

# PART D

## Assurance and Implementation

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# 10 ASSURANCE OVERVIEW

In addition to the assessment of potential impacts that forms the basis of this PERSP, regulators and stakeholders require assurance that the EPA's objectives will continue to be met over the life of the proposal. As discussed in Part A, the successful implementation of the Strategic Proposal relies on the checks and balances within which future developments will operate. These checks and balances are the proposed assurance elements embedded in this Strategic Proposal, the key ones that will be locked in by Ministerial conditions following the Strategic Proposal assessment.

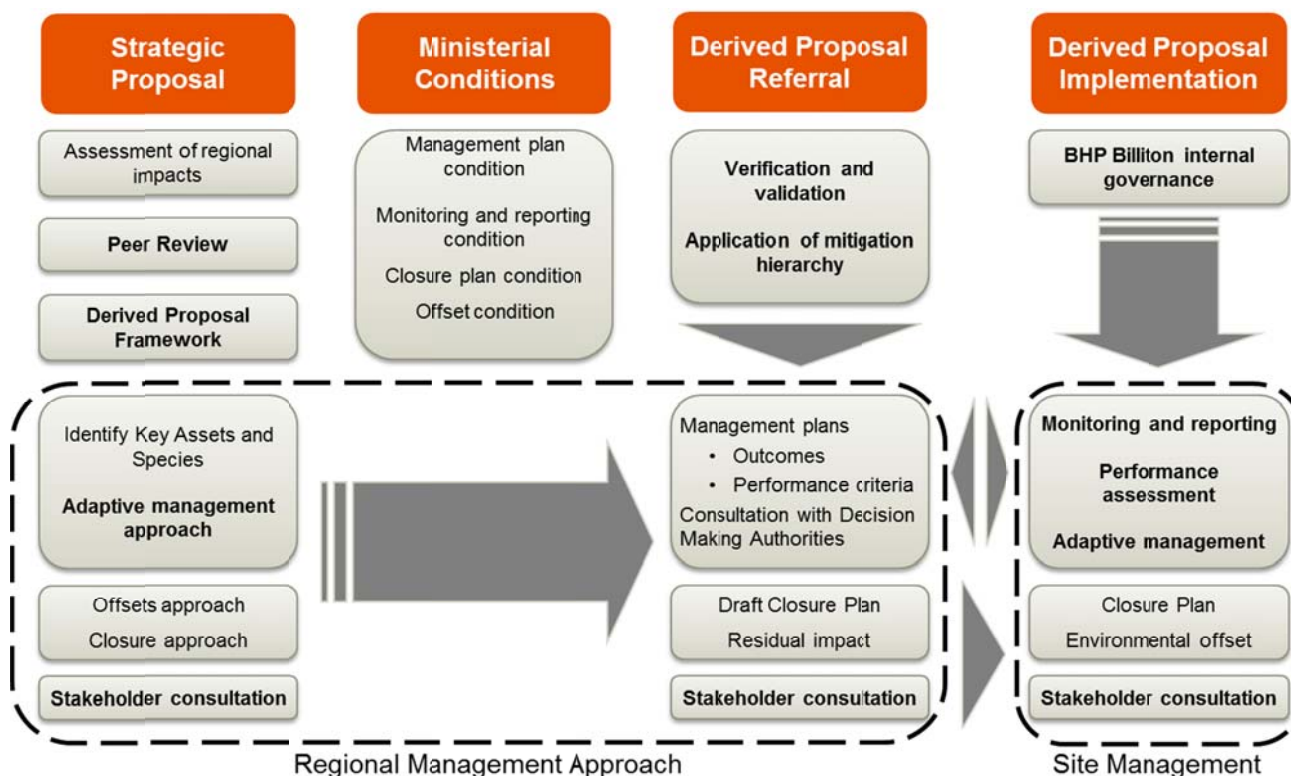
BHP Billiton Iron Ore has proposed an assurance framework for the referral and implementation of Derived Proposals, which is summarised below:

- **Derived Proposal Referral Framework:** A proposed structure for the Derived Proposal supporting information that provides a guide (subject to Ministerial conditions) to the nature of information to be supplied with any future proposal referral. This helps set clear expectations as to the robustness and transparency of this information. It includes application of the mitigation hierarchy, validation and verification that the Derived Proposal can meet the outcomes applicable to that proposal and stakeholder consultation (discussed separately below).
- **Derived Proposal Implementation:** Outlines the proposed project implementation approach, including:
  - internal environmental governance;
  - monitoring and reporting;
  - environmental performance assessment;
  - the adaptive management approach; and
  - stakeholder consultation (discussed separately below).
- **Stakeholder consultation:** Details BHP Billiton Iron Ore's approach to stakeholder consultation and lists the key stakeholders BHP Billiton Iron Ore identified for the Strategic Proposal. This will occur throughout development and implementation of Derived Proposals so is discussed separately.

The assurance framework and its application across the Strategic and Derived Proposal stages is illustrated in Figure 71. The bold elements in the figure are the key assurance elements.

A number of the elements are embedded in the Strategic Proposal, including peer review undertaken for the key technical inputs, the Derived Proposal Framework and the adaptive management approach. Significant stakeholder consultation has also been undertaken in preparing the Strategic Proposal.

In addition to the assurance elements, the Strategic Proposal identifies the key environmental assets and species relevant to the proposal and outlines the proposed approach to offsets and closure. This work informs the drafting of Ministerial conditions, which, once approved, lock in the requirements for development of management plans, closure plans, offset requirements, monitoring and reporting among other requirements.



**Figure 71: BHP Billiton Iron Ore’s proposed assurance framework and key elements**

When BHP Billiton Iron Ore submits a referral for consideration as a Derived Proposal, it will include:

- verification and validation of the proposal and associated impacts;
- how BHP Billiton Iron Ore has applied the mitigation hierarchy;
- relevant management plans (as informed by the key assets and significant species and to meet the Ministerial conditions);
- a draft mine closure plan (to meet the Ministerial condition); and
- an assessment of the residual impact.

Key to the referral will be for BHP Billiton Iron Ore to demonstrate that the impacts of the referred Derived Proposal are consistent with the outcomes determined in the EPA’s assessment of the Strategic Proposal.

Finally, there are additional assurance elements that will come into play during the implementation of the Derived Proposal. The proposal must be implemented consistent with the plans and processes determined in the Ministerial conditions and also informed by BHP Billiton Iron Ore’s internal governance. Adaptive management will be a key aspect during implementation of both individual proposals and collectively over all future proposals. Informed by monitoring, reporting and the ongoing verification and validation approaches, BHP Billiton Iron Ore will employ adaptive management to allow for continual improvement in environmental management and to particularly inform the key management plans (as indicated by the two-way influence in Figure 71). It also highlights those elements that form part of the regional management approach and how they are separate from but linked to individual site environmental management.

In combination, these elements provide confidence to regulators, stakeholders and the community that the implementation of future proposals will continue to meet the EPA’s objectives and the community’s expectations. Each of the key elements is discussed in the following chapters.

# 11 DERIVED PROPOSAL FRAMEWORK

A Derived Proposal is a ‘future proposal which was identified in the strategic proposal, which has been referred to and considered by the EPA, and which is then declared to be a Derived Proposal’ (EPA 2012b). The regulatory framework for Strategic and Derived Proposals is provided in Chapter 4. Future proposals identified within this PERSP will be referred to the EPA under s. 38 of the EP Act and will be requested to be declared by the EPA to be a Derived Proposal (i.e. derived from a strategic proposal) under s. 39B of the EP Act.

The referred proposal will include a statement on whether the proposal meets the EPAs requirements to be considered a Derived Proposal. The referred proposal will also demonstrate that it is consistent with the EPA’s environmental outcomes defined through assessment of the Strategic Proposal. This will include a screening assessment to identify the factors that are material to the Derived Proposal and that therefore may require further consideration within the referral. This involves screening the Strategic Proposal key factors for only those that are material and identifying any additional material factors. The screening process to identify material factors will consider contemporary legislation, policy and guidance and application of relevant BHP Billiton Iron Ore processes, such as risk assessment.

For each material factor, the environmental outcomes determined in the EPA’s assessment of the Strategic Proposal will be identified; and a justification of whether the existing information is sufficient (in detail, accuracy and currency) for assessment or whether additional validation or verification work must be presented to demonstrate that the environmental outcomes will be met.

The key aspects to be considered for each Derived Proposal will vary, but it is envisaged that each project will be presented to the EPA in a consistent format. An indicative outline of the content of a Derived Proposal is provided in Table 85. A proposed Derived Proposal template is provided in Appendix 11.

**Table 85: Derived Proposal indicative table of contents**

CHAPTER HEADING	PURPOSE OF CHAPTER
<p><b>Executive Summary</b></p>	<ul style="list-style-type: none"> <li>• Reference to relevant referral submission.</li> <li>• Statement of the purpose of this document.</li> <li>• BHP Billiton Iron Ore’s explicit position on whether the referred proposal meets or does not meet the criteria that the EPA must consider before deciding whether or not to declare a proposal to be a Derived Proposal (refer to Section 4.2.3).</li> <li>• BHP Billiton Iron Ore’s explicit position on whether the referred proposal is consistent with the environmental outcomes defined through assessment of the Strategic Proposal.</li> <li>• BHP Billiton Iron Ore’s explicit position on whether the implementation conditions should be changed. Note: Where the EPA decides to declare a proposal a Derived Proposal, it must then decide whether the implementation conditions should be changed. If so, the s. 46 condition amendment process is triggered.</li> </ul>
<p><b>1. Introduction and Background</b></p> <p>1.1 The Strategic Proposal</p> <p>1.2 Purpose and Structure of this Document</p>	<ul style="list-style-type: none"> <li>• To identify that the referred proposal is part of the Strategic Proposal and was assessed.</li> <li>• To define the purpose of this Derived Proposal document.</li> <li>• To clearly describe the role of each of the document’s parts.</li> </ul>
<p><b>2. Proposal Description</b></p> <p>2.1 Location and Extent</p> <p>2.2 Elements and Disturbance</p> <p>2.3 Consistency with Strategic</p>	<ul style="list-style-type: none"> <li>• To provide a succinct description of all the relevant characteristics of the referred proposal (location, duration and proposal elements).</li> <li>• To describe the nature and extent of key elements of the referred proposal likely to have an effect on the environment.</li> <li>• To provide evidence that the nature and extent of the proposed activities are within the scope of the Strategic Proposal and were assessed.</li> </ul>

<p>Proposal</p>	<ul style="list-style-type: none"> <li>To identify that it was decided, as recorded in the Ministerial implementation decision for the Strategic Proposal, that the referred proposal could be implemented (with or without conditions).</li> </ul>
<p><b>3. Consideration of Environmental Factors</b>  3.1 Identification of Factors Material to the Proposal</p>	<ul style="list-style-type: none"> <li>Screening assessment to identify the factors that are material to the Derived Proposal and that therefore require further consideration in the subsequent sections.</li> <li>Consistent with BHP Billiton Iron Ore’s adaptive management approach (described in Section 12.1.1), identify and review all relevant contemporary information that will improve the understanding of environmental factors and assist with the accurate identification of factors material to the Derived Proposal.</li> <li>In respect to the material environmental factors, identify the environmental outcomes determined in the EPA’s assessment of the Strategic Proposal.</li> <li>For each material factor, identify and justify whether existing information is sufficient (in detail, accuracy and currency) or whether additional validation or verification work is required to demonstrate that the environmental outcomes will be met consistent with BHP Billiton Iron Ore’s adaptive management approach (Section 12.1.1).</li> </ul>
<p>3.2 Validation of Material Factors</p>	<ul style="list-style-type: none"> <li>Describe the predevelopment (baseline) condition of environmental factors determined to be material to the Derived Proposal.</li> <li>Identify the relevant aspects of the Derived Proposal that could impact the factors.</li> <li>Describe the nature of the potential inherent impacts (premitigation) to the factors.</li> <li>Describe the mitigation actions (by applying the mitigation hierarchy to the potential inherent impacts), and describe the residual impact (impact remaining after mitigation).</li> <li>Demonstrate the impacts are consistent with the outcomes determined in the EPA’s assessment of the Strategic Proposal.</li> </ul>
<p><b>4 Consultation</b></p>	<ul style="list-style-type: none"> <li>To give confidence to the EPA that BHP Billiton Iron Ore has consulted with all relevant stakeholders, the outcomes of the consultation have been considered and, where required, the issues raised are addressed in the development of this Derived Proposal.</li> <li>To identify the stakeholders that were consulted and provide a summary of the consultation.</li> </ul>
<p><b>5. Derived Proposal Declaration Recommendation</b>  5.1 Alignment with Outcomes for Key Factors 5.2 Derived Proposal Criteria 5.3 Implementation of Conditions</p>	<ul style="list-style-type: none"> <li>A summary statement on: <ul style="list-style-type: none"> <li>– Alignment with the outcomes for factors determined in the EPA’s assessment of the Strategic Proposal.</li> <li>– BHP Billiton Iron Ore’s consideration of the referred proposal against the Derived Proposal criteria, concluding that the referred proposal meets all relevant criteria to be declared a Derived Proposal by the EPA.</li> <li>– BHP Billiton Iron Ore’s conclusion on whether the implementation conditions should be changed.</li> </ul> </li> </ul>

A Case Study, demonstrating the broad process that BHP Billiton Iron Ore will follow at Derived Proposal stage, including the assurance framework process, is presented below in Case Study 15.

**Case Study 15: Assurance framework and Derived Proposal case study**

In this hypothetical example set in 2020, BHP Billiton Iron Ore proposes to develop the Mine Y operational hub. The following case study outlines the validation and verification proposed to be undertaken in preparing a Section 38 referral of a future proposal. A hypothetical example has been used to illustrate this process based on the proposed assurance approach outlined in this Chapter and the type of information which will be included in the referral.

As part of any new project development, BHP Billiton Iron Ore undertakes a series of feasibility and design studies in order to identify preferred project options, development risks, constraints and opportunities, and design details which inform environmental and other approvals. The design information will include the location and dimension of each of these elements, a defined development envelope, the location of pits,

OSAs and infrastructure as well as proposed operational approaches such as surface and groundwater management.

Based on the feasibility study designs, BHP Billiton Iron Ore prepares supporting information for the proposal referral including the assurances detailed in the previous sections and as outlined in Chapter 10.

### **Proposal Description**

The proposal is described including the location and extent, nature of the proposal, timing and relevant production information. The proposed mining operation is located adjacent to the Great Northern Highway near the existing BHP Billiton Iron Ore Mining Area C operation. Ore is to be mined within the development envelope but transported via conveyor to an existing operation for secondary crushing, screening, and stockpiling before being transported via rail to Port Hedland. The proposal is for a 45 Mtpa hub including above and below water table pits, within-pit and external to pit OSAs, ROM stockpile, primary crushing, administration and workshops. A total of 8,000 ha land disturbance within the Development Envelope is required. The operational life of the proposal is 30 years. Rail and production operations at the existing mine do not form part of the proposal.

Mine Y was considered in the PERSP and is within the Project Definition Boundary. The scope of the proposal is consistent with the scope of the Strategic Proposal.

Since the Strategic Proposal was assessed, a new third party mine had commenced operation nearby. The mine was considered in the Strategic Proposal as a reasonably foreseeable proposal and was included in the cumulative impact assessment.

### **Identification of Factors Material to the Proposal**

BHP Billiton Iron Ore undertook a screening assessment to identify material Factors to the proposal including a review of relevant legislation for any changes to listings or status of species and assets.

#### Flora and vegetation

Multiple season Level 2 flora and vegetation surveys were undertaken in 2011/2012. A review of the survey methods employed at this time verifies that the approach was consistent with contemporary guidance. A survey to ground truth a subset of the 2012 sample sites was undertaken by an experienced Pilbara botanist to validate to currency of the survey information and the location of any conservation significant species. Based on the proposal information and the validated survey results, no Threatened flora species would be directly impacted and Priority flora are consistent with those assessed in the Strategic Proposal. **Not considered a material Factor.**

#### Terrestrial fauna

Multiple season Level 2 fauna survey was undertaken in 2011/12. Since the Strategic Proposal was assessed, the imaginary skink was listed as Endangered under the *Biodiversity Conservation Act 2016*. The ghost bat was also listed under as Vulnerable under the EPBC Act after the Commonwealth Strategic Assessment was assessed.

BHP Billiton Iron Ore also reviewed state and national guidance documents relevant to the proposal. The EPA's Technical Guide - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment had been updated since the Strategic Proposal was assessed. The previous fauna assessments undertaken for Mine Y were validated against the new technical guide, and no additional survey work was required.

The proposal area supports newly listed conservation significant species which could be significantly impacted by the proposal. **Considered a material Factor.**

#### Terrestrial environmental quality

The proposal area was identified in the Strategic Proposal as having low erosion and low AMD potential. Analysis of project specific drilling data confirmed these findings. Both risks can be managed through standard mitigation as described in the Strategic Proposal. **Not considered a material Factor.**

#### Subterranean fauna

Mine dewatering will be required to accommodate mining of below water table ore. Detailed groundwater drawdown modelling was developed based on the proposal design. The proposal area was considered low

prospectivity for stygofauna and troglofauna habitat in the Strategic Proposal. Targeted troglofauna and stygofauna surveys and mapping of potential habitat was undertaken consistent with contemporary guidance within and adjacent to potential impact areas in 2019.

Subterranean fauna habitat mapping indicated contiguous habitat outside areas of potential direct and indirect impacts. All subterranean fauna species identified during baseline and targeted surveys are known from outside the area of impact or studies have confirmed suitable habitat is continuous beyond the impact area. **Not considered a material Factor.**

#### Landforms

Landforms will be modified by the proposal however as a proportion of landscape units and land systems this change will be minor and were assessed as part of the Strategic Proposal. **Not considered a material Factor.**

#### Hydrological Processes and Inland Water Environmental Quality

The project area falls predominantly within the upper catchment of Weeli Wolli Creek which ultimately flows into Fortescue Marsh. The potential area of influence for the mine includes two level 2 environmental assets: Coondawanna Flats (PEC) and Weeli Wolli Springs (PEC).

Both Coondewanna Flats and Weeli Wolli Spring are recognised in the Strategic Proposal as key ecohydrological receptors which have hydrological dependencies and high sensitivity to groundwater change. The Strategic Proposal identified a moderate groundwater risk and a high surface water risk to Coondewanna without mitigation. A high cumulative surface and groundwater risk was identified for Weeli Wolli Spring, again without mitigation.

The findings of the Strategic Proposal were validated through monitoring, explorative drilling, pump testing and development of a calibrated hydrogeological model. Modelling included the cumulative impacts of the new third party mine, using information which was either publically available or shared by the proponent.

Monitoring and studies confirmed that Coondewanna Flats (PEC) is not groundwater dependent. Modelling for Weeli Wolli Spring includes the implementation of mitigation measures including advanced pit dewatering, aquifer recharge and surface water discharge as outlined in the Strategic Proposal.

**Considered a material Factor.**

#### Air quality and atmospheric gases

No sensitive receptors within area of potential influence from the proposal. **Not considered a material Factor.**

#### Amenity

The Strategic Proposal found that the proposal sits within an area of moderate to high visual amenity risk, particularly given the proximity to the Great Northern Highway. Views will be transient from travellers on the Highway. Landscapes within the Strategic Proposal Project Definition Boundary were found to be common and potential impacts to these regional landscapes were considered to be low. A draft Mine Closure Plan will be submitted with the proposal referral. The Plan includes mitigation measures outlined in the Strategic Proposal. **Not considered a material Factor.**

#### Heritage

Detailed heritage surveys have been undertaken across the site with the Traditional Owners. Management of heritage values will be undertaken consistent with the heritage agreement between BHP Billiton Iron Ore and the Traditional Owners. Management of heritage survey and sites will be to the satisfaction of the Department of Indigenous Affairs. **Not considered a material Factor.**

#### Human Health

No sensitive receptors within area of influence from the proposal. **Not considered a material Factor.**

#### Rehabilitation and decommissioning

A draft Mine Closure Plan will be submitted with the referral and will be finalised to the satisfaction of DMP. The Plan will outline mitigation and management approaches specific to the project and will be updated periodically over the life of the mine. The Plan will set site specific closure outcomes. **Considered a material Factor.**



Offsets:

Implementation of the proposal will result in a direct disturbance to 8,000 ha of native vegetation which is in good condition or above. 5,000 ha of this can be rehabilitated to native vegetation of similar condition, consistent with the final land use outlined in the draft Mine Closure Plan. The project will result in a residual impact of 3,000 ha of cleared vegetation for which Offsets will be applied. **Considered a material Factor.**

The future proposal referral concluded that the material Factors were:

- Terrestrial fauna
- Hydrological Processes
- Rehabilitation and decommissioning
- Offsets

No further validation was undertaken in the referral for the remaining Factors.

**Validation of Material Factors**

Having identified the material Factors, validation and verification will be undertaken for each as set out in Chapter 10. For the purposes of this example, the proposed validation steps are outlined for a single material Factor, Terrestrial Fauna. For a future proposal, this would be undertaken for each material Factor.

***Collection and validation of baseline information***

Baseline conditions are described from the 2011/2012 terrestrial fauna survey results. The suitability of this baseline information was verified by a targeted fauna survey of conservation significant species undertaken by an experienced Pilbara ecologist/zoologist in 2019. As part of the targeted survey, all fauna records for the proposal area were reviewed against current listings to ensure information on species conservation status is up to date.

***Identify relevant aspects that could impact the material Factor***

Baseline data identified that the proposal area supports roosting caves for the ghost bat (a Priority 4 species). The Strategic Proposal identified the presence of ghost bats within BHP Billiton Iron Ore's tenements east of Karijini National Park and that breeding occurs in the area. The assessment also concluded that impacts to this species could be managed to an acceptable level with implementation of mitigation measures outlined in the Strategic Proposal. Targeted ghost bat surveys were undertaken for the Derived Proposal to better clarify the use of caves within the proposal area so as to inform mitigation measures. No maternity roosts were identified but five caves were considered to be locally important roosting sites, three of which were within the proposal development footprint.

Given the new listing of the imaginary skink, additional targeted survey was undertaken for the skink both within and outside the proposal area to better understand the species habitat, range extent and the potential impacts from the implementation of the proposal. The survey was undertaken using the revised methodology outlined in the *Technical Guide - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*. Surveys on the project tenure recorded the skink within and outside the development footprint. Several large population of the skink were also identified within Karijini National Park.

No other conservation significant fauna species will be directly impacted by the proposal.

***Identify mitigation actions, quantify potential impacts on the material Factor and describe any residual impacts***

Targeted mitigation measures were identified for both the ghost bat and imaginary skink.

The proposed mine layout was modified to avoid direct impacts to one of the three ghost bat roosting caves identified within the development envelope. In an effort to offset the impacts associated with the removal of two of the ghost bat roosting caves, BHP Billiton Iron Ore will commit to construction of an artificial cave. This cave will be constructed to a standard and location agreed to with the Department of Parks and Wildlife. The development of outcomes and monitoring requirements for the artificial cave will be incorporated into BHP Billiton Iron Ore's regional Land and Biodiversity Management Plan submitted

with the referral. The updated Plan will need to be approved by the CEO of the OEPA. The success of the program will be publically reported.

As the imaginary skink is not restricted to the proposal area and as there are large populations known to occur within the nearby conservation estate, no site mitigation measures were considered to be required. BHP Billiton Iron Ore has however committed to undertaking a targeted monitoring program during mine operation to determine the sensitivity of the skink to mining operations.

The above actions should mitigate the impacts of the proposal on the target conservation significant fauna species. In addition, the proposal is likely to require a broader environmental offset for the clearing of 3,000 ha of good quality native vegetation which will not be able to be rehabilitated to a similar quality. The environmental offset for this proposal will be delivered through the State's Pilbara offsets mechanism.

***Identify outcomes and performance criteria with DMAs***

Outcomes and monitoring thresholds for the artificial cave have been developed. The outcomes relate to design, physical (temperature, humidity) and usage criteria. Development of these outcomes was undertaken in consultation with relevant DMAs and incorporated into the Land and Biodiversity Management Plan submitted with the referral.

Outcomes for the skink monitoring program were similarly developed.

***Demonstrate residual impacts are consistent with EPA's assessment of the Strategic Proposal***

Based on the outcomes of the validation of terrestrial fauna impacts and the proposed mitigation measures, BHP Billiton Iron Ore believe that the proposal will meet the EPA objectives for Terrestrial Fauna and that this is consistent with the EPA's assessment of the Strategic Proposal.

# 12 IMPLEMENTATION OVERVIEW

## 12.1 Implementation of the Regional Management Approach

The regional management approach for the Strategic Proposal provides overarching guidance for the effective and efficient management of the environment relevant to BHP Billiton Iron Ore's operations in the Pilbara. The Strategic Proposal seeks to achieve this by outlining an outcomes-based, coordinated and adaptive approach to the management of BHP Billiton Iron Ore's environmental impacts for the duration of its Pilbara operations.

The implementation of this approach is described below.

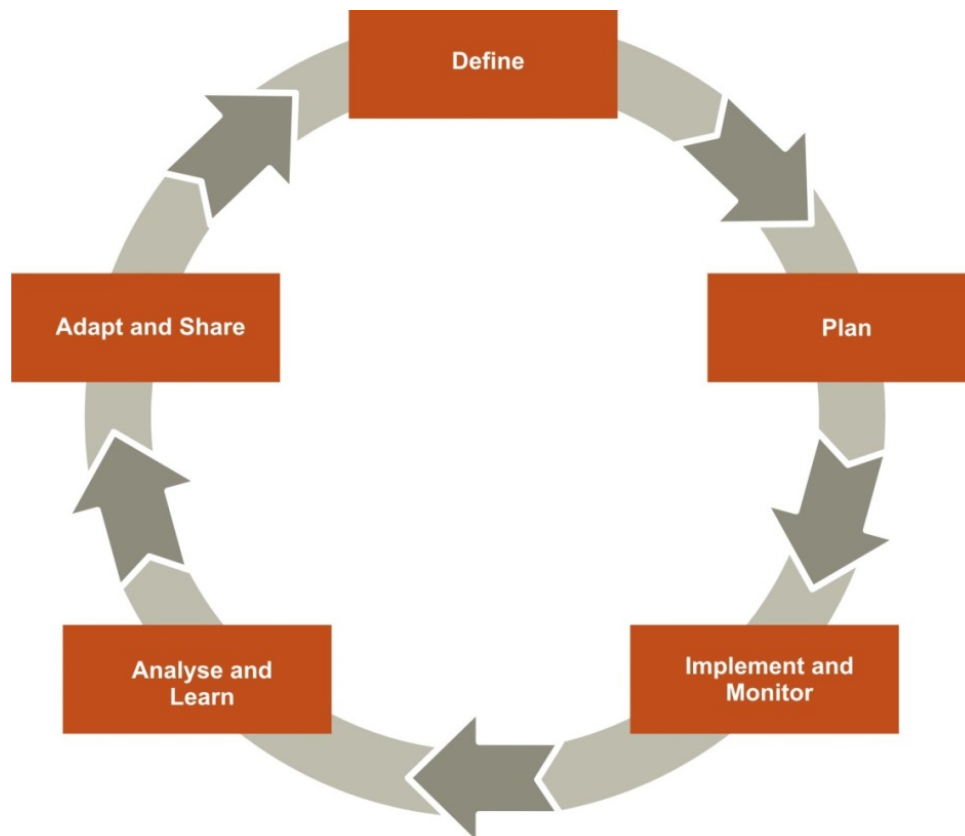
### 12.1.1 ADAPTIVE MANAGEMENT AND THE MITIGATION HIERARCHY

As the Strategic Proposal is planned to be implemented over a large area and a long period of time, the ability to adapt to changing conditions will be key to the successful management of the environment. BHP Billiton Iron Ore uses adaptive management to enable the consideration of changing conditions and improvements in knowledge to overcome future challenges to environmental management within the scope of the Strategic Proposal.

Adaptive management is a structured, iterative process of decision-making with the capacity to validate predicted impacts and to develop appropriate responses to emerging issues through monitoring and adapting to environmental, economic and social changes. An integral component to adaptive management is the application of the mitigation hierarchy (avoid, minimise, rehabilitate and offset).

The successful planning and execution of the management of relevant environmental factors in the Pilbara requires a holistic, long-term view of landscape-scale outcomes coupled with progressive operations-level activities. A key driver of this requirement is the regional scale and long life span of BHP Billiton Iron Ore's proposed future mining activities in the Pilbara. This driver necessitates the use of a management approach that is both regional and adaptable over time.

BHP Billiton Iron Ore's adaptive management (Figure 72) embeds a cycle of monitoring, reporting and implementing change where required. It allows an evaluation of the mitigation controls so that either they are progressively improved and refined or alternative solutions are adopted to ensure the outcome-based objectives are achieved. BHP Billiton Iron Ore's adaptive management is underpinned by its corporate commitments, which collectively articulate BHP Billiton Iron Ore's core values and minimum performance standards for environmental management and sustainability.



**Figure 72: BHP Billiton Iron Ore’s adaptive management approach**

Adaptive management is required in evolving political, social and natural environments. It provides the necessary flexibility to respond to conservation-significant changes; the development of new technologies; and improvements in the understanding of assets, values, species, threatening processes and impacts (e.g. climate change). The five key steps of adaptive management are:

- **Define:** Conduct baseline and impact assessments (including cumulative impact assessments where required) to understand how the proposed operation or expansion may impact the environment (e.g. downstream impacts to key assets resulting from proposed mine dewatering). This information will be used to identify key risks and define acceptability criteria in accordance with BHP Billiton Iron Ore’s internal risk management frameworks and in consultation with key stakeholders. This step will also define environmental outcome-based objectives consistent with regulatory and internal requirements and set performance criteria to ensure the outcomes are met;
- **Plan:** Develop management plans that describe how the performance criteria or outcome-based objectives will be met through the application of the mitigation hierarchy, monitoring and reporting measures;
- **Implement and Monitor:** Implement management tools and monitor against performance criteria during construction and operations and into closure and rehabilitation. Conduct internal audits to verify management tools are being implemented in line with regulatory and internal standards;
- **Analyse and Learn:** Use monitoring data to verify models, validate assumptions and identify relevant internal and external changes (e.g. change in regulatory requirements, improved understanding or advancements in technology) and address those changes where applicable. Review and assess data and information acquired to ensure that management tools, performance criteria or outcome-based objectives remain appropriate over the life of the operation and for closure; and
- **Adapt and Share:** Report management performance and relevant metrics according to external and internal reporting requirements (e.g. annual environmental reporting, BHP Billiton Annual Sustainability Report). Where shortcomings or improvement opportunities in the management approach are identified, adapt the management approach. Implement and communicate the changes with a view to sharing learnings externally and contributing to improvements across the industry.

An integral component of adaptive management is the application of the mitigation hierarchy consistent with the guiding principles outlined in the Western Australian Environmental Offsets Guidelines (Government of Western Australia 2014). The mitigation hierarchy of 'avoid, minimise, rehabilitate and offset' has been considered in the Strategic Proposal assessment and will be implemented as part of the Derived Proposal phase to ensure, as far as practicable, that impacts are first avoided, then minimised, rehabilitated and finally offset if significant residual impacts are unavoidable. This approach is consistent with EPA guidance and state government policy.

- **Avoid:** Avoidance is the primary and preferred strategy for managing significant impacts to the environment. Avoidance directly removes the potential impact to the environment. Avoidance of impacts may involve comprehensive planning and suitable site selection, such as altering the location of infrastructure to avoid known locations of threatened ecological communities or of sensitive habitats. BHP Billiton Iron Ore will consider impact avoidance to be the preferred strategy for managing significant impacts to the environment during scoping of Derived Proposals.
- **Minimise:** After practicable avoidance measures have been considered or implemented, mitigation measures to reduce the remaining significant impacts (if any) will be investigated and implemented to reduce impacts to an acceptable level.
- **Rehabilitate:** After practicable avoid and minimise measures have been considered or implemented, rehabilitation will be applied with the aim of reducing impacts to an acceptable level.
- **Offset:** If, after the first three tiers of the mitigation hierarchy have been considered and applied, it is anticipated that there would be actual or reasonably foreseeable residual significant impacts to the environment, offset measures would be undertaken. Any offsets developed would be in consultation with government departments.

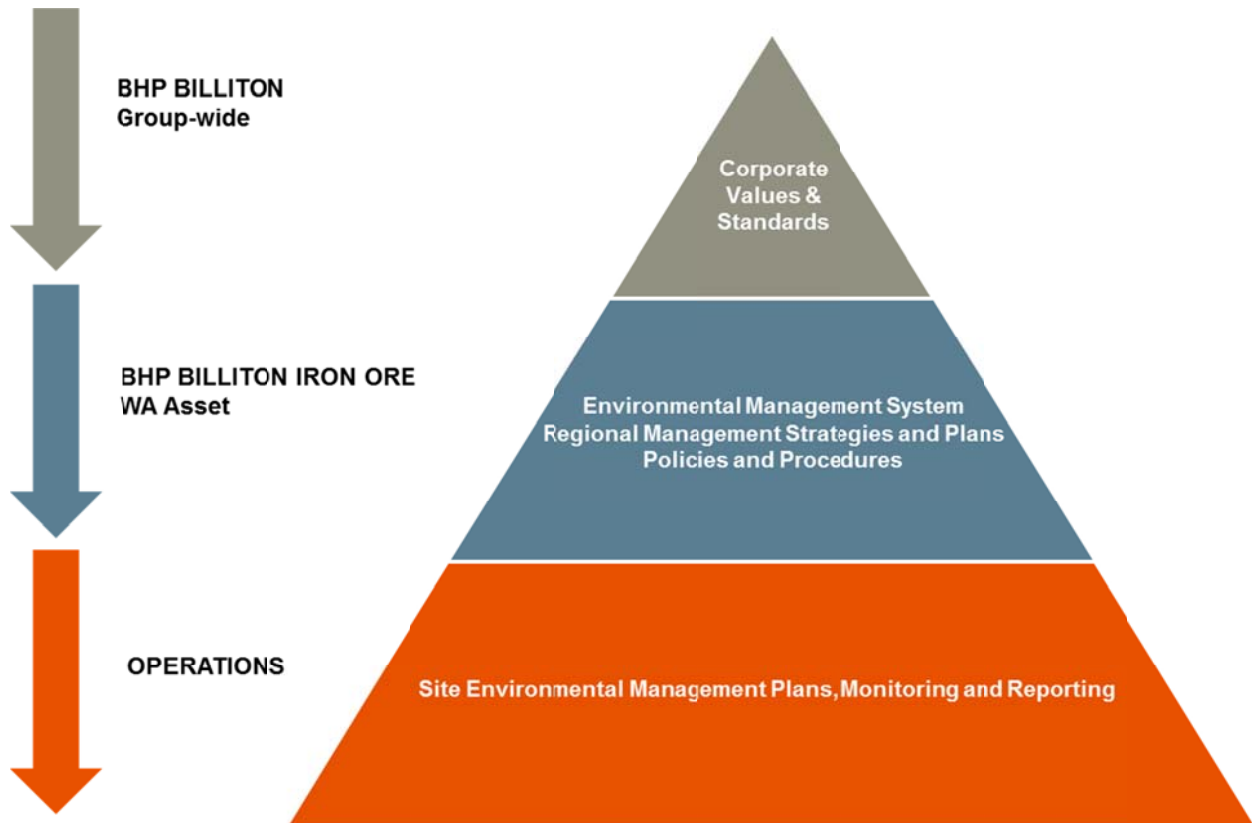
### 12.1.2 BHP BILLITON IRON ORE'S INTERNAL ENVIRONMENTAL GOVERNANCE HIERARCHY

The internal environmental governance hierarchy (Figure 73) enables the business to meet its environmental objectives and legal compliance requirements and provides for continual improvement in environmental performance. The hierarchy is developed in accordance with relevant international, national and state policy, agreements and treaties.

BHP Billiton's environmental governance hierarchy is comprised of three tiers: Corporate level, Asset (business, e.g. Iron Ore) level and Operation (site) level. At the Corporate level, BHP Billiton's Corporate Charter – Our BHP Billiton Charter (see Box 2) – identifies the values that underpin business activities. Measureable, minimum performance standards are defined in Group Level Documents (GLDs). These standards apply to all Assets and support the development and implementation of environmental management systems. BHP Billiton's GLD.009 Environment (BHP Billiton 2014) is the key guidance document for environmental management across all operations. BHP Billiton reports its Corporate-wide sustainability performance in the BHP Billiton Annual Sustainability Report.

At the Asset level, BHP Billiton Iron Ore's Environmental Management System (EMS), which includes regional strategies and plans, is the governance system that addresses environmental outcomes for the Pilbara region.

Site-specific management, monitoring and reporting is undertaken in a manner consistent with Corporate- and Asset-level governance. Management plans, procedures and registers are examples of the internal controls that underpin day-to-day operational activities. BHP Billiton Iron Ore publicly reports its environmental compliance performance in accordance with its environmental approval conditions in its annual environmental report.



**Figure 73: BHP Billiton Iron Ore’s environmental governance hierarchy**

## 12.2 BHP Billiton Iron Ore Internal Assurance Process

BHP Billiton Iron Ore’s internal assurance process comprises a series of mandated requirements that will ensure that the Strategic Proposal is implemented effectively and that BHP Billiton Iron Ore is meeting its environmental objectives.

The overarching processes and the phases contained therein that comprise the internal assurance process are described in the following sections.

### 12.2.1 PROJECT EVALUATION

BHP Billiton Iron Ore has developed an internal project evaluation process (which ultimately aims to achieve internal approval to proceed, including investment in project development) based on its existing outcome- and risk-based approach to environmental management in the Pilbara.

The internal project evaluation process integrates environmental considerations into BHP Billiton Iron Ore’s investment decision-making. BHP Billiton Iron Ore’s evaluation process is inherently flexible and allows specific governance requirements to be developed proportionate to the complexity, size and risk of the specific project within a broad, robust, internal approvals process.

### 12.2.2 DERIVED PROPOSAL SCOPING PHASE

The scoping phase is initiated as part of the internal project evaluation process during early project planning for any Derived Proposal.

Early project planning provides clear guidance on the project-specific requirements and expectations of this phase. As a minimum, the following activities occur:

- identify, develop, compare alternatives and select the preferred development alternatives. Environmental, technical, commercial and stakeholder-related aspects are taken into account when comparing alternatives;

- undertake a screening assessment to identify the environmental factors that are material to the Derived Proposal and that therefore require further consideration. This involves screening the Strategic Proposal factors for those that are material and identifying any additional factors. The screening process to identify material factors will consider contemporary legislation, policy and guidance and will apply relevant BHP Billiton Iron Ore processes, such as risk assessment;
- consistent with BHP Billiton Iron Ore's adaptive management approach (described in Chapter 6 and Section 12.1.1), identify and review all relevant contemporary information that will improve the understanding of factors and assist with the accurate identification of factors material to the Derived Proposal;
- in respect to the material factors, identify the required environmental outcomes determined in the EPA's assessment of the Strategic Proposal;
- for each material factor, identify and justify whether existing information is sufficient (in detail, accuracy and currency) for assessment or whether additional validation or verification work is required to demonstrate that the environmental outcomes will be met, consistent with BHP Billiton Iron Ore's adaptive management approach (described in Chapter 6 and Section 12.1.1); and
- identify environmental design and performance standards to be incorporated into project design.

Depending on the complexity, size and risk of a particular project, these activities may occur over more than one internal BHP Billiton investment phase.

For all projects, a work plan is prepared that addresses each of the minimum requirements above. Before progressing to the next phase, the work plan is endorsed, and authorisation to advance is obtained. To obtain internal approvals, the following will be assessed:

- the project is consistent with the BHP Billiton Charter and relevant Group Level Documents and Business Level Documents;
- the project is consistent with the Strategic Proposal;
- potential impacts to environmental factors are capable of being managed and will be in accordance with the Ministerial Conditions of the Strategic Proposal; and
- the project will promote the EPA's environmental principles for environmental protection and align with the EPA's environmental factor objectives (EPA 2015a).

This process ensures early consideration of environmental factors in the investment phase and integration of environmental factors into project design and decision-making. The requirements for this phase ensure that projects with a risk of unacceptable impact to the environment do not progress further in the evaluation process.

### 12.2.3 RISK ASSESSMENT

The BHP Billiton Group has developed a proprietary risk management standard that provides a consistent platform across the Company's operations for rating and ranking risks. The internal project evaluation process is integrated with this risk assessment process to ensure that risks associated with proposed projects are identified.

All Derived Proposals will require pre-execution risk assessment through risk identification, data gathering, analysis and verification, risk management and development of controls. This enables informed investment decision-making that promotes environmentally sustainable development.

### 12.2.4 INTERNAL APPROVAL TO PROCEED

As part of the internal project evaluation processes and upon completion of the scoping phase, the internal approval to proceed phase undertakes the surveys, studies and consultation requirements identified in the scoping phase. The preferred project development alternative is then detailed and refined in preparation for execution.

The outcomes of the scoping phase, in particular the work plan, will provide clear guidance on the project-specific requirements and expectations to obtain approval to proceed. As a minimum, the following activities occur:

- apply the mitigation hierarchy – avoid, minimise, rehabilitate, offset;
- for each material environmental factor, identify and justify whether existing information is sufficient (in detail, accuracy and currency) for assessment or whether additional validation or verification work is required to demonstrate that the environmental outcomes will be met;
- integrate relevant outcomes of stakeholder consultation;
- align with the outcomes for factors determined in the EPA’s assessment of the Strategic Proposal; and
- BHP Billiton Iron Ore’s consideration of the proposal against the Derived Proposal criteria, ensuring that the referred proposal meets all relevant criteria to be declared a Derived Proposal.

For all Derived Proposals, approval to proceed must be obtained from BHP Billiton Iron Ore prior to the commencement of ground-disturbing activities for the project. Approval to proceed will be granted by an internal investment review committee. To obtain approval to proceed, the following criteria must be satisfied:

- the Derived Proposal is consistent with the BHP Billiton Charter and relevant Group Level Documents and Business Level Documents;
- the Derived Proposal demonstrates that the impacts are consistent with the outcomes determined in the EPA’s assessment of the Strategic Proposal; and
- approval to proceed will be recorded in an internal BHP Billiton Iron Ore stakeholder register.

Internal approval to proceed occurs before a Derived Proposal is referred to the EPA.

### 12.2.5 IMPLEMENTATION AND OPERATION

After the phases of the internal project evaluation process have been completed, implementation of the project may proceed. Implementation is subject to the Derived Proposal referral and declaration processes, other regulatory approvals and legislation, and other internal BHP Billiton Iron Ore approvals and procedures, such as the PEAHR procedure.

The PEAHR procedure is used to manage all ground-disturbing activities through the implementation of BHP Billiton Iron Ore’s environmental, Aboriginal heritage, land access and legal commitments prior to, and during, land clearing and change of land use. The PEAHR procedure provides a mechanism for the consideration of technical and professional advice regarding environmental, Aboriginal heritage, and land access planning and management issues where necessary. The objectives of the PEAHR procedure are to:

- identify the significant environmental, Aboriginal heritage and land access aspects of BHP Billiton Iron Ore operations;
- ensure that, through appropriate environmental, Aboriginal heritage and land access planning and management, BHP Billiton Iron Ore’s project activities comply with all legislative and regulatory requirements, industry standards and codes of practice;
- minimise the number and nature of environmental, Aboriginal heritage and land access incidents and improve the environmental performance of BHP Billiton Iron Ore;
- provide improved planning and management at BHP Billiton Iron Ore’s projects and operations; and
- ensure that requirements of long-term planning, in particular closure and final rehabilitation, are taken into account at the planning stage.

BHP Billiton Iron Ore uses an electronic workflow process linked to a GIS to approve all new land clearing on site (electronic PEAHR system). The electronic PEAHR system is accessible to all employees via the BHP Billiton Iron Ore portal homepage on the Intranet and is used by employees conducting site-based planning activities.



BHP Billiton Iron Ore regularly measures implementation of the project against the performance criteria identified during the approval to proceed process and the Strategic Proposal. On an individual project basis, BHP Billiton Iron Ore reviews performance against the outcomes that are measure by performance criteria to demonstrate that the objectives are being met. The relationship between Objectives, outcomes and performance criteria are described in Section 6.1.

Where performance criteria, objectives or guiding principles are not met, BHP Billiton Iron Ore implements remedial actions in accordance with adaptive management.

### 12.2.6 PROJECT DECOMMISSIONING, REHABILITATION AND CLOSURE

For all Derived Proposals that require a mine closure plan, BHP Billiton Iron Ore will ensure alignment with contemporary state government guidelines (e.g. Guidelines for Preparing Mine Closure Plans (DMP & EPA 2015)).

Decommissioning is a process that generally begins near or at the cessation of mineral production and ends with removal of all unwanted infrastructure and services.

Closure and rehabilitation is a whole-of-mine-life process, including the planning, resourcing and operational activities associated with decommissioning, remediating, constructing and revegetating a disturbed area to achieve an agreed use. The process typically culminates in tenement relinquishment.

BHP Billiton Iron Ore's regional management approach provides the platform to plan mine closure at a regional scale.

The process is iterative and depends on project complexity and scale. The process may result in a clear closure option being identified in the early phases of a project life, or it may result in a directional closure strategy to be refined as more information becomes available during the life of the mine.

Once a Derived Proposal, including divestment and relinquishment, has been completed and signed off by the relevant parties within BHP Billiton Iron Ore (and third parties as applicable), BHP Billiton Iron Ore will no longer be bound by the requirements of this Strategic Proposal for the specific site, provided that completion criteria have been met.

## 12.3 Environmental Performance

Monitoring programs are designed and implemented to determine the effectiveness of BHP Billiton Iron Ore's controls in achieving the Strategic Proposal and EPA objectives by measuring and reporting against relevant performance criteria (e.g. targets, triggers or thresholds). The development of criteria is included within the first step (Define) of adaptive management. As proposed in the second step of adaptive management (Plan), these criteria will be incorporated into management plans at the Derived Proposal stage. Monitoring (step three of adaptive management) against performance criteria will occur during construction and operations and into closure and rehabilitation.

In circumstances where the results of monitoring programs indicate performance criteria are not being met, the management measures will be reviewed and, where required, amended in accordance with BHP Billiton Iron Ore's adaptive management steps four and five (see Figure 72).

### 12.3.1 RISK EVALUATION

BHP Billiton has in place a governing risk management GLD (GLD.017), which stipulates the performance requirements for the assessment, control, monitoring and reporting of material risks. An example of a material risk for a Strategic Proposal would be the loss of BHP Billiton Iron Ore's licence to operate, which would occur if significant breaches of environmental Ministerial conditions occurred.

Monitoring data and compliance requirements are closely examined through the risk evaluation process to assess material risks posed if the monitoring targets are not met.

### 12.3.2 AUDITS

BHP Billiton Iron Ore will regularly measure implementation of the Strategic Proposal against the Ministerial conditions. For individual projects that have obtained approval to proceed, BHP Billiton Iron Ore will audit performance against the Ministerial conditions on an annual basis.

BHP Billiton Iron Ore undertakes annual internal audits against GLD compliance and puts in place measures to correct any non-conformances. Such audits identify, for example, where non-compliances with GLD.009 Environment (BHP Billiton 2014) occur. Where applicable, opportunities for improvement and corrective actions are established to rectify identified non-compliances.

### 12.3.3 REPORTING

BHP Billiton Iron Ore's environmental reporting and review components include compliance reporting, a corporate reporting program, internal environmental event reporting and notification of emergencies and events.

BHP Billiton Iron Ore's Annual Environmental Report is the Company's primary document for reporting its overall annual environmental compliance performance. In addition to compliance reporting, BHP Billiton reports its Group-wide sustainability performance in the BHP Billiton Annual Sustainability Report.

# 13 STAKEHOLDER CONSULTATION

BHP Billiton Iron Ore undertakes regular and ongoing stakeholder engagement as part of its core business activities. BHP Billiton’s Community GLD sets out the Company’s approved mandatory and minimum performance requirements for community engagement (BHP Billiton 2015). BHP Billiton aims to facilitate regular, open and honest dialogue to understand expectations, concerns and interests of stakeholders and to incorporate them into business planning to help build strong, mutually beneficial relationships.

During development of the Strategic Proposal over the past three years, BHP Billiton Iron Ore has undertaken targeted stakeholder and community engagement based on interest and proximity to the project location. A summary of the key stakeholders identified for the Strategic Proposal is provided in Table 86.

**Table 86: Strategic Proposal key stakeholders**

STAKEHOLDER GROUP	KEY REPRESENTATIVES OR MEMBERS
<b>State Government</b>	
WA Ministers	Premier, Minister for State Development Minister for Environment; Heritage Minister for Mines and Petroleum Minister for Water Minister for Regional Development; Lands Other ministers as required
Government-owned Corporations and Organisations	Pilbara Development Commission
Opposition	Leader of the Opposition; Shadow Ministers; other relevant members
Elected Representatives	Member for Pilbara Members for Mining and Pastoral Region
Agencies and Departments	Department of Environment Regulation Department of Parks and Wildlife Department of Aboriginal Affairs Department of Mines and Petroleum Department of Planning Department of Premier and Cabinet Department of Regional Development Department for State Development Department of Transport Department of Water Office of the Environmental Protection Authority Port Hedland Port Authority
<b>Commonwealth Government</b>	
Ministers	Minister for the Environment (Decision-making Authority for the Proposal)
Departments	Department of the Environment (formerly DSEWPaC)
Commonwealth Members	Key Commonwealth Members, WA Commonwealth Members, WA Senators

STAKEHOLDER GROUP	KEY REPRESENTATIVES OR MEMBERS
<b>Local Government</b>	
Local Organisations	Pilbara Regional Council
Towns and Shires	Town of Port Hedland Shire of East Pilbara Shire of Ashburton
<b>Community</b>	
Community Groups and Associations	Newman Community Consultative Group Port Hedland Community Consultative Group Newman Visitor Centre
Local Residents	Newman community Port Hedland community Jigalong and other Aboriginal communities
Traditional Owners, Native Title Claimants, and Representative Bodies	Banjima Native Title Aboriginal Corporation Banjima Implementation Committee Kariyarra people Karlka Nyiyaparli Aboriginal Corporation Nyiyaparli Implementation Committee Ngarlawangga people Palyku people Yinhawangka Aboriginal Corporation Yinhawangka Implementation Committee Yamatji Marlpa Aboriginal Corporation
<b>Non-Government Organisations (NGOs)</b>	
Environment NGOs	Care for Hedland Environmental Association Conservation Council of Western Australia Gondwanalink Greening Australia Rangelands Natural Resource Management Group Wildflower Society of Western Australia
<b>Industry</b>	
Peak Bodies	Chamber of Minerals and Energy Newman Chamber of Commerce and Industry Port Hedland Chamber of Commerce and Industry
Industry Association	Association of Mining and Exploration Companies
<b>Landholders</b>	
Landholders	Pastoral leaseholders and managers
<b>Media</b>	
News Media	National, state and local news media (particularly, <i>The Australian</i> , <i>The West Australian</i> , <i>Pilbara Echo</i> , <i>North West Telegraph</i> )
<b>Other</b>	
Independent Agencies	Commonwealth Scientific and Industrial Research Organisation (CSIRO)

# 14 COMPLIANCE WITH ESD COMMITMENTS

This PERSP has been prepared in accordance with the ESD (BHP Billiton Iron Ore 2013). All studies identified in the ESD have been completed. Table 87 provides information on the ESD requirements and the environmental factors that have been addressed.

**Table 87: Environmental Scoping Document – Overview of Requirements**

OVERVIEW OF THE PERSP REQUIREMENTS AS SPECIFIED IN THE ESD	RELEVANT CHAPTER (C) / SECTION (S) OF PERSP						
	FLORA AND VEGETATION	TERRESTRIAL AND SUBTERRANEAN FAUNA	HYDROLOGY	ENVIRONMENTAL QUALITY AND LANDFORMS	AMENITY	AIR QUALITY	INTEGRATING FACTORS
Describe the methods used and provide an overview of the results of baseline assessments and consolidate the information provided by historical datasets. Provide consolidated mapping and predictive modelling (for important features).	C. 7 S. 8.1.3	C. 7 S. 8.1.4 S. 8.1.5	C. 7 S. 8.2.2	C. 7 S. 8.1.6	C. 7 S. 8.3.4 S. 8.3.5	C. 7 S. 8.4.2 S. 8.4.3	C. 7 S. 8.5
Identify conservation species and communities or important features or assets.	S. 8.1.3.1	S. 8.1.4.1 S. 8.1.5.1	S. 8.2.2.1	N/A	S. 8.3.4.1 S. 8.3.5.1	S. 8.4.2.1	N/A
Develop conceptual surface water and groundwater and environmental interface models.	N/A	N/A	S. 8.2.2 App 7	N/A	N/A	N/A	N/A
Outline closure and rehabilitation research and monitoring programs undertaken by BHP Billiton Iron Ore in the region.	N/A	N/A	N/A	N/A	N/A	N/A	S. 8.5.2.3
Undertake an assessment of the regional context and extent of impacts based on indicative footprints and regional mapping, predictive mapping, modelling including an assessment of the cumulative impacts; and assess potential impacts that are to be managed throughout the life of the Strategic Proposal.	S. 8.1.3	S. 8.1.4 S. 8.1.5	S. 8.2.2	S. 8.1.6	S. 8.3.4 S. 8.3.5	S. 8.4.2 S. 8.4.3	S. 8.5
Establish outcome-based management objectives, and develop the Regional Management Strategy (regional management approach) <sup>2</sup>	C. 6 C. 7 S. 8.1	C.6 C. 7 S. 8.1	C.6 C. 7 S. 8.2	C.6 C. 7 S. 8.1	C.6 C. 7 S. 8.3	C.6 C. 7 S. 8.4	C.6 C. 7 S. 8.5
Assess against EPA objectives and policy context.	S. 8.1 C. 9 App 2	S. 8.1 C. 9 App 2	S. 8.2 C. 9 App 2	S. 8.1 C. 9 App 2	S. 8.3 C. 9 App 2	S. 8.4 C. 9 App 2	S. 8.5 C. 9 App 2

1. Integrating factors are rehabilitation and decommissioning and offsets, as explained in Section 8.5.

2. The Strategic Proposal uses a more detailed Regional Management 'Approach' rather than a 'Strategy'.

The description of the existing environment within Chapter 5 of the PERSP provides information on the environmental and social background within the Project Definition Boundary and, where relevant, the wider Pilbara. The information presented is based on a regional, whole-of-landscape approach and presents consolidated information from studies completed for BHP Billiton Iron Ore tenements across the Pilbara, with more specific information provided on key aspects that are potentially subject to influence from the Strategic Proposal. In describing the existing environment, BHP Billiton Iron Ore has drawn upon more than 50 years

of environmental surveys (water resource, biological, and geological), assessments and monitoring within the Pilbara. This has included an ongoing program of studies and investigations, including a suite of recent environmental initiatives and the collection and collation of data.

BHP Billiton Iron Ore has undertaken modelling of habitat prospectivity (subterranean fauna and short-range endemics), of habitat for selected conservation-significant flora and fauna species, and of landscape ecohydrological units, as well as ecohydrology conceptualisation modelling for key assets. Models have been developed for noise, air quality and visual amenity. Where relevant, BHP Billiton Iron Ore has sought collaboration with government agencies, universities and other research institutes (e.g. CSIRO), consultants and other mining companies to develop these models and baseline studies.

From the above, BHP Billiton Iron Ore considers that this PERSP complies with the commitments documented in the ESD.