biologic Environmental Survey Pty Ltd (Biologic) (2017) *Ministers North Level 2 Vertebrate Fauna Survey*. Report prepared by Biologic Environmental Survey Pty Ltd for BHP Iron Ore Pty Ltd. Revision 3. October 2017.

Biologic (2018) *Ministers North to Yandi Corridor Two Phase Targeted Fauna Survey*. Report prepared by Biologic Environmental Survey Pty Ltd for BHP Iron Ore Pty Ltd. Revision 3. October 2018.

Biologic (2023) *Central Pilbara Hub: Targeted Matters of National Environmental Significance Vertebrate Fauna Survey*. Report prepared by Biologic Environmental Survey Pty Ltd for BHP Iron Ore Pty Ltd. Final. May 2023.

BHP Iron Ore Pty Ltd (BHP) (2016) *Pilbara Public Environmental Review Strategic Proposal*. March 2016.

BHP (2022) *Short-range Endemic Invertebrate Fauna Assessment Methods: Technical Process Instruction*.

BHP (2023) *Vertebrate Fauna Surveys in Western Australia - Technical Process Instruction*.

BHP (2025a) *Ministers North Derived Proposal Request*. Ministerial Statement 1105.

BHP (2025b) *Ministers North Impact Reconciliation Procedure*.

Environmental Protection Authority (EPA) (2018) *Pilbara Expansion Strategic Proposal*. Report and recommendations of the Environmental Protection Authority. Report 1619. July 2018.

EPA (2023) *Statement of Environmental Principles, Factors, Objective and Aims of EIA*. April 2023.

EPA (2024) *Instructions: How to Prepare Environmental Protection Act 1986 Part IV Environmental Management Plans*. March 2024.

GHD Pty Ltd (GHD) (2021a) *Ministers North Fauna Survey Level 1 Survey*. Report prepared by GHD Pty Ltd for BHP Iron Ore Pty Ltd. February 2021.

GHD (2021b) *Ministers North Fauna Survey Level 2 Survey*. Report prepared by GHD Pty Ltd for BHP Iron Ore Pty Ltd. February 2021.

8 Appendices

Appendix 1: Terrestrial Fauna Supporting Studies

Title	Survey date	Survey summary
Vertebrate Fauna		
Astron Environmental Services Pty Ltd (Astron) (2025) Ministers North Targeted Significant Vertebrate Fauna Survey	13 - 22 April 2023 and 7- 18 June 2024	One-hundred and eleven vertebrate fauna were recorded within the Survey Area, comprising one amphibian, 25 reptile, 64 bird, and 21 mammal (including three introduced) species. Three MNES species, northern quoll (<i>Dasyurus hallucatus</i>), ghost bat (<i>Macroderma gigas</i>), and Pilbara olive python (<i>Liasis olivaceus</i>), were recorded during the current surveys. Only the ghost bat records coincide with the Derived Proposal area.
Astron (2023) Yandi 45C Targeted Significant Vertebrate Fauna Survey.	22 Sept – 2 Oct 2022	There were 91 vertebrate fauna species recorded within the survey area, comprising of seven reptiles, 66 birds, and 18 mammals (including four introduced species). The fauna species assemblage recorded during the survey was considered typical for the Pilbara region.
Biologic (2023) Central Pilbara Hub: Targeted Matters of National Environmental Significance Vertebrate Fauna Survey	4 – 13 April 2022 (relevant dates to the Derived Proposal)	Due to the size of the Study Area (approximately 60,000 ha ⁴), the field survey was undertaken over five separate field trips. Calls of Pilbara leaf-nosed bats were recorded at four locations during the survey (note these do not intersect the Derived Proposal area). Ghost bat was recorded on 33 nights at four locations (note these do not intersect the Derived Proposal area). No evidence of other MNES were recorded.
GHD Pty Ltd (GHD) (2021b) Ministers North Fauna Survey Level 2 Survey	19 Mar – 27 Mar 2020	The field survey identified 122 species of vertebrate fauna. This number comprises 55 birds, 44 reptiles, 19 mammals and four amphibians. Four conservation significant fauna species were recorded during the field survey: Ghost Bat, Western Pebble-mound Mouse (<i>Pseudomys chapmani</i>), Pilbara Olive Python, Pilbara Flat-headed Blind Snake (<i>Anilius ganei</i>)
GHD (2021a) Ministers North Fauna Survey Level 1 Survey	9 Sept – 20 Sept 2019	The fauna survey identified 67 species of vertebrate fauna. This number comprises 40 birds, 19 mammals and eight reptiles. Two conservation significant fauna species were recorded during the field survey: Ghost Bat; Western Pebble-mound Mouse.
Biologic (2018) Ministers North to Yandi Corridor Two Phase Targeted Fauna Survey	9 – 13 Oct 2017 and 15 – 23 June 2018	The surveys consisted of habitat assessments, targeted transect searches; motion cameras; ultrasonic bat recordings, acoustic bird recordings, Northern Quoll trapping sites and opportunistic recording of fauna species. Two species of conservation significance were recorded during the current survey: the Western Pebble Mound Mouse and the Peregrine Falcon (<i>Falco peregrinus</i>)
Biologic (2017) Ministers North Level 2 Vertebrate Fauna Survey	15 – 26 October 2016 and 3 – 13 April 2017	The survey recorded 116 vertebrate fauna species, comprising 17 mammal species, 54 bird species, 43 reptile species, and 2 amphibians. Two conservation significant species were recorded: the Western Pebble-mound Mouse and Rainbow Bee-eater. No species listed as Threatened were recorded.

⁴ Only a small portion of this survey intersects with the project – Mining Area C to Yandi Rail Corridor assessment area

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