BMA Caval Ridge Mine Project

Change Request
Accommodation Location and Capacity

September 2010

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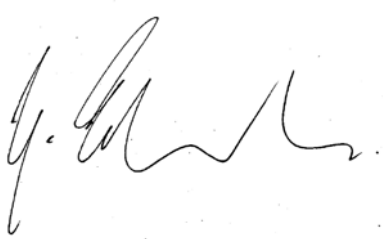

Reviewer: Gavin Edwards, Senior Planner / Principal Date: 27 September 2010

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Abbreviations

BMA	BM Alliance Coal Operations Pty Limited
BPS	Belyando Planning Scheme 2008
CRM	Caval Ridge Mine
DA	Development Application
DA	Development Application
DERM	Department of Environment and Resource Management
DEWHA	Department of the Environment, Water, Heritage and the Arts
DIP	Department of Infrastructure and Planning
DP	Development Permit
DTMR	Department of Transport and Main Roads
EA	Environmental Authority
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPA	*Environmental Protection Act 1994 (Qld)*
EPBCA	*Environment Protection and Biodiversity Conservation Act 1999* (Comm)
EPR	*Environmental Protection Regulation 2008* (Qld)
ERA	Environmentally Relevant Activity
GQAL	Good Quality Agricultural Land
IDAS	Integrated Development Assessment System
IRC	Isaac Regional Council
MCU	Material Change of Use
MIA	Caval Ridge Mine Industrial Area
ML	Mining Lease
MLA	Mining Lease Application
NCA	*Nature Conservation Act 1992* (Qld)
OW	Operational Works
PA	Preliminary Approval
PMAV	Property Map of Assessable Vegetation
RAL	Reconfiguring a Lot
RE	Regional Ecosystem
RPS	RPS Australia East Pty Ltd
SBSWMP	Site Based Stormwater Management Plan
SDPWOA	*State Development and Public Works Organisation Act 1971* (Qld)
SPA	*Sustainable Planning Act 2009* (Qld)
SPR	*Sustainable Planning Regulation 2009* (Qld)
VMA	*Vegetation Management Act 1999* (Qld)
WA	*Water Act 2000* (Qld)

Executive Summary

This report sets out proposed changes to the Caval Ridge Mine Project, procedural requirements for assessment of these changes and an analysis of the effects of the changes.

Caval Ridge Mine Description

BMA proposes to develop the Caval Ridge Mine (CRM) which, travelling by road, is approximately 17km south of Moranbah and approximately 160 km from Mackay. The CRM includes a new coal mine, coal handling and processing infrastructure and associated accommodation and services for the CRM workforce.

The CRM Project is one part of BMA's broader Bowen Basin Coal Growth Project (BBCGP). The BBCGP has been designated by the Queensland Government as a significant project under the *State Development and Public Works Organisation Act 1971* (SDPWOA).

Previous Assessment Process

Terms of Reference (ToR) issued for the BBCGP in November 2008 allow for the completion of phased Environmental Impact Statements (EISs) addressing different components of the Project.

An EIS has been prepared and advertised for the CRM Project. A Supplementary EIS (SEIS) was also prepared by BMA in response to issues raised during the public notification of the EIS. The Coordinator-General has completed assessment of the CRM Project under Part 4 of the SDPWOA, with the Coordinator-General's Report released on 9 August 2010.

Process for Evaluation of Change

The SDPWOA provides the process for the Coordinator-General to evaluate changes to a declared significant project that has been assessed and finalised by the Coordinator-General.

The Coordinator-General's Report on the EIS/SEIS, and the Coordinator-General's Change Report both have effect for the CRM Project. However, the Change Report prevails to the extent of any inconsistency.

Description of the Changed Project

This report describes proposed alterations to the CRM Project as assessed by the Coordinator-General in relation to locating and accommodating the CRM workforce. This change request is made to the Coordinator-General pursuant to Section 35C of the SDPWOA. The proposed changes also take into account a number of matters that arise through the Coordinator-General's Report on the Caval Ridge EIS/SEIS that are associated with the accommodation provision.

The proposed changes to the CRM Project that comprise the first change request to the Coordinator-General pursuant to Part 4 Division 3A SDPWOA are:

(1) Establishing a permanent a Accommodation Village at Buffel Park, comprising two (2) separate villages, being a permanent Construction Village for the CRM construction workforce and ongoing periodic maintenance personnel, and a second, co-located Operations Village for the operational workforce associated with the CRM.

The permanent construction and Operations Villages will operate on a FIFO basis. Both villages will also accommodate staff that run and manage the facilities.

The establishment of Buffel Village will be in addition to the existing option of establishing a temporary Construction Village accommodation at Denham Village. Denham Village is referred to in the Coordinator-General's report of 9 August 2010. That is, as a consequence of this change request, the Construction Village will be established at either Denham Village or Buffel Park, with it being temporary or permanent respectively, depending on its location.

This change request does not seek to change the existing approval for a Construction Accommodation Village at Denham Village. The assessment of Denham Village by the Coordinator-General in the Coordinator-General's report related to impact mitigation of visual, traffic and intersection impacts, as the proponent has existing approvals under ML1775 to locate an accommodation camp at the Denham Village site. Coordinator-General imposed conditions under Schedule 1 of the report dated August 2010 for Denham Village continue despite this change request, and are relevant if Denham Village is chosen for any aspect of the Construction Village.

Notwithstanding, there is the possibility that a temporary village (referred to as a fly camp) accommodating the workforce responsible for the construction of Buffel Village and early site works may need to be established at Denham Village. If this eventuates, the proponent would be prepared to negotiate with the Coordinator-General on the setting of appropriate conditions.

For clarity, this change application does not seek to substitute the existing approval for Denham Village with approval for Buffel Village, but retain the ability to accommodate the construction workforce at Denham Village if required due to any approval timing delays for Buffel Village.

In support of this change request are two (2) Development Applications for the temporary fly-camp and permanent Construction Village and for an Operations Village which together comprise Buffel Village. Should the Coordinator-General favourably consider the change request then these documents would be lodged with Isaac Regional Council as two (2) separate, but contemporaneous SPA development applications pursuant to Part 4 Division 4 of the SDPWOA.

With each village being a separate application, conditions relating specifically to each application can be imposed. This approach provides the flexibility that the proponent is seeking for the Construction Village, and establishes the application and approval framework that takes into consideration the existing Denham Village approval. The proponent would be prepared to negotiate with the Isaac Regional Council on the setting of appropriate conditions.

(2) Accommodating periodic maintenance personnel at the proposed Construction Village at Buffel Park.

The Coordinator-General recommended that visiting maintenance and overhaul personnel be accommodated at operational villages. It is submitted that this recommendation was imposed because Denham Village is required to be decommissioned within 12 months of commencement of the CRM.

With the availability of Buffel Park, proposed as a permanent Accommodation Village for construction and operations personnel, capacity planning for periodic maintenance personnel is intended within this Construction Village should Denham Village not proceed. This arrangement is proposed because periodic maintenance personnel only commence once the CRM becomes operational, and their involvement continues periodically for the life of the CRM. Due to the scale of the proposed Construction Village at Buffel Park, sufficient capacity planning exists for these future shut down crews.

(3) Adjustment to workforce numbers.

With the introduction of Buffel Village at Buffel Park the permanent Construction Village is proposed at 2000 rooms and the permanent Operations Village at 500 rooms.

The EIS and SEIS described the workforce for the CRM in terms of personnel. The proponent in preparing this change request has reflected on this approach, and considers a more meaningful description of scale of villages is in terms of rooms. By describing the village sizes in terms of rooms gives flexibility in terms of workforce numbers and functionality of the villages. The

proponent confirms as part of this change request that the peak operating capacity of the villages will not exceed the number of rooms.

Reasons for the Proposed Changes

The proposed changes to the CRM Project compared to those set out in the EIS/SEIS arise in response to opportunities to establish an improved provision of accommodation for the CRM Project workforce which is considered to have a better relationship with Moranbah, the mine site and infrastructure requirements.

The reasons for these proposed changes reflect:

- The Coordinator-General's Imposed Condition 14(e) that requires BMA to provide sufficient construction camp accommodation capacity at each stage of the CRM development;
- A response to the Coordinator-General's Recommendation that capacity planning for operational worker villages for the BBCGP project allow for the periodic accommodation needs of visiting maintenance personnel (such as the large dragline overhaul crews) by the inclusion of this capacity within a permanent Construction Village;
- BMA's acquisition of Buffel Park and analysis of the opportunities presented by the property;
- Adjustment of the scale of the housing requirements in respect of the revised workforce projections, FIFO strategy and availability of urban land in Moranbah;
- Resolution of traffic impacts associated with construction traffic movements on Moranbah Access Road;
- The avoidance of Denham Village's visual impacts as raised by the Coordinator-General;
- The opportunity to mitigate noise and dust impacts on the Construction Village arising from construction of the CRM; and
- The opportunity to co-locate the Construction Village and Operations Village to share principal pieces of infrastructure, thereby achieving a cost effective construction and management solution.

The proposal for the Construction Village is driven by the need to accommodate the following:

- A contingency workforce to maintain project delivery schedule;
- Village management and support staff;
- Village construction workforce (initially in the fly camp then relocated into the Construction Village);
- Workforce constructing miscellaneous CRM off-lease infrastructure;
- An allowance for visiting periodic maintenance personnel.

The Operations Village allocation considered in the EIS/SEIS addressed only the mining operations workforce, and did not fully address the requirement to house other associated personnel, such as

- Direct mining contractors;
- Village management; and
- Visiting BMA/BHP Billiton personnel and associated contractors/visitors.

Accommodation for each of these elements of the CRM workforce is provided through the Buffel Village Operations Village proposal.

Effect of Proposed Changes

This report assesses as necessary the issues raised in the ToR for the BBCGP, the EIS, SEIS and the Coordinator-General's Report in response to the implications of the proposed changes.

The effects of the proposed changes include:

- Use of Buffel Village to accommodate the workforce;
- Use of land currently zoned Rural;
- Changed traffic conditions from those identified in the EIS and SEIS;

- Removal of vegetation on the site of the Accommodation Villages;
- Management of air quality impacts from the CRM on future occupiers;
- Management of noise impacts from the operation of the Accommodation Villages;
- Treatment, disposal and reuse of wastewater from the Accommodation Villages; and
- Management of the visual impact of the proposals within the rural landscape.

These impacts, which relate to this requested change, and a summary of mitigation measures are outlined in Section 6 of this report. BMA will provide a separate Change Request to the Coordinator-General to provide a 100% FIFO operational workforce.

It is submitted that the use of the Buffel Village site is consistent with the land use planning intents for the Buffel Village site, given its spatial relationship with the Caval Ridge mine site and the Belyando Planning Scheme's support for accommodating workers in the Rural Zone where related to mining and natural resource activities. The construction and operational effects of the Accommodation Villages are able to be addressed through detailed Management Plans to be prepared and implemented under Development Permits to be issued pursuant to the *Sustainable Planning Act 2009* following assessment of the proposed changes under the SDPWOA.

Conclusions and Recommendations

It is submitted that this report provides the necessary detail on the proposed changes to the CRM Project to allow the Coordinator-General to evaluate and support the proposed changes.

This conclusion has been reached as the proposed changes provide for improved accommodation arrangements for the construction and operational workforces, address a number of elements raised in the Coordinator-General's Report regarding accommodation requirements, and provide a better solution to amenity, traffic and visual impacts than the accommodation options put forward under the EIS/SEIS.

1 Introduction

BMA proposes to develop the Caval Ridge Mine (CRM) which, travelling by road, is approximately 17km south of Moranbah and approximately 160 km from Mackay. The CRM includes a new coal mine, coal handling and processing infrastructure and associated accommodation and services for the CRM workforce. The CRM is anticipated to have a working life of approximately 30 years.

The CRM Project is part of BMA's broader Bowen Basin Coal Growth Project (BBCGP). The BBCGP has been designated by the Queensland Government as a significant project under the *State Development and Public Works Organisation Act 1971* (SDPWOA). ToR issued for the BBCGP allow for the completion of a phased EIS addressing different components of the Project.

An EIS has been prepared and advertised for the CRM Project. The Coordinator-General has completed assessment of the CRM Project, with the Coordinator-General's Report released in August 2010.

Accommodation is required to house the CRM construction and operational workforces.

This report describes proposed alterations to the CRM Project as assessed by the Coordinator-General in relation to accommodating the workforce, and therefore is a change request made to the Coordinator-General under Section 35C of the SDPWOA. These changes also take into account a number of matters that arise through the Coordinator-General's Report on the Caval Ridge EIS/SEIS that are associated with accommodation provisions.

This change request seeks the following changes:

(1) Establishing Buffel Village at Buffel Park, comprising of a temporary fly-camp and permanent Construction Village and a permanent Operations Village;
(2) Accommodating periodic maintenance personnel at the proposed Construction Village as part of Buffel Village; and
(3) Adjustment to workforce numbers.

The location of Buffel Village is shown as Figure 1.

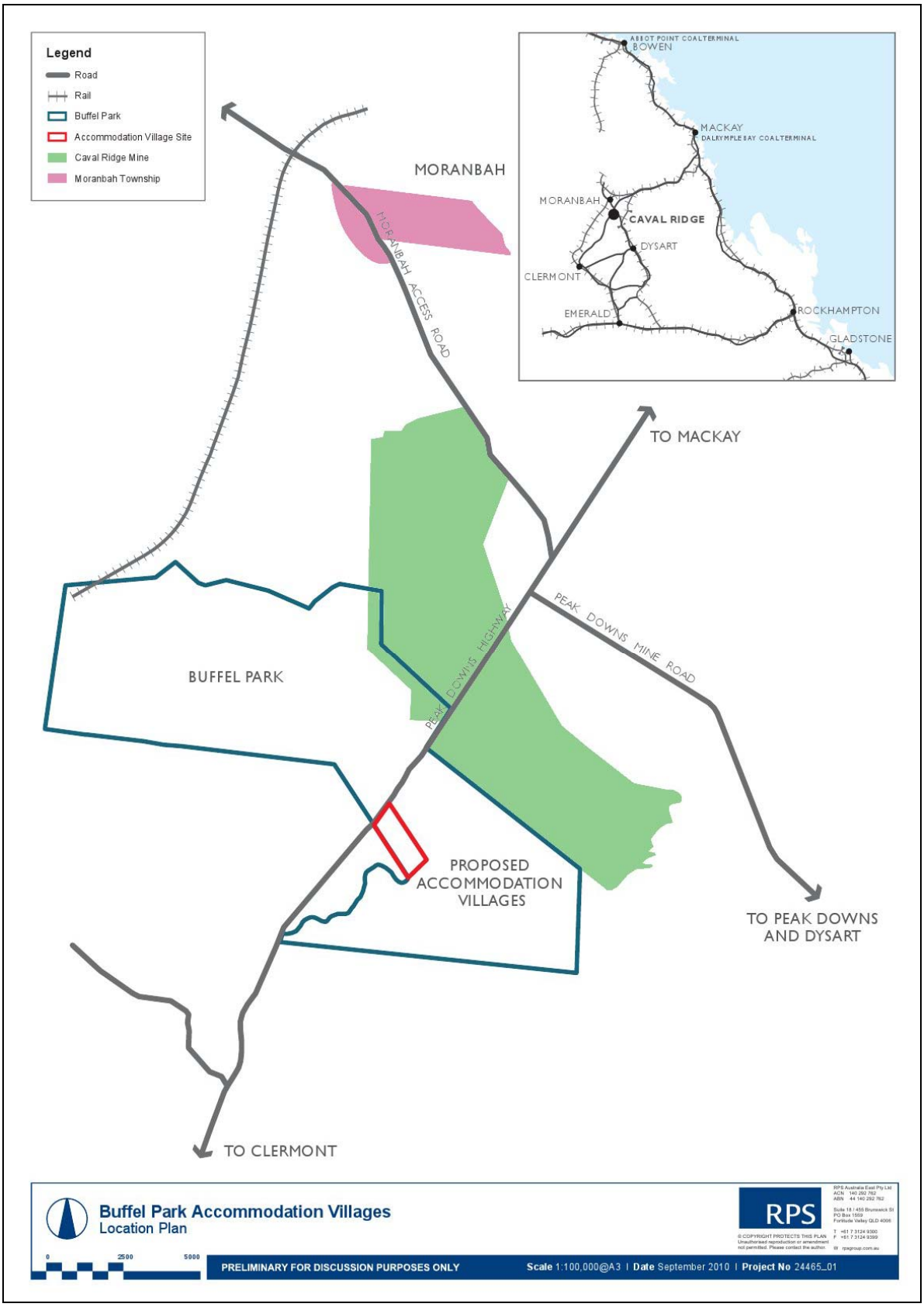
These changes address:

- The Coordinator General's Imposed Condition 14(e) that requires BMA to provide sufficient Construction Village accommodation capacity at each stage of the CRM development; and
- The Coordinator General's Recommendation 9 that capacity planning for operational worker villages for the BBCGP allow for the periodic accommodation needs of visiting maintenance personnel (such as the large dragline overhaul crews); and
- The Coordinator General's Imposed Condition 14(d) that requires any new Accommodation Village proposal for the CRM to be assessed under the existing ToR of this significant project for the BBCGP.

This request addresses accommodation for the Caval Ridge construction and operations workforce. BMA will provide a separate Change Request to the Coordinator-General to provide for a 100% FIFO operational workforce.

Buffel Village is proposed to be established on BMA owned property referred to as "Buffel Park", to provide accommodation for the construction and operational workforces for the CRM Project. The construction village is proposed to be co-located with the operations village. The villages will share infrastructure and services to improve efficiency of occupation and overall sustainability as part of Buffel Village. Buffel Village is to be located on part of the Buffel Park property south-east of Peak Downs Highway.

Figure 1: Village Location



This request also does not alter the existing approval for a construction village and/or fly camp at Denham Village. This change request is for the addition of an option, not a substitution.

This report addresses, where relevant, issues raised in the ToR for the BBCGP, the EIS, SEIS and the Coordinator-General's Report. As required under Section 35E of the SDPWOA, this report provides:

- A description of the proposed changes and their effects on the Project (Section 35E(a);
- Reasons for the proposed changes (Section 35E(b)); and
- The environmental impacts of the proposed changes (Sections 35C and 35H(c)).

It is submitted that this report provides the necessary detail on the proposed changes to the CRM Project to allow the Coordinator-General to evaluate and support the proposed changes (in accordance with Section 35E(c)), due to amongst other things, the improved accommodation arrangements for the construction and operational workforces, and that the change request addresses a number of conditions and a recommendation in the Coordinator-General's report relating to accommodation requirements.

2 Project Background

2.1 Bowen Basin Coal Growth Project

BMA's BBCGP involves the growth of BMA's coal mining operations in the northern section of the Bowen Basin, centred on Moranbah. The BMA BBCGP Initial Advice Statement to the Coordinator-General outlined the production of an additional 21.5 Mtpa of coal products through the Daunia, Caval Ridge and Goonyella Riverside mines.

The Coordinator-General has declared the BBCGP a significant project under the SDPWOA. The resulting ToR allow for the completion of a number of EISs to address different parts of the project.

2.2 The Caval Ridge Project

The CRM will be a new open cut coal mine north of and adjacent to BMA's existing Peak Downs Mine. The mine area is approximately 17 km long and 4 km wide (excluding supporting infrastructure), and spans the Peak Downs Highway. The northern most boundary of the mine will be approximately 6 km from Moranbah, while the mine industrial area (MIA) will be about 16 km from Moranbah, situated on the Peak Downs Highway.

The CRM site is located north of the existing operational BMA Peak Downs Mine and covers the northern extent of the BMA Mining Lease (ML1775). A new mining lease application (MLA70403), immediately to the west of ML1775, will be used for site infrastructure and supporting activities.

The proposed CRM will be accommodated on both ML1775 and a new mining lease (presently MLA70403).

The life of the mine is expected to be at least 30 years.

The CRM has been assessed and approved by the Queensland Government as a part of the BBCGP significant project under the SDPWOA.

2.2.1 Workforce Numbers in the EIS

The EIS documentation envisaged that the CRM would require a construction workforce of 1200 and an operational workforce of 495 persons. As noted in the Coordinator-General's Report (Section 5.11.3.1), these numbers comprised:

- Construction Phase: direct proponent employees, direct contractors engaged on the mine site, and pre-defined number of project infrastructure (e.g.. road, rail, water pipeline, electricity etc.) workers; and
- Operational Phase: mine-site workers only.

2.2.2 Denham Village

The EIS/SEIS for the CRM Project identify Denham Village, located on Moranbah Access Road, as a solution for the temporary accommodation of the construction workforce for the CRM.

Denham Village was approved independently of the CRM EIS, through an amendment of the Peak Downs Mining Lease (ML1775), and is included in the Peak Downs Plan of Operation for 2009-2010. Section 5.12.1 of the Coordinator-General's Report flags that the new CRM Environmental Authority and Plan of Operations would need to address impacts associated with the construction of Denham Village and its associated infrastructure.

The Coordinator-General Report acknowledges the approval of Denham Village, and notwithstanding this,

recommended that:

- Denham Village be decommissioned 12 months after the commencement of the operation of the CRM; and
- BMA consider capacity planning for operational worker villages to allow for the periodic accommodation needs of visiting maintenance personnel in addition to operational personnel.

It is noted that the Denham Village location lies within an area where the DERM adopted guideline for dust deposition and the air quality objectives in the EPP(Air) objective of 50µg/m^3 for PM_{10} are not satisfied.

3 Statutory Requirements

3.1 Previous Assessment

3.1.1 State Matters

On 4 July 2008 the Coordinator-General declared the BMA BBCGP a significant project for which an EIS is required in accordance with Part 4 of the SDPWOA.

The ToR for the BMA BBCGP set out a phased process for assessing the environmental impacts of each element of the BMA BBCGP. As discussed earlier, the EIS/SEIS for the CRM Project has been completed.

The Coordinator-General's Report on the Caval Ridge EIS was issued on 9 August 2010.

3.1.2 Commonwealth Matters

The Department of Environment, Water, Heritage and the Arts (DEWHA) considered a referral assessment for the CRM under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA).

The Commonwealth Minister of Environment, Heritage and the Arts determined on 23 September 2008 that the CRM Project constitutes a controlled action under Section 75 of the EPBCA, as there is likely to be a significant impact on matters of national environmental significance.

The completed CRM EIS/SEIS and the Coordinator-General's Report have been referred to the Commonwealth Minister for assessment under the EPBCA. It is anticipated that a Commonwealth decision will be issued in early October 2010.

3.2 EIS Change Process

Sections 35B to 35L of the SDPWOA sets out how changes may be made to an approved significant project and the assessments required.

The SDPWOA requires written, descriptive documentation of the changes with sufficient supporting information to enable assessment of the effects on the Project. The SDPWOA does not, at face value, require a full re-assessment of the project against the ToR. Under Section 35E, the degree of detail presented in the request to change should be as expansive as required to ensure that the impacts may be properly considered by the Coordinator-General.

As per Condition 14(d) of the Coordinator-General's Report, this report addresses, where relevant, issues raised in the ToR for the BBCGP, the EIS, SEIS and the Coordinator-General's Report. As required under Section 35E of the SDPWOA, this report provides:

- A description of the proposed changes and their effects on the Project (refer to Section 4);
- Reasons for the proposed changes (refer to Section 5); and
- The environmental impacts of the proposed changes on the Project (refer to Section 6).

This report provides sufficient detail on the proposed changes to allow the Coordinator-General to evaluate the proposed changes and its effects on the Project.

In making this evaluation, the Coordinator-General must give consideration to the criteria set out in section 35H of the SDPWOA.

The SDPWOA gives the Coordinator-General the ability to determine whether public notification is required. It is suggested that as the proposal ultimately involves development that would be subject to Impact

Assessment under the *Sustainable Planning Act 2009* (SPA), that public notification would be appropriate, but limited to the normal SPA and Integrated Development Assessment System (IDAS) timeframe of fifteen (15) business days.

The Coordinator-General's assessment of the changes is termed the Coordinator-General's Change Report, and under section 35I of the SDPWOA, the Coordinator-General's Change Report may give rise to conditions and/or recommendations in a similar manner to the Coordinator-General's original Report.

3.3 Relationships between the SPA and the SDPWOA

Following the issue of the Coordinator-General's Report on an EIS (or a Change Report), any necessary approvals under other legislation must be sought, such as the SPA or Environmental Authorities under the *Environmental Protection Act 1994*.

The SDPWOA sets out in Sections 36 to 42 how the EIS process and the IDAS processes interact where a significant project involves development that requires approval. Key points are as follows.

(1) Under Section 37(1), where a Development Application is for a Material Change of Use (MCU) or requires Impact Assessment:

   (a) the Information and Referral Stage and the Notification Stage of IDAS do not apply to the application (Section 37(1));

   (b) there are no referral agencies under the SPA for the application (Section 37(1));

   (c) a properly made submission about the EIS is taken to be a properly made submission about the application under IDAS (made during the submission period for the EIS or a subsequent Change) (Section 37(1));

   (d) the Coordinator-General's report is taken to be a concurrence agency's response for the application under IDAS (until such time as the Development Approval takes effect) (Section 37(d)(i)); and

   (e) the Coordinator-General may exercise the powers of entities which would otherwise have been a concurrence agency for the application, i.e. the Coordinator-General assumes the roles and responsibilities of Concurrence Agencies under the SPR (Section 37(1)(d)(ii).

(2) Under Section 39, the Coordinator-General's Report may state for an Assessment Manager, the Isaac Regional Council (IRC) in this instance:

   (a) the conditions that must attach to the development approval, or

   (b) that the development approval must be for part only of the development, or

   (c) that the approval must be a preliminary approval only.

(3) The Decision Stage of the IDAS for the application:

   (a) starts upon receipt of the Coordinator-General's Report by the Assessment Manager (Section 38(a));

   (b) allows the Assessment Manager to assess the application in the context of the conditions set by the Coordinator-General (Section 39).

   (c) In setting conditions for a future IDAS approval, the Coordinator-General can designate an agency that is to have jurisdiction for that condition. This agency becomes a concurrence agency for that condition under the SPA (Sections 39(6) and 41).

Accordingly, under Section 268 of the SPA, the Acknowledgement Notice would be prepared on the basis that normal IDAS referral and public notification requirements do not apply due to the provisions outlined above. Following issue of the Acknowledgement Notice, the Development Application(s) would progress straight to the Decision Stage.

3.4 Required Approvals

The proposed changes set out in this report seek the establishment of:

- A 500 room temporary fly camp and a 2000 room permanent Construction Village to be located at the proposed Buffel Village; and
- A 500 room permanent Operations Village to be located at the proposed Buffel Village.

The proposed changes are "off lease" and therefore fall generally within the remit of the SPA and other legislation that use the IDAS process (as identified in Schedule 3 of the SPR).

Table 1 below summarises the key approvals and referral agencies that are required to facilitate the Buffel Village option. These approvals will be supported by related approvals, licences and permits that deal with the detailed design and operation of the village.

Table 1: Key Approvals associated with the Proposed Changes

Legislation	Relevant Authority and Role	Action / Approval
COMMONWEALTH		
Environment Protection and Biodiversity Conservation Act 1999	DEWHA (Administering Authority)	Approval of the controlled action and EIS (under bilateral agreement)
STATE		
State Development and Public Works Organisation Act 1971	DIP (Administering Authority)	Approval of the EIS
IDAS		
Belyando Planning Scheme	Isaac Regional Council (Assessment Manager)	Material Change of Use / Operational Works
Environmental Protection Act 1994	DERM Concurrence Agency	Environmentally Relevant Activity (ERA) 63 Sewage Treatment Plant
Vegetation Management Act 1999	DERM (Concurrence Agency)	Clearing of native vegetation on freehold land
Transport Infrastructure Act 1994	DTMR (Concurrence Agency)	Proximity to a State controlled road Public transport in relation to scale of development
Electricity Act 1994 and the *Electrical Safety Act 2002*	Powerlink (Advice Agency)	Powerlink transmission line easements within the subject lot

3.4.1 Commonwealth Approvals

BMA will consult with the DEWHA in respect of any impacts on matters of national environmental significance associated with Buffel Village and undertake any appropriate action in respect of those impacts.

3.4.2 IDAS Development Approvals

Two Development Applications will seek Development Approvals for Buffel Village following the Coordinator-General's assessment of the requested changes. These will include:

(1) Construction Village Application:

(a) Temporary Fly Camp:

(i) Development Permit for a Material Change of Use for Accommodation Building (500 rooms) and Hotel, for a maximum relevant period of 24 months;
(ii) Development Permit for a Material Change of Use for an Environmentally Relevant Activity (ERA 63 – Sewage Treatment), for a maximum relevant period of 24 months;
(iii) Preliminary Approval for Building Works;
(iv) Preliminary Approval for Operational Work assessed against the Planning Scheme (earthworks, civil engineering, and landscaping);

(b) Construction Village (Permanent):

(i) Development Permit for a Material Change of Use for Accommodation Building (2000 rooms), Hotel and Shop (in stages);
(ii) Development Permit for a Material Change of Use for an Environmentally Relevant Activity (ERA 63 – Sewage Treatment) for the common servicing of both the Accommodation Villages (in stages);
(iii) Preliminary Approval for Building Works;
(iv) Preliminary Approval for Operational Work assessed against the Planning Scheme (earthworks, civil engineering, and landscaping);

(2) Operations Village Application:

(a) Operations Village (Permanent):
(i) Development Permit for a Material Change of Use for Accommodation Building (500 rooms), Hotel and Shop;
(ii) Development Permit for a Material Change of Use for an Environmentally Relevant Activity (ERA 63 – Sewage Treatment) for the common servicing of both the Accommodation Villages (in stages);
(iii) Preliminary Approval for Building Works; and
(iv) Preliminary Approval for Operational Work assessed against the Planning Scheme (earthworks, civil engineering, and landscaping).

It is anticipated that the Coordinator-General's Change Report will address these Development Applications, and will result in conditions being set in respect of Concurrence Agency matters, with directions and recommendations as to decisions and conditions given to the IRC as the identified Assessment Manager. Such conditions are discussed below in Section 7.3 and in Attachment F which proposes the introduction of Schedule 3A SPA Conditions to the Coordinator-General's Report.

The Concurrence Agency roles which will arise for the Development Applications are identified above in Table 1.

In order to provide further detail on these approvals, this Change Request is supported by two Development Applications (DAs), dealing with the construction and operational elements of Buffel Village. These DAs are contained in Attachment A and Attachment B respectively.

With respect to the DAs contained in Attachment A and Attachment B, the proponent reserves the right to change these in response to the Coordinator-General's Change Report prior to submission of the applications to the IRC.

4 Description of the Proposed Changes and their Effects on the Project

Section 35E(a) of the SDPWOA requires the proponent to describe the proposed changes and their effects on the project. This section provides the detail of the proposed changes.

4.1 Effects on the Project

As noted above, the proposed changes to the EIS/SEIS for the CRM Project entail:

- Locational changes –
  - » Location of the temporary fly camp and Construction Village (permanent) at the Buffel Village site (dependent on approval timing); and
  - » Location of the Operations Village (permanent) at the Buffel Village site (co-located with the Construction Village); and
- Capacity changes -
  - » Inclusion of periodic accommodation needs of visiting maintenance personnel within the Construction Village; and
  - » Adjustment to the accommodation capacity and workforce numbers.

Table 2 summarises the proposed changes from the EIS and SEIS. Each of these components are described and justified in turn.

4.2 Locational Changes

BMA's preferred option is to co-locate the Construction and Operations Villages at Buffel Park, to be known as Buffel Village.

Section 5 outlines the reasons for the change sought in respect of the Construction Village and the retention of two alternative solutions.

The change sought in respect of the Operations Village clarifies the location of the Operations Village from the concepts outlined in the EIS/SEIS.

4.2.1 Description of Buffel Village

BMA is proposing to co-locate a temporary fly camp, Construction Village and Operations Village on a site described as Lot 12 on SP151669, also known and referred to as Buffel Park. The villages are jointly referred to as Buffel Village.

The specific location of the proposed Buffel Village is on the south-eastern side of Peak Downs Highway to the south of the proposed CRM. The location and extent of the Buffel Village footprint is shown as Figure 1.

The use of this location is dependent upon obtaining necessary development approvals from IRC and Concurrence Agencies, and therefore the potential to accommodate CRM construction personnel at this site will be a function of approval timing.

The Buffel Village proposal involves:

- The initial establishment of a temporary "fly camp" to accommodate workers building Buffel Village and its associated infrastructure;
- Delivery of infrastructure and services to the site and the associated integration of such services with the infrastructure supporting the CRM Industrial Area (MIA) (located north of Buffel Park), including the return of treated wastewater to the mine.

- Operation of a sewerage treatment plant (scaled to service the construction and operations elements);
- A maximum of 2,500 permanent accommodation rooms, provided in stages, being;
  - **Construction Village:** 2,000 permanent rooms including ancillary dining, wet mess, recreation and infrastructure provision; and
  - **Operations Village:** 500 permanent rooms including ancillary dining, wet mess, recreation and infrastructure provision.

The proposed Accommodation Village responds to and incorporates the projected workforce numbers discussed below in Section 4.3.

The Buffel Village accommodation is for BHP/BMA employees and contractors and is not intended for use by parties not related to BHP/BMA operations.

Table 2: Summary of Changes

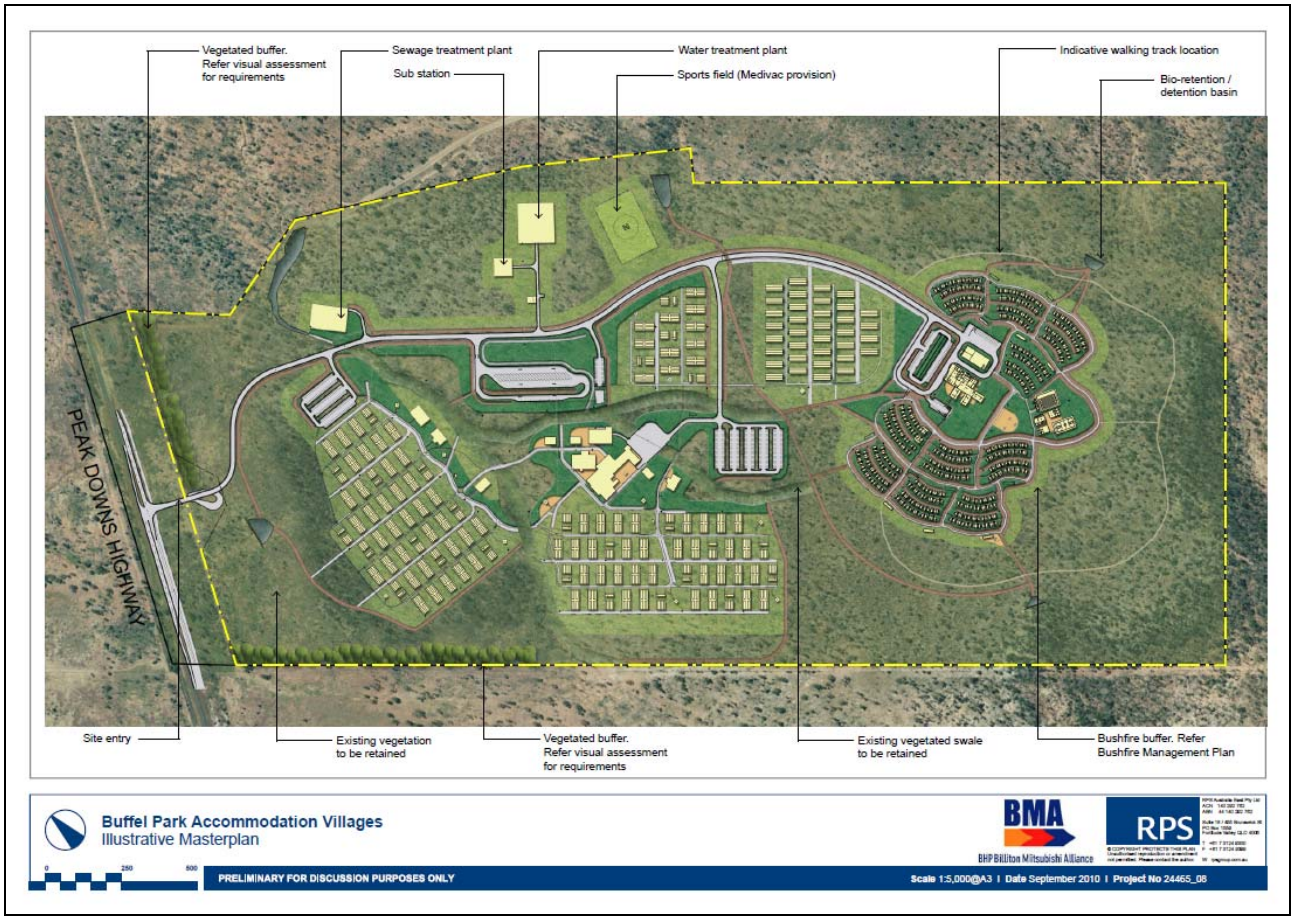
EIS	SEIS	Proposed Changes
Construction Workforce and Accommodation		
Peak: ▪ 1200 personnel	Peak: ▪ No change from EIS	Peak: ▪ 2000 rooms ▪ Includes periodic maintenance staff
Accommodation method: ▪ 90% FIFO or BIBO ▪ 5% currently in Moranbah ▪ 5% live locally	Accommodation method: ▪ No change from EIS	Accommodation method: ▪ No change from EIS
Location: ▪ Denham Village on ML1775	Location: ▪ No change from EIS	Location: ▪ Buffel Village on Lot 12 on SP151669 (permanent); or ▪ Denham Village on ML1775 (temporary)
Operational Workforce and Accommodation		
Peak: ▪ 495 personnel	Peak: ▪ No change from EIS	Peak: ▪ 500 rooms
Accommodation method: ▪ 70% FIFO ▪ 10% current residence (Moranbah) ▪ 20% in or around Moranbah	Accommodation method: ▪ No change from EIS	Accommodation method: ▪ No change from EIS
Location: ▪ Accommodation Village » Village in Moranbah (for 70% FIFO) ▪ Other Housing » Provided through BMA's housing strategy	Location: ▪ Accommodation Village » Village with suitable accessibility, not expected to be in Moranbah (for 70% FIFO) ▪ Other Housing » No change from EIS	Location: ▪ Accommodation Village » Village at Buffel Park on Lot 12 on SP151669 (for 70% FIFO) ▪ Other Housing » No change from EIS

4.2.2 Accommodation Village Masterplanning

Design development for the Accommodation Villages has been completed through a masterplanning exercise over the site which considered site constraints, environmental factors, infrastructure and servicing, the capacity, staging and sequencing requirements for each village.

The philosophy behind the design development of the masterplan has been to locate the Accommodation Villages within the existing bushland setting to the greatest degree possible. Where possible the design has been prepared to share services and facilities in order to minimise the environmental effects of the Accommodation Villages.

Figure 2: Village Layout



The Accommodation Villages Masterplan Structure (RPS Drawing 24465_09 dated September 2010), illustrated as Figure 2 and contained in Appendix C to the DA, illustrates the overall pattern of development, showing:

- The access and service road extending from the Peak Downs Highway into the site;
- The common infrastructure and services area located to the north of the service road;
- The Construction Village, including its core facilities as the western portion of the development footprint;
- The Operations Village, including its core facilities as the eastern portion of the development footprint; and
- Bushland and open space around the periphery of the site providing a landscape buffer, including areas where revegetation is proposed to minimise the visual impacts of the development and provide opportunities for active and passive recreation.

Construction Village

The proposed Construction Village is an accommodation centre for personnel constructing the CRM Project, together with providing on-going accommodation for periodic maintenance personnel. The accommodation to be provided will be en-suite single person quarters.

The village will provide dining, laundry, recreation facilities and small scale convenience shopping for the residents. It will also provide a "wet mess", where alcohol will be sold to residents. Such alcohol sales will not be available to non-residents.

Approximately 400 car parking bays and 30 short term bays will be provided for 2000 rooms. Bus shelters and bus turning facilities will be provided to service the village.

Operations Village

The proposed Operations Village is an accommodation centre for personnel working on the CRM Project (as identified below at Section 4.3.2). The accommodation to be provided will be en-suited single person quarters.

The village will provide dining, laundry, recreation facilities and small scale convenience shopping for the residents. It will also provide a "cafe", where alcohol will be sold to residents. Such alcohol sales will not be available to non-residents.

Approximately 150 car parking bays will be provided for 500 rooms. Bus shelters and bus turning facilities will be provided to service the village.

4.2.3 Staging and Sequencing

Construction of the CRM is expected to commence in 2011, with the first coal to be produced in mid-2014. Accordingly, the staging of the Accommodation Villages has been programmed to allow for the completion of rooms ahead of demand in both the construction and Operations Villages.

4.2.4 Development Applications

Following the successful evaluation of the EIS Change request, two Development Applications will be submitted to the IRC seeking approval for the Construction and Operational Villages.

To that end, this Change Request is supported by the two DAs, dealing with the construction and operational elements of Buffel Village. These DAs, as contained in Attachment A and Attachment B respectively and are complemented by appendices that provide:

- IDAS Forms and Draft Owners Consent for the Development Applications (specific to each application);
- Searches and site information (common to both applications) ;
- A Masterplan illustrating the overall development of Buffel Village (common to both applications);
- Architectural and layout plans (specific to each application); and
- Technical appendices that assess the site and the village proposals, the effect of the proposed development and the proposed mitigation and management measures.

As noted above, with respect to the DAs contained in Attachment A and Attachment B, the proponent reserves the right to change these in response to the Coordinator-General's Change Report prior to submission of the applications to the IRC.

The technical appendices to the DAs have been utilised to form the basis for the detailed consideration of the effects of the proposed EIS/SEIS Changes in Section 6 below.

Please note that the technical appendices are common between both applications, and references in this Report use the Appendix references in the Construction Village DA unless otherwise stated.

Key areas where conditions are recommended for the DAs are set out at Attachment F.

4.3 Capacity Changes

4.3.1 Construction

It is proposed to increase peak accommodation capacity for the construction workforce up to 2000 rooms. Shift rostering and the construction program will affect the peak accommodation demand, reducing at times occupation of the village to below 100% occupancy.

The 2000 rooms are to be occupied by:

- The mine construction workforce (which includes a contingency to maintain project delivery schedules);
- Village construction workforce (initially in the fly camp then relocated into the Construction Village);
- Village management and support staff;
- Workforce constructing miscellaneous CRM off-lease infrastructure; and
- Periodic maintenance personnel.

Note, a "float", being an allowance for temporarily unavailable rooms (eg undergoing maintenance) has also been included in the 2000 room calculation.

A 2000 room provision is consistent with the Coordinator-General's Report Condition 14 (e) which requires BMA to endeavour to provide sufficient Construction Village accommodation capacity at each stage of the CRM development either at the approved Denham Village or at another location.

4.3.2 Operations

It is proposed to provide accommodation capacity for the operations workforce to 500 rooms, to accommodate:

- BMA mining operations personnel;
- Direct mining contractors;
- Village management; and
- Visiting BMA/BHP Billiton personnel and associated contractors/visitors.

As with the Construction Village, a "float" has been included in the 500 room calculation, again being an allowance for temporarily unavailable rooms (e.g. undergoing maintenance).

The Operations Village is to be utilised in line with BMA's FIFO strategy. The 500 room provision reflects a 70% FIFO mining operations workforce, in line with the Coordinator-General's Report which accepts this arrangement.

5 Reason for Proposed Changes

This section sets out the reasons for the proposed changes, as required in response to Section 35E(c) of the SDPWOA.

5.1 Locational Changes

5.1.1 Construction Workforce

In proposing an alternative to the Denham Village "base case" location for the Construction Village, the identification of Buffel Park, and specifically Buffel Village as a location for the Construction Village has arisen though:

- The acquisition of Buffel Park by BMA in June 2010;
- The desirability of maintaining the construction accommodation longer term in order to accommodate the housing requirements for periodic maintenance staff; and
- Realisation of the opportunity to achieve economies of scale in the provision and operation of infrastructure.

Supplementing these reasons, the additional location option is supported by a number of benefits which will arise by not proceeding with Denham Village for the Construction Village. These are:

- Resolution of traffic impacts associated with construction traffic movements on Moranbah Access Road;
- The avoidance of Denham Village's visual impacts; and
- An increase in separation distances between the construction activities and the workforce accommodation.

Notwithstanding the benefits that Buffel Village bring for accommodating the construction workforce, this change application does not seek to substitute Denham Village with Buffel Park, but retain the ability to accommodate the construction workforce at Denham Village if required due to any approval timing delays for Buffel Village.

Availability of Buffel Park

BMA's purchase of Buffel Park settled in June 2010, as part of a broader land acquisition strategy intended to ensure that no conflicting land uses are retained in the immediate environs of the CRM site.

At the time of the Caval Ridge EIS/SEIS, BMA did not own and were not assured of purchasing Buffel Park. Upon the Buffel Park purchase, BMA assessed the property in detail and identified that Buffel Park provided a number of opportunities to accommodate infrastructure and facilities that would otherwise have had to be located on other sites. Accordingly, Buffel Park was identified as a suitable alternative to Denham Village where the construction and Operations Villages could be co-located in a manner that addresses the concerns raised by the Coordinator-General in respect of Denham Village and provides for good operational management at a convenient distance from the CRM.

Village Lifespan

The development of the Construction Village at Denham Village has a limited life due to its location and the Coordinator-General's recommendation for decommissioning of Denham Village within twelve months of the commencement of operation of the CRM. Additionally, the Denham Village location conflicts with future mining operations on the CRM site, with the village potentially being impacted by mine related dust.

The relocation of the Construction Village away from the Denham Village location provides an opportunity to extend the lifespan of the village in order to provide for periodic and transient workforce accommodation. The overall 2000 room capacity of the Construction Village is intended to be retained over the longer term, in

order to meet flexible accommodation needs.

Traffic Impacts

The traffic impacts of Denham Village are acknowledged in the Coordinator-General's Report as requiring mitigation, primarily to be achieved through the subsequent approval by the IRC of an intersection design and accompanying traffic management measures.

The implementation of the Construction Village to Buffel Village negates the need to undertake these access intersection works, and replaces them with coordinated works that address the combined accommodation requirements at Buffel Village.

Visual Impacts

The Denham Village site is located on the Moranbah Access Road. This is identified in Section 5.11.3.1 of the Coordinator-General's Report, which notes that mitigation measures would be necessary to reduce the visual impacts of Denham Village.

The development of accommodation at Buffel Park can be achieved in a manner which has minimal visual impacts. A visual assessment undertaken over the Buffel Park site has identified that minor landscape works can be undertaken which will mitigate these impacts and retain a bushland/rural setting.

CRM Implementation Program

As the Coordinator-General has identified, BMA have approvals in place to utilise the location at Denham Village for construction workforce accommodation.

This approval enables BMA to put in place the necessary accommodation required to achieve BMA's preferred construction timetable for construction of CRM Project. Any delays in obtaining approvals for an alternative location will significantly impact the CRM Project timetable, and cause the need to establish the Construction Village at Denham Village at a significant one-off cost.

5.1.2 Operational Accommodation

The identification of Buffel Park, and specifically Buffel Village as a location for the Operations Village has arisen through:

- The acquisition of Buffel Park;
- The opportunity to co-locate with the Construction Village and share principal pieces of infrastructure if the option to locate a permanent Construction Village at Buffel Park is executed;
- Clarification of the scale of the Accommodation Village in respect of the revised workforce projections, FIFO strategy and availability of urban land in Moranbah; and
- Consideration of a responsible approach to workforce travel and fatigue management.

Availability of Buffel Park

As noted above, BMA's purchase of Buffel Park followed the completion of the SEIS, and therefore, the availability and suitability of the Buffel Village site was not known at the time of preparing the SEIS. The site analysis undertaken over Buffel Park identified the suitability of the Buffel Village site for the proposed Accommodation Villages.

Co-Location with the Construction Village

There are benefits in sustainability, social impact and traffic management in reducing the number of locations of Accommodation Villages outside of urban areas. BMA has identified that the location at Buffel Park has the necessary size and capacity to allow for co-location of a Construction Village and Accommodation Village. The benefits of proximity to the CRM, a single point of highway access, single utility supplies of power and water and shared water and waste water treatment provide a number of benefits resulting from this co-location.

Scale of Buffel Village

The required scale of Buffel Village was considered by BMA in light of the revised workforce forecast, as discussed in Section 4.3. The Caval Ridge operational workforce leads to a requirement for a 500 room operational village.

Spatial planning for a 500 room Operations Village with associated parking, infrastructure and recreation facilities necessitates the availability of a large site, which is not available in Moranbah, and could not be accommodated adjacent to the town given land suitability factors, development constraints and future urban growth commitments. Consequently, an accessible out of town solution was required, as flagged in the SEIS in Table 8.13.

It is submitted that Buffel Park, being adjacent to the CRM site and ML1775/MLA70403, satisfies the land use tests contained in the Belyando Planning Scheme at Section 4.1.2.2(4)(f).

Imposed Condition 14(d) of the Coordinator-General's Report requires assessment of any new Accommodation Village for the CRM to be undertaken in accordance with the existing ToR for the BBCGP, as part of the overall EIS process for this 'significant project' under the SDPWOA. The proposed Operations Village component of Buffel Village is included in the change request in order to satisfy the Coordinator-General's requirements in this respect.

5.2 Capacity Changes

5.2.1 Construction

Due to the limited housing stock, existing price competition and housing issues in Moranbah, existing accommodation in Moranbah will not be used to house construction workforce personnel who are not already resident in town. That is, all of the non-Moranbah resident construction workforce will be accommodated at Buffel Village.

The construction accommodation strategy is therefore to provide for a 100% FIFO pattern in line with the EIS/SEIS. Whilst some existing Moranbah residents may be employed in the construction workforce, the extent of such participation cannot be presently determined or controlled, and should not be relied upon to limit the provision of housing for the construction workforce.

The proposal for 2000 rooms is driven by the following:

- A contingency workforce to recover and maintain project delivery schedule;
- Village management and support staff;
- Village construction workforce (initially in the fly camp then relocated into the Construction Village);
- Workforce constructing miscellaneous CRM off-lease infrastructure;
- An allowance for visiting periodic maintenance personnel.

Note, a "float", being an allowance for temporarily unavailable rooms (e.g. undergoing maintenance) has also been included in the 2000 room calculation.

It is noted that the delays experienced during resolution of the Coordinator-General's assessment and the prospective timelines for the conclusion of the MLA70403 application and the issue of the Environmental Authority are such that additional construction resources have been included in order to meet programmed operational deadlines.

The Coordinator-General's Report forecasts a need to provide accommodation for periodic schedule maintenance/overhauls. BMA has considered the potential locations for such accommodation in light of the opportunity presented by the Buffel Village location, the nature of accommodation proposed at Buffel Village and the alternative housing options such as locations in Moranbah. It is further noted that housing capacity in Moranbah is constrained, and it is submitted that a village solution is an appropriate and reasonable approach to this lack of housing supply.

Given the transient nature of the periodic maintenance activities, retaining the Construction Village into the future to accommodate short-term construction and maintenance activities is thought to be a more appropriate solution to the accommodation and management of these people than providing significant latent capacity within the operational village.

Utilisation of the Buffel Village Construction Village is appropriate to house visiting maintenance crews for commercial reasons, workforce employee relations, room standards and potentially divergent shift patterns. A non-Buffel Park option does not satisfy these reasons.

5.2.2 Operations

The change to the accommodation capacity for the operations workforce has arisen through BMA's updated analysis of workforce requirements and an allocation of non-mine site operational staff.

The allocation considered in the EIS/SEIS addressed only the mining operations workforce, and did not fully address the requirement to house other associated personnel, such as

- Direct mining contractors;
- Village management; and
- Visiting BMA/BHP Billiton personnel and associated contractors/visitors.

Additionally, due to the long term nature of the Operations Village, there is a need to ensure that there is a "float" in room numbers to allow for temporarily unavailable rooms (e.g. undergoing maintenance).

For the Operational Workforce, a 70% FIFO arrangement for mining operators, when considered with shift rostering for all staff, and the housing requirements of associated operational personnel, leads to the 500 room Operations Village application.

6 Environmental Impacts of the Proposed Changes

In response to Section 35H(c) of the EPBCA, this Section addresses the environmental impacts of the proposed changes in response to:

- The ToR for the BBCGP (to the extent the ToR are applicable to accommodation proposals); and
- The effects of the proposal (as relevant) as described in the EIS/SEIS and previously considered by the Coordinator-General in order to identify and respond to cumulative impacts.

This Section has been structured to reflect the ToR and EIS. Each area of comparison concludes with an analysis of the impact of the changes and the required mitigation measures. Where necessary, changes to the mitigation strategies proposed in the EIS/SEIS are identified.

As noted above in Section 4.2.1, references to the technical appendices that are contained in the DAs use the Appendix references in the Construction Village DA unless otherwise stated.

The following major impacts resulting from the proposed change include:

- Use of Buffel Village to accommodate the workforce;
- Use of land currently zoned Rural;
- Changed traffic conditions from those identified in the EIS and SEIS;
- Removal of vegetation on the site of the Accommodation Villages;
- Management of air quality impacts from the CRM on future occupiers;
- Management of noise impacts from the operation of the Accommodation Villages;
- Treatment, disposal and reuse of wastewater from the Accommodation Villages; and
- Management of the visual impact of the proposals within the rural landscape.

These impacts, and a summary of mitigation measures are outlined below in the following sections.

6.1 Climate and Natural Disasters

The Buffel Village Accommodation site is approximately 17km by road from Moranbah and 3km from the CRM site, and therefore is considered to have the same climatic conditions and weather patterns as those considered for the CRM site in Section 4.1 of the EIS. Accordingly, a detailed reconsideration of these matters is not required for the proposed changes. Where relevant, consideration of climatic factors and risks of natural disaster have been addressed in the following sections.

6.2 Land

6.2.1 Topography and Geomorphology

Existing Characteristics

The Buffel Village site has an undulating topography, which rises gently from the Peak Downs Highway. The site features three knolls and separated by saddles. Slopes within the site are gentle, and range from 1-4%.

The Buffel Village area does not contain any defined waterways. The wider Buffel Park property features a number of creeks and waterways, including Nine Mile Creek and Cherwell Creek. Drainage lines, including some extensively weathered and eroded overland flow paths, cross through the site.

The Peak Downs Highway crosses Nine Mile Creek between the Buffel Village site and the CRM. The proposed infrastructure corridor that is to connect Buffel Village and the CRM will also cross Nine Mile Creek.

Proposed Change/Development and its Effects

The effects of the proposed changes in relation to topography relate only to the change in location for both the Construction Village and the Operations Village. There are no effects that arise in respect of the alterations to accommodation capacity, other than through the overall scale of the proposed development.

The design intent for the proposed Accommodation Villages is to develop within the landscape, utilising the natural landscape as features as described in the DAs Planning Report. To that end, a small degree of earthworks is anticipated to support construction of the proposed buildings and the supporting roads and infrastructure.

As outlined below in Section 6.2.6, a visual impact assessment has been prepared by RPS (contained as Appendix R in the DA). The visual impact assessment identifies that natural topography and existing bushland vegetation on the Buffel Village site can be augmented with additional planting that will ensure a high level of visual screening to the development.

Whilst conditions addressing the screening are anticipated to be a component of the eventual SPA Development Permit for the Construction Village, the planting of this additional vegetative screening is proposed to be undertaken by BMA prior to the commencement of construction works for Buffel Village.

Recommendation and Mitigation Measures

The proposed change is acceptable in relation to topography.

No mitigation measures are required other than those set out in the visual impact assessment.

6.2.2 Geology

Existing Characteristics

The DAs are supported by a Good Quality Agricultural Land Assessment prepared by GSS Environmental (Appendix P to the DA) that briefly considers the geological conditions of the site. The following summary is drawn from GSS Environmental's report.

The project area is located in the Isaac-Connors catchment which is situated through the central part of the Bowen Basin. The Bowen Basin is a large depositional geological structure composed of four main structural elements which include the Nebo Synclinorium, Folded Zone, Comets Platform and Collinsville Shelf.

The project area is located in the southern end of the Collinsville Shelf. The Collinsville Shelf is a geological ridge that dips gently to the east and has been gently folded relative to the adjacent Nebo Synclinorium and Folded Zone.

The project site is underlain in parts by both Permian and Tertiary sediment deposits. The Permian deposits were laid down 300 – 250 million years ago and are of the Back Creek Group (Pb). The Pb group largely consists of marine mudstones siltstones as well as quartzose sandstone deposits. These sediments are thinner on the Collinsville Shelf as compared to the adjacent Nebo Synclinorium.

In the project site's north-west area Tertiary deposits with a lithology of weathered clay and claystone occur.

Proposed Change/Development and its Effects

The effects of the proposed changes in relation to geology relate only to the change in location for both the Construction Village and the Operations Village. There are no effects that arise in respect of the alterations to accommodation capacity.

The proposed Accommodation Village is to be developed at ground level, and therefore detailed consideration of geological matters is not required to a great degree. The proposed Site Based Stormwater Management Plan and construction phase Erosion and Sediment Control Plan jointly consider the

management measures required to prevent downstream erosion that could occur as a consequence of the proposed development.

Recommendation and Mitigation Measures

The proposed change is acceptable in relation to geology.

No mitigation measures are required other than implementation of the site based stormwater management plan and the erosion control plan.

6.2.3 Soils

Existing Characteristics

The DAs include an assessment of the site's soil characteristics and good quality agricultural land status, prepared by GSS Environmental (Appendix P to the DA).

The GSS Environmental report notes that the project site contains two (2) major land systems: the Cotherstone (major) and Humbdolt (minor) systems.

The Cotherstone Land system occurs primarily on Permian sandstone and shale and has a general lithology of fresh or moderately weathered quartzose sedimentary rock. These rocks are resistant and tend to produce hills with structurally controlled features such as scarps and benches or lowlands with shallow soils. Typical soil types for this land system are texture contrast soils on undulating terrain and shallow rocky soils on hills and strike ridges. Vegetation is typically savannah woodland (ironbark) or mixed shrub woodland (box).

The Humbdolt Land system occurs primarily on Tertiary clay and has a general lithology of weathered tertiary clay and claystone with quartz, billy and ironstone gravel mixed in. Typical soil types for this land system are texture contrast soils on slight rises and plains, and cracking clay soils on plains and shallow depressions. Vegetation in the Humbdolt land system is diverse with Bendee/Lancewood or Savannah Woodland typically occurring on crests and low hills, mixed shrub woodland (Box) and Brigalow on slight rises, and Brigalow Dawson-Gum on plains and lowlands.

The potential for acid generation from topsoil and subsoil across the CRM Project site is low. As similar soil types exist at Buffel Village, a similar low likelihood of acid generation is anticipated.

The Belyando Planning Scheme land characteristic mapping has included a portion of the Buffel Village site within Good Quality Agricultural Land (GQAL) Class C1. The balance of the site is not mapped in the Planning Scheme as having soils with GQAL characteristics.

GSS Environmental reviewed the site characteristics and has concluded that the majority of the development footprint contains C2 and C3 class land, with C1 soils found only in the north-western corner. These classifications are consistent with those for similar land types and dominant vegetation groups for the Central West QLD region identified across the CRM site, as considered in the EIS/SEIS.

Proposed Change/Development and its Effects

The effects of the proposed changes in relation to soil relate only to the change in location for both the Construction Village and the Operations Village. There are no effects that arise in respect of the alterations to accommodation capacity.

As noted above, the GSS Environmental report on GQAL identified that the Buffel Village site contains Class C land and was comprised of subclasses C1, C2 and C3. The assessment supports the conclusions of previous assessments in and around the area with the majority of the area containing C2 and C3 throughout with C1 occurring in the project site's north-western corner.

GSS Environmental has summarised the land suitability and pastoral management characteristics of these Agricultural Land Classifications, and identified the extent of rural land affected by the Buffel Village proposals.

Table 3: Agricultural Land Classifications and Affected Areas

ALC	Land Suitability Description	Pastoral Management	Affected Area
C1	High quality land with few or minor limitations / Land with minor limitations	Good Quality grazing and/or highly suitable for pasture improvement	44 ha
C2	Moderate limitations to sustaining its use	Moderate quality grazing and/or moderately suitable for pasture improvement	45 ha
C3	Marginal land requiring major inputs to sustain the use	Low quality grazing, grazing of native pastures with limited suitability for pasture improvement	48 ha

Consideration of the State Planning Policy regarding Good Quality Agricultural Land is undertaken in the Planning Report at Section 7.3, but in summary it is clear that the development of the Buffel Village on the subject site will not adversely impact upon the availability of land suitable for horticulture or cropping.

Recommendation and Mitigation Measures

Whilst there is an acknowledged loss of rural land, the land is grazing land, and there is no adverse strategic implication of this loss. The change is therefore acceptable in this regard.

No mitigation measures are required.

6.2.4 Land Use

Section 4.5 of the EIS assesses the historic and current land uses of the CRM project area. It also assesses the impact the project will have on the land use of the project site and surrounding areas, including:

- Existing land use of the site and surrounds.
- Land tenure and ownership, including land with special purposes.
- Existing infrastructure, infrastructure reserves, (e.g. road reserves), stock routes.
- Administrative context of the project and the project site including local government zoning, relevant state instruments (e.g. state planning policies) and strategic documents.

This Section reviews these matters in light of the proposed changes to the project.

Existing Characteristics

The northern portion of Buffel Park is presently used for grazing. The southern portion, and the area of interest for the Buffel Village is not actively being used for grazing. A house and rural sheds/outbuildings are present on the northern portion of the property that lies to the west of the Peak Downs Highway. Neighbouring properties to the south and west are used for grazing/agistment. A house is located on the adjoining property to the south (Skyville Stud).

An aerial photograph of the site and locality is included as Figure 4 in the DA Planning Report. A number of photographs of the site and immediate environs are presented as Figure 5 in the DA Planning Report.

The Buffel Park property is in freehold tenure, and was purchased by BMA in June 2010.

Existing infrastructure servicing the Buffel Park is commensurate with rural properties, comprising electricity and telecommunications lines along the Peak Downs Highway and to the homestead. The Blair Athol Railway Line bisects the north western area of the Buffel Park property. A high voltage 132kV transmission line owned and operated by Powerlink also passes through the north western portion of the Buffel Park property. A further high voltage 66kV transmission line owned by BMA extends from Moranbah through properties to the north-east of Buffel Park, and will serve the CRM in addition to the Peak Downs Mine.

Buffel Park lies within the IRC local government area. IRC was established in 2008 following the merger of the former Belyando, Nebo and Broadsound Shire Councils. The Belyando Planning Scheme (July 2008, adopted 20/01/2009) applies to the area that was previously the Belyando Shire.

The Peak Downs Mining Lease (ML1775) and CRM Mining Lease Application (MLA70403) adjoin the northern boundary of the Buffel Park property, as seen in Figure 2 of the DA Planning Report. BMA is the landowner of the majority of the land within the ML/MLA areas.

Proposed Change/Development and its Effects

The proposed Buffel Village will extend across approximately 140 hectares of the Buffel Park property. The balance of the property will be retained in rural state, with agistment of livestock back to the vendor for a limited period.

The proposed Buffel Village is described in summary above in Section 4.2.1, and in detail in the attached Planning Report.

The key land use issues arising from the proposal are:

- The requirement for the provision of an Accommodation Village at this location;
- The sequential expansion of the Construction Village and integration with the Operations Village;
- The environmental, ecological and amenity impacts of the development, concerning:
  - Removal of remnant and non-regulated regrowth vegetation on the site of the Accommodation Village;
  - Management of noise impacts from the operation of the Accommodation Village;
  - Treatment, disposal and reuse of wastewater from the Accommodation Village;
  - Management of the visual impact of the proposals within the rural landscape; and
- Transport and traffic implications.

The land use specific matters identified above are discussed in this Section, whilst the various environmental, ecological, amenity, and transport matters are addressed in the associated parts of this Section.

Locational Matters

The principal planning issue associated with the development is the issue of need for the Accommodation Villages, and the Construction Village in particular, to be located on the subject site. Associated with this issue are the scope of the development and the nature of the land uses proposed within the development.

As addressed in the EIS/SEIS and planning report to the DAs, there is a requirement to provide accommodation for the construction and operations workforces, due to the limited availability of housing in Moranbah or other nearby locations.

The EIS/SEIS and the Coordinator-General's Report acknowledge that a 1200 person construction workforce (as previously envisaged) could not be located in Moranbah, and thus the Denham Village solution was considered acceptable. The increase in construction personnel numbers would similarly not be able to accommodated in Moranbah, and therefore an "out of town" solution is proposed. The land use implications of changing the Construction Village location (at the proposed scale) from Denham Village to Buffel Village concern the spatial relationship of the village to the Caval Ridge mine to satisfy the requirements of the Belyando Planning Scheme.

It is noted that the Denham Village location is within the area of ML1775, and therefore there are no "land use tests" associated with the development of the Construction Village at that location. There are, however, a number of constraints, limitations and adverse implications of developing Denham Village, as acknowledged in the Coordinator-General's Report.

Under the Belyando Planning Scheme, accommodation buildings within the Rural Zone are an appropriate use in certain circumstances:

"caravan or relocatable home park" or "accommodation building" for the purposes of accommodating workers, where the use is: directly and primarily associated with rural production or a natural resource related industry on the same site or on an immediately adjoining site; compatible with the amenity and character of the surrounding uses; intended to be established only for a defined period; and cannot reasonably be located in the Urban "Zone".

As discussed below, the Buffel Park site adjoins the existing Peak Downs Mine and the site of the proposed CRM, as delineated by ML1775 and MLA70403. The location of these proposed facilities adjacent to the mine site is envisaged by the Planning Scheme, and is not considered to conflict with the strategic planning framework for the Belyando Shire as expressed in the Planning Scheme. Section 5 and Section 7.4 of the DA address this issue in detail and demonstrate the suitability of the site in this regard.

The establishment of the proposed land uses on the Buffel Park site is considered to be appropriate given the above arguments regarding the location, scale and manner of occupation of the proposed Accommodation Village and its relationship to the CRM.

Sequential Expansion

The DA sets out that the Buffel Village will be developed in a staged manner, to allow for sequential occupation by the construction and operations workforces in line with the construction program.

This expansion of the village is illustrated below in Table 4, which illustrates that the construction programs for the villages overlap.

Table 4: Anticipated Staging of Rooms at Buffel Village

Temporary Fly-Camp	Construction Village	Operational Village	Cumulative
Fly Camp – 500 rooms			NA
	Stage 1 – 516 rooms		516 rooms
	Stage 2 – 504 rooms		1020 rooms
	Stage 3 – 272 rooms	Stage 1 – 250 rooms	1542 rooms
	Stage 4 – 208 rooms	Stage 2 – 250 rooms	2000 rooms
	Stage 5 – 224 rooms		2224 rooms
	Stage 6 – 272 rooms		2496 rooms

Note: Room numbers in stages are indicative and may be adjusted marginally due to detailed engineering design and construction program requirements.

The construction program intention as expressed in Table 4 indicates the room numbers to be provided. Personnel accommodated in the villages at any one time will not exceed the availability of rooms.

Environmental, Ecological and Amenity Impacts

The environmental, ecological and amenity impacts of the proposed Buffel Village accommodation solutions are presented throughout Section 6 of this Report and addressed in detail in the technical appendices to the Planning Report. The Planning Report concludes that the various impacts of the development are acceptable, sufficiently minor as to not warrant particular amelioration, or able to be appropriately addressed through the use of mitigation measures, which includes vegetation clearing required for development of the villages into BMA's proposed Biodiversity Offset Strategy for VMA and EPBCA matters.

Transport and Traffic Impacts

The transport and traffic impacts of a rural location for an Accommodation Village of the scale proposed are addressed below in Section 6.9. These impacts have been found to be acceptable and result in a reduction

in traffic impact compared to that assessed under the EIS/SEIS using Denham Village for construction accommodation and an "in town" solution for operational accommodation.

Recommendation and Mitigation Measures

Management of the residential land uses that will be introduced to the Buffel Park site are acknowledged as being necessary to avoid overtly changing the character of the locality and undermining the planning strategy for the region and the consolidation of residential uses within urban locations.

Suitable ways of addressing the land use implications are anticipated to be through the imposition of conditions that:

- Control the staged expansion of the Accommodation Villages;
- Address the architectural design palette, landscaping and visual impacts of the built infrastructure; and
- Control noise, lighting and other amenity impacts from the development.

6.2.5 Sensitive Environmental Areas

Existing Characteristics

As background, an assessment of the sensitive environmental areas concerning the CRM Project is provided in Section 4.6 of the EIS.

The EIS reviews the applicable international conservation treaties and has identified the potential presence of a number of migratory species within the CRM Project area. The ecological assessment of the Buffel Village site (see Section 6.5 and Appendix J of the DA) discusses these species and the EPBCA applicable vegetation (refer also to Section 7.1).

In the immediate vicinity of the Buffel Village site, there are:

- No protected estates (national parks, state forests or conservation areas);
- No Fish habitat areas;
- No Heritage places listed on the Register of National Estates; or
- No World Heritage Listings.

Desktop mapping of the site complemented by ground truthing indicates that there are endangered regional ecosystems within and around the Buffel Village site, specifically areas of the Brigalow Ecological Community (Brigalow (*Acacia harpophylla* dominant and co-dominant) communities) and the Bluegrass Dominant Grasslands. These communities are discussed in greater detail in Section 6.5.

A non-indigenous cultural heritage survey did not identify any sites, places or objects of significant cultural heritage significance on Buffel Village. The Indigenous cultural heritage assessment identified a small extent of cultural heritage sites, items and significant natural features of indigenous origin, as discussed below in Section 6.10 and summarised in the Cultural Heritage Clearance (refer to Appendix T of the DA).

Proposed Change/Development and its Effects

From the above review of protected places, it is evident that the proposed changes will not impact on these estates.

Habitats, Vegetation and Significant Species

The proposed location of the workforce accommodation at Buffel Village will result in vegetation clearing as follows.

Table 5: Clearing by Biodiversity Status

Biodiversity Status	Area to be Cleared (ha)
Endangered	4.6
Of Concern	13.1
No Concern at Present	60.2
Total	77.9

This will include an anticipated clearing of some 3.4 hectares of Brigalow as part of the endangered community, as discussed in the ecological assessment (refer to Section 6.5 below and to Appendix J of the DA).

Indigenous Cultural Heritage

The effect of the development on indigenous cultural heritage is reviewed in Section 6.10.

Recommendation and Mitigation Measures

Habitats, Vegetation and Significant Species

The vegetation removal, particularly that of the brigalow, is to be mitigated through the inclusion of this area in BMA's overall offset strategy for the CRM project. This is outlined in greater detail below in Section 6.5.

On this basis, it is submitted the change is acceptable.

Indigenous Cultural Heritage

Mitigation measures for the management of impacts on indigenous cultural heritage are presented in Section 6.10, which requires the monitoring of two areas of indigenous cultural heritage value during the construction process. These locations have been identified in the site assessment prepared by Woora Consulting as outlined in Appendix T of the DA. ,

6.2.6 Landscape Character and Visual Amenity

Existing Characteristics

The Buffel Village site is located on the Peak Downs Highway, approximately 3km south of the CRM. The site has a rural character that is of mixed grazing areas and open woodland. Visibility of the proposed Buffel Village area is relatively limited due to local topography, with the site visible from only a small number of vantage points on the Peak Downs Highway. Due to the topography, existing land uses and limited number of local roads, there are no other apparent vantage points.

Proposed Change/Development and its Effects

It is acknowledged that the Buffel Park site has a rural setting, and that the location is distant from both Moranbah's urban character and the industrial/mining character that will eventuate around the CRM.

A Visual Assessment of the proposal has been undertaken in order to consider the impact of the introduction of the built form of the development within the rural landscape from publicly accessible locations along Peak Downs Highway.

The Visual Assessment has been prepared by RPS and is included as Appendix R to the Planning Report. The Visual Assessment has considered the topography and vegetation present on site from vantage points along the Peak Downs Highway. The Visual Assessment concludes that separation of the buildings from the road reserve by some 200m, the rising terrain and the existing landscape character will make the buildings difficult to see from the highway.

The Visual Assessment considered the potential visibility of the development from adjoining houses, particularly the adjacent dwelling to the south (Skyville Stud). It is noted that there is an intervening ridgeline between the site and that house which obscures views.

Recommendation and Mitigation Measures

Whilst the Visual Assessment has concluded there is likely to be limited visibility of the development when viewed externally, supplementary vegetative screening is recommended in the Visual Assessment in order to minimise the impact of the development and to provide additional buffering to the site. This screening is to be introduced on a rising slope situated between the highway and the village area, and will ensure that the development maintains a bushland setting.

6.2.7 Land Disturbance

The ToR includes a section that seeks a strategy for the management and minimisation of land disturbance associated with the operation of the CRM.

Broadscale effects are not applicable to the proposed Buffel Village, and therefore no further consideration of the mine activities are required. This Section deals with land disturbance that will result from the Buffel Village proposals.

Existing Characteristics

As noted above, the Buffel Village site is an undisturbed rural site with a mixed cover of grassland and open woodland. The site is crossed by a number of local drainage routes that have, in places, broad cross sections.

Proposed Change/Development and its Effects

By locating the accommodation for the construction and operational phases of the CRM at Buffel Village, land disturbing development will be introduced to this site, which was not included in the extent of works described and considered in the EIS/SEIS. This change:

- does not affect the extent or nature of land disturbance that will occur as a result of construction and operation of the mine;
- avoids the land disturbance at Denham Village (other than would occur under the applicable Plan of Operations) should the Construction Village be located at Buffel Village; and
- consolidates land disturbance for the villages to the Buffel Village site only and not multiple locations.

The development of the villages will result in surface clearing during the construction phase, to enable construction of the various buildings, roads and hardstand areas. This disturbance will expose and move topsoils, but is intended to have only minimal excavation. Similar impacts could occur during decommissioning of the Construction Village at Denham Village if activated.

No impacts are anticipated during the operational phase of Buffel Village.

Recommendation and Mitigation Measures

The principal method of mitigating the effects of land disturbance during the construction period is the implementation of suitable erosion and sediment controls, as discussed in the engineering report prepared by SKM (refer to Appendix M of the DA).

The proposed bio-retention/detention basins will be partially constructed and utilised as a temporary sediment management basin during the construction phase. Engineering Drawings 150, 151 and 152 (within Appendix M of the DA) illustrate the typical arrangement and implementation of erosion and sediment management measures.

The requirement to implement these measures would be included as a condition of the relevant

Development Permits under the jurisdiction of the IRC.

6.2.8 Land Contamination

Existing Characteristics

The Buffel Village site has historically been used for low intensity grazing, and is not known to be affected by existing contamination. The Buffel Park property is not listed on the Environmental Management Register or the Contaminated Land Register (refer to Appendix B of the DA).

Proposed Change/Development and its Effects

The proposed development, as summarised above in Section 4.2.1 and described in detail in the Planning Reports to the DAs, entails primarily residential accommodation with supporting facilities and infrastructure. The proposed use of the land does not include a Notifiable Activity listed in Schedule 3 to the *Environmental Protection Act 1994* (EPA), and it is not anticipated that land contamination could occur as a result. A minor amount of contaminated surface water runoff may be generated from hardstand areas associated with vehicle parking.

Recommendation and Mitigation Measures

As minimal contamination sources are anticipated, with contamination likely to be limited to surface water, the proposed site base stormwater quality management plan will address the management of such contamination.

It is noted that the use proposes a sewage treatment plant, and that sewage sludge is a regulated waste under the *Environmental Protection Regulations 2008* (EPR). Operation of the sewage treatment plant is an ERA and that its operation will be subject to a Development Permit for the ERA and a Registration Certificate. It is anticipated that the conditions of the Development Permit and Registration Certificate will address the management and disposal of wastes from the sewage treatment plant.

Mitigation measures to avoid the contamination of soil and groundwater are to follow BHP/BMA standards, as set out in the EIS at Section 4.9.4, including the following:

- Stockpiles, workshop areas, chemical stores, fuel tanks and waste disposal/storage areas will be located on hardstand or compacted soil. As runoff from these areas may be contaminated, runoff will be collected using appropriate drainage and water management structures. Potentially contaminated runoff may be remediated or disposed of in an approved manner.
- Relevant Australian Standards (e.g. for the storage and handling of flammable and combustible liquids and dangerous goods) will be complied with, and all chemical and fuel storage areas will be bunded.
- Where possible, hazardous chemicals and materials will be replaced with less harmful alternatives. Material Safety Data Sheets (MSDSs) for chemicals used or brought to site will be kept in a central register on site and at the area of use and be readily available to workers at all times.
- Spills will be cleaned up immediately. In particular, site vehicles will be equipped with appropriate spill kits. For significant chemical or fuel spills, the site emergency response plan will be followed and the appropriate authorities notified as soon as possible.
- Detailed records will be kept of any activities or incidents that have the potential to result in land contamination. Records will be kept in an inventory that contains information on storage locations, personnel training and disposal procedures for appropriate chemicals, fuel and other potential contaminants used on site. Records will be maintained by BMA and reviewed regularly. Regular inspections of containers, bund integrity, valves and storage and handling areas will be carried out.
- All staff will be trained as part of their site induction in appropriate handling, storage and containment practices for chemicals, fuel and other potential contaminants as relevant.

6.3 Waste

Existing Characteristics

As the site is presently used for grazing, there is no waste generated from current activities.

The occupation of Denham Village for a 1200 person Construction Village is anticipated in the EIS and regulated through the Peak Downs Mine EA and Plan of Operations. Consequently, the EIS does not detail waste generation or management strategies for the Denham Village site. Accordingly, the waste that would be generated by the Denham Village operations would be addressed through the overall Waste Management Strategy referred to in the EIS and the applicable Environmental Management Plan in line with the EPP(Waste).

Proposed Change/Development and its Effects

The proposed development of a 2000 room Construction Village and 500 room Operations Village at Buffel Park will generate general waste associated with these residential uses. Whist detailed planning on the extent of waste likely to be generated has not been undertaken, the waste generated will be organic waste, metal and plastic, and will largely be derived from food preparation and consumption.

It is noted that Denham Village would also generate general waste if acted upon for the Construction Village.

The infrastructure reports that support the DAs outline anticipated amounts of sewage waste and the proposed sewage treatment plant.

Recommendation and Mitigation Measures

In order to appropriately manage the waste generated by the Buffel Village use, the DAs have been prepared to include refuse storage areas at the maintenance area, adjacent to the kitchens and as required within the infrastructure areas. In line with BMA procedures, point of source waste streaming will be provided for, along with separated storage for various waste types.

Collection will be undertaken by a suitably registered private contractor and removed to an approved waste disposal site.

6.4 Water resources

6.4.1 Surface waterways

This section describes the surface water resources in the CRM Project site, in terms of environmental values and potential impacts and mitigation measures.

The Buffel Village site does not include any defined water courses within the development area, though the project area drains to both Nine Mile Creek and Cherwell Creek. The infrastructure corridor (parallel to the Peak Downs Highway) for the project crosses Nine Mile Creek.

Existing Characteristics

As described in the EIS (Section 6), the affected creeks are ephemeral and formed in alluvial material, and as such they only flow during or after periods of heavy or prolonged rainfall. The EIS describes in detail the environmental characteristics of the creeks. In general terms, though affected by agricultural and grazing practices, water quality is within guideline values. The EIS includes, at Section 6.1.2.3 and Figure 6.3, a flood analysis which includes the Buffel Village area. Figure 6.3 illustrates that both Nine Mile Creek and Cherwell Creek flood, though not in the vicinity of the proposed Buffel Village. The assessment indicates that the local drainage corridor within the site does not flood.

Proposed Change/Development and its Effects

The proposed Buffel Village development will introduce urban development within a rural setting. Typical effects of such a change in land use are increases in run off due to the introduction of hard surfacing and consequential alterations to flooding conditions, along with the mobilisation of sediments and contaminants during both the construction and operational phases of the development.

The infrastructure corridors running between Buffel Village and the CRM will contain water and treated wastewater pipelines (situated within the Peak Downs Highway road reserve), telecommunications cabling and overhead 66kV electricity transmission lines. Where pipelines and underground cabling conduits cross Nine Mile Creek, the passage across the creek will either be undertaken via tunnel boring below the creek bed, or through trenching in the bed and banks of the creek. Trenching actions will necessitate a temporary waterway barrier, which is anticipated to be conducted through the self assessment provisions under the relevant code of the *Fisheries Act 1994*. Additionally, works within the bed and banks of a watercourse require a Riverine Protection Permit from the DERM under the *Water Act 2000*. The detailed engineering design and construction methodology for this infrastructure will inform the requirement for these approvals.

Recommendation and Mitigation Measures

Buffel Village has been designed to be developed within the existing landscape without the need to undertaken extensive earthworks. Nonetheless, it is anticipated that there will be land disturbing development that could potentially result in sediment movement and erosion.

Accordingly, a Site Based Stormwater Management Plan (SBSWMP) including an Erosion and Sediment Control Plan has been prepared by SKM (refer to Appendix L of the DA), which addresses construction of the Buffel Village and its on-going operations. The SBSWMP considers the quantity and quality implications of the development, and requires the use of detention basins, swales and bio-filtration basins as suitable mechanisms to ensure that runoff from the development is controlled to meet or exceed existing conditions.

It is acknowledged that the management of erosion and sedimentation primarily throughout the construction phase is an integral component of the pollutant reduction strategy to maintain water quality. It is recognised that the highest load of erosion and hence suspended solids in the runoff occurs during the construction phase.

The proposed bio-retention/detention basins will be partially constructed and utilised as a temporary sediment basin during the construction phase (as part of the early bulk earthworks) for the majority of the vehicular parking and internal road works. The remainder of the construction works such as the accommodation buildings, and shared facility buildings will be primarily erosion prevention by ground coverage and minimising sediment transportation via strategically placed sediment fences downstream of the works cut off drains. The typical arrangement and application of erosion and sedimentation management measures proposed for the development site are illustrated within the SBSWMP (refer to Appendix L of the DA).

The proposed Sewage Treatment Plant (STP) will result in the creation of Class A+ treated effluent. This effluent will be used for landscape irrigation within the villages, with the majority of wastewater pumped back to the mine site for use in dust suppression. No large-scale irrigation area is proposed. This level of treatment and the proposed reuse solution is considered appropriate to ensure that there are no adverse effects on surface water quality resulting from wastewater disposal. A detailed irrigation management plan will be prepared during the detail design phase for the STP and water cycle networks and addressed through the ERA licensing of the STP.

6.4.2 Groundwater

Existing Characteristics

Section 7 of the EIS considers the existing groundwater conditions and the effect of the proposed CRM on groundwater. The Buffel Village site is considered to have similar groundwater conditions as the main mine site, and consequently no further assessment of the groundwater has been undertaken.

Proposed Change/Development and its Effects

The proposed Buffel Village development will be undertaken principally at surface level with only minor earthworks that will cut into the existing ground. As such, it is considered that the Buffel Village proposals will not have significant impacts on groundwater.

Recommendation and Mitigation Measures

No specific mitigation measures are considered to be necessary.

6.5 Nature conservation

This section of the Report considers the flora, fauna and habitat values of the Buffel Village. An Ecological Assessment of the Buffel Village site has been prepared by RPS (Appendix J of the DA).

6.5.1 Existing Characteristics

Flora

Vegetation occurring within the study area consists of a mosaic of woodlands and open woodlands with a grassy understorey and pastures. Common canopy species throughout the site area include a range of eucalypts and acacias.

Current Regional Ecosystem (RE) mapping (Version 6.0) provided by the DERM indicates that multiple RE types occur within the development footprint. A Property Map of Assessable Vegetation (PMAV) provided by DERM indicates that a large portion of the study area is mapped as Category X (DERM, 2010). Copies of the RE mapping and the PMAV are included in Appendix B of the DA and within the Ecological Assessment.

Site assessment has determined that there are several vegetation communities occurring within the Buffel Village site area, presented below in Table 6. These vegetation communities have been mapped and assessed in the Ecological Assessment (Appendix J of the DA).

Although not mapped on the DERM's RE mapping, brigalow (*Acacia harpophylla* dominant and co-dominant) vegetation communities were identified on the site.

Vegetation Community 4 listed in Table 6 below is a Brigalow (dominant or co-dominant) community that is listed as a Threatened Ecological Community (Endangered) under the EPBCA. Through site inspection, this community is considered to be of low to moderate health due to weed incursion, past and present land use and the regrowth of a native shrub layer in places. Vegetation Community 4 has an overall area of approximately 4.6 hectares. Figure 4.1 of the Ecological Assessment illustrates that the extent of brigalow found within the community comprises approximately 3.4 hectares.

The RE description applicable to Vegetation Community 1 lists brigalow as a species which may be found in the community. Under the EPBCA listings, this community is not Threatened Ecological Community. Additionally, site assessment did not identify the presence of brigalow in this community.

Table 6: Ground Truthed Classifications of Vegetation Communities

Community	RE Code	RE Description	VMA status	Biodiversity Status	EPBCA Status
1	11.7.1	*Acacia harpophylla* and/or *Casuarina cristata* and *Eucalyptus thozetiana* or *E. microcarpa* woodland on lower scarp slopes on Cainozoic lateritic duricrust	Least Concern	Of Concern	NA
2	11.5.3	*Eucalyptus populnea*, *E. melanophloia* and *Corymbia clarksonia* woodland with a low tree layer on Cainzoic sand plains or remnant surfaces.	Least Concern	No concern at present	NA
3	11.10.3	*Acacia catenulata* or *A. shirleyi* open forest on coarse-grained sedimentary rocks. Crests and scarps	Least Concern	No concern at present	NA
4	11.4.3	Open-forest dominated by *Acacia harpophylla and/or Casuarina cristata*	Endangered	Endangered	Endangered
5	11.10.4a	*Eucalyptus crebra*, *Corymbia aureola*, *C. clarksoniana* and/or *Acacia shirleyi* woodland. Small areas that occur on conjunction with *E. decorticans* woodland.	Least Concern	No concern at present	NA
6	11.10.4a	*Eucalyptus crebra*, *Corymbia aureola*, *C. clarksoniana* and/or *Acacia shirleyi* woodland. Small areas that occur on conjunction with *E. decorticans* woodland.	Least Concern	No concern at present	NA
7	n/a	Non remnant Disturbed Pasture	NA	NA	NA
8a	11.5.9	*Eucalyptus crebra* and/or *Eucalyptus melanophloia* woodland on plateaus and broad crests of hills and ranges which are formed by Cainozoic sand plains	Least Concern	No concern at present	NA
8b	11.5.3	*Eucalyptus populnea*, *E. melanophloia* and *Corymbia clarksonia* woodland with a low tree layer on Cainzoic sand plains or remnant surfaces.	Least Concern	No concern at present	NA
8c	11.8.5	*Eucalyptus orgadophila* on Cainozoic igneous rock.	Least Concern	No concern at present	NA

Fauna

In respect of fauna, the Ecological Assessment included a desktop review of potentially occurring "significant" species, which resulted in the identification of thirteen (13) fauna species lists as significant under the EPBCA and/or *Nature Conservation Act 1992* (NCA). Targeted searches for these species did not result in detection on site.

Site assessment found that a number of listed reptile species may use the site due to its habitat values, whilst the Squatter Pigeon (*Geophaps scripta scripta)* is likely to use the site for foraging and nesting purposes. No Squatter Pigeon were identified during the site visit.

Habitat Values

Three broad habitat types have been identified within the study area, namely Woodland, Riparian Woodland and Disturbed Grassland with Scattered Trees.

Combined, these habitat types consist of, and provide, various quality (condition) habitats and resources. The relative value of each habitat type for fauna species has been assessed according to its perceived functional values for the various broad fauna groups which occur, or may occur, on site.

Woodland

This habitat type provides structural elements that fulfil various functional roles for native fauna species. Mature trees fulfil shelter, roosting and connectivity roles for arboreal birds, mammals, and reptiles. Such trees also fulfil an important connectivity element in the landscape, acting as 'stepping stone' movement corridors for certain arboreal species.

The understorey and groundcover layers, such as grass trees, shrubs, grasses, coarse leaf-litter and fallen woody material provide suitable habitat/shelter for ground-dwelling species and small bird species.

Woodland habitat occurs within vegetation communities 1, 2 (in part), 3 (in part) 5, 6 and 8a-8c and portions of vegetation communities 2 and 3 identified in Table 6 above.

Riparian Woodland

Riparian areas generally have a higher diversity of flora and greater structural complexity. They are characterised by remnant canopy trees and dense shrub and ground layers.

As with the adjacent woodland habitat, many woodland-dependent fauna species utilise riparian woodlands for foraging and hydrating, breeding, and movement opportunities.

As a result of the ephemeral nature of the Isaac River and its tributaries, the waterways that occur within the study area are not considered to provide continuous habitat value for aquatic and semi-aquatic species. However, following heavy rainfalls, semi-aquatic fauna (e.g. such as ibis, herons and frogs) are expected to shelter, forage and breed in areas associated with water.

Riparian Woodland habitat occurs within vegetation communities 2 (in part), 3 (in part) and 4 listed in Table 6.

Grassland with Scattered Trees

This habitat type is highly disturbed (i.e. dominated by exotic grasses and herbs), is structurally simple (i.e. mostly devoid of canopy, mid-storey, and understorey vegetation layers), and generally lacks important habitat features such as fallen woody debris, termite mounds, and hollow-bearing trees.

Accordingly, the species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances.

Grassland habitat occurs within vegetation community 7 listed in Table 6.

Aquatic biology

The EIS, at Section 9, included a review of existing aquatic ecology conditions. Due to the ephemeral nature of Nine Mile Creek and Cherwell Creek, which are downstream of the proposed Buffel Village, little aquatic habitat exists. No aquatic fauna of special conservation significance were recorded during surveys undertaken during preparation of the EIS.

6.5.2 Proposed Change/Development and its Effects

The proposed Buffel Village will result in the disturbance of the existing environmental conditions and habitat values over the site.

Flora, Fauna and Habitat Values

Whilst the design intent for the villages seeks to retain the bushland setting, the development of the villages will result in the clearing of existing vegetation across the three habitat systems. This extent of clearing is as follows in Table 7.

Table 7: Estimated Areas of Clearing

Community	RE	VMA Status	Biodiversity Status	EPBCA Status	Area to be cleared (ha)
1	11.7.1	Least Concern	Of Concern	NA	13.1
2	11.5.3	Least Concern	No concern at present	NA	10.2
3	11.10.3	Least Concern	No concern at present	NA	7.9
4	11.4.3	Endangered	Endangered	Endangered	4.6
5 & 6	11.10.4a	Least Concern	No concern at present	NA	31.3
7	NA	Non-Remnant	NA	NA	NA
8a	11.5.9	Least Concern	No concern at present	NA	8.6
8c	11.8.5	Least Concern	No concern at present	NA	2.2
Total non EPBCA					73.3
Total EPBCA					4.6
TOTAL					**77.9**

As discussed above, Vegetation Community 4 (Regional Ecosystem 11.4.3) contains brigalow (A. harpophylla). As noted in Table 7 above, 4.6 hectares of this Regional Ecosystem is to be cleared. Whilst it is noted that Vegetation Community 4 has an overall area of approximately 4.6 hectares, Figure 4.1 of the Ecological Assessment illustrates that the extent of brigalow found within the community comprises approximately 3.4 hectares. (A. harpophylla)

Due to the small scale of this Brigalow community and the poor vegetation condition, impact to the overall retention of this Regional Ecosystem is not considered to be significant.

Furthermore, whilst Vegetation Community 1 may also contain brigalow under the RE description, no brigalow was found within the community and the RE is not listed as a Threatened Ecological Community under the EPBCA.

Overall, low to moderate ecological impact is expected to occur as a result of the proposed development. The level or likelihood of the impact is based on the ecological values identified for the site, proposed activity and feasibility of prevention and mitigation. Therefore a “high” level of impact indicates that the impact is likely to have a substantial negative impact on ecological values and there is little chance of preventing the impact (i.e. impact is highly likely to occur). A “low” level of impact indicates it is unlikely to have a substantial negative impact on ecological values and/or the impact may be readily prevented. Potential impacts identified and a corresponding set of mitigation measures are presented below in Table 8.

Table 8: Potential Ecological Impacts From Proposed Development and Proposed Mitigation Measures

Impact	Level of Impact	Proposed Mitigation Measures
Loss of native vegetation	Moderate	▪ Incorporate native trees within landscaping of proposed development. ▪ Revegetation of retained bushland
Threatened Ecological Communities	High	▪ Potential impact on EPBCA listed Threatened Ecological Community (Brigalow). ▪ Offsetting the 3.4ha Brigalow community is recommended in order to achieve no net loss.
Loss of significant fauna and/or habitat	Low	▪ Habitat and food resource trees are included in landscaping areas. ▪ Clearing will occur from disturbed areas towards areas of surrounding vegetation using a sequential clearing method. Sequential clearing is a method of felling trees where operations are conducted in discrete stages such that fauna are provided sufficient time and space to move from the clearing site of their own volition without the need for human intervention to remove and relocate them. ▪ If a Koala is spotted (by any person) in a tree on site during vegetation clearing works, the tree containing the koala and the surrounding trees must not be cleared on that day. These trees may only be cleared on subsequent days if the Koala has moved out of them at their own will. ▪ Limited use of barbed wire fencing within the development.
Loss of fauna movement opportunities	Low	▪ The site offers connectivity predominately through the riparian corridors. The proposed development will avoid such areas. ▪ Limited use of barbed wire fencing within the development.
Erosion and sedimentation	Low	▪ An erosion and sediment control plan is prepared for the site. ▪ Areas susceptible to erosion / sedimentation are identified. ▪ Erosion / sedimentation control measures are implemented prior to any earth moving / vegetation clearing operations. ▪ Disturbance areas are to be demarcated and temporarily fenced prior to commencement of works. ▪ Regular monitoring and maintenance of erosion / sedimentation controls should occur during construction phase.
Water quality and/ or stormwater	Moderate	▪ The proposed development will not impact on wetlands. ▪ Appropriate chemical storage shall be implemented during construction phase (e.g. chemicals stored in designated bunded areas). ▪ The development is supported by a SBSWMP which includes water sensitive urban design measures such as detention basins, swales and bio-filtration basins. ▪ Stormwater infrastructure should maintain existing, natural flow regimes and velocities.
Weed invasion and/or edge effects	Low	▪ Avoid dispersal of weed species from both internal and external sources by implementing control measures during the construction phase, such as ensuring all vehicles are cleaned (i.e. free of contaminants) prior to entering the

Impact	Level of Impact	Proposed Mitigation Measures
		subject site. ▪ Ensure all removed weeds; weed-affected materials and rubbish are appropriately disposed of off-site. ▪ No environmental weed species will be used in landscaping associated with the proposed development.
Pest animals	Low	▪ No disposal of food and waste on-site. ▪ No domestic animals allowed on site during construction phase.
Noise	Low	▪ Construction activities are limited to reasonable daylight hours. ▪ No night-works to be conducted.

Aquatic biology

Whilst the Buffel Village site does not include any creeks or waterways, some secondary impacts to downstream waterways may occur during the construction process. These impacts would arise from clearing associated with soil disturbance/exposure and altered water flow patterns, and subsequent erosion and sedimentation, and may potentially alter the physical form, chemical processes and ecological health of downstream aquatic habitats.

More widespread impacts from fuels and chemical spills from storage areas, and oils from heavy machinery entering the environment, can also result if contaminants reach waterways. These risks are more likely to occur during the construction of the villages than during their operational phases.

6.5.3 Recommendation and Mitigation Measures

As identified above in Table 8, a number of mitigation measures are recommended in the Ecological Assessment to ameliorate the impacts of the development, including:

- the inclusion of native trees in the landscaping
- revegetation of the retained bushland with site appropriate species;
- offsetting the vegetation to the cleared;
- inclusion of fauna habitat and food species in the landscaping;
- directionally appropriate sequential clearing during construction to allow fauna time to move from the clearing site into retained areas;
- demarcation of vegetation clearing/retention areas;
- monitoring for koalas during construction;
- erosion and sediment control measures are implemented during construction;
- water sensitive urban design principles should be included within the stormwater management infrastructure; and
- weed management throughout the area to be disturbed by development.

With specific regard to the offsetting of vegetation clearing, in line with the ratios set out in the Coordinator-General's Report the following offsets are necessary as set out in Table 9. These ratios are:

- zero offsets for "least concern" REs;
- 1:2 offsets for "of concern" REs (VMA status and biodiversity status); and
- 1:3 offsets for "endangered" REs and endangered ecological communities under the EPBCA.

Table 9: Minimum Required Offset Areas for Buffel Village

RE	VMA Status	Biodiversity Status	EPBCA Status	Area (ha)	Ratio	Offset (ha)
11.7.1	Least Concern	Of concern	NA	6.0	2	12
11.7.1	Least Concern	Of concern	NA	2.4	2	4.8
11.4.3	Endangered	Endangered	Endangered	4.6	3	13.8
11.7.1	Least Concern	Of concern	NA	2.9	2	5.8
11.7.1	Least Concern	Of concern	NA	0.3	2	0.6
11.7.1	Least Concern	Of concern	NA	1.5	2	3
Total non EPBCA				**13.1**		**26.2**
Total EPBCA				**4.6**		**13.8**
TOTAL				**17.7**		**40**

These offsets are to be included in the broader BMA Caval Ridge Biodiversity Offset program.

The Buffel Village proposals are accompanied by a Site Based Stormwater Management Plan and an Erosion and Sediment Control Plan (contained in the engineering report at Appendix L to the DA) which will be supported by BHP/BMA's chemical management procedures during both construction and operational phases as noted above in Section 6.2.8. These proposed management plans will ensure that downstream impacts from runoff do not adversely affect aquatic ecology.

On the basis that the development implements the proposed mitigation measures, the construction and operation of Buffel Village is able to be conducted in an acceptable manner.

6.6 Air quality

Existing Characteristics

The existing characteristics of the Buffel Village site are largely as described in the EIS/SEIS (Section 10.1).

Proposed Change/Development and its Effects

The proposed change in the location of the Construction Village from Denham Village to Buffel Village is not considered to have significant adverse effects. The change will relocate the construction workforce from north-west of the CRM construction site and Peak Downs Mine to south of these locations. As predominant breezes in the locality are from the east, this change will reduce the overall number of people potentially exposed to dust generated during the construction process.

The modelled dust contours associated with the CRM have been considered in respect of the occupation of the construction and Operations Villages. These effects have been summarised in an Air Quality Report prepared by URS and appended to the DA. The Air Quality Assessment focused on impacts associated with emissions of dust from the mine. The air quality assessment methodology is based on that utilised by URS for the CRM EIS and supplementary EIS air quality technical reports. The local meteorological conditions are such that wind directions are predominantly from the south-east to east, with the CRM located to the north of the proposed Accommodation Villages.

For this assessment, dust impacts at the Buffel Park Accommodation Villages have been modelled for three years of dust-generating activities from the CRM site:

- Year 1, representing construction of the initial box cut in the Horse pit, and mining operations in the existing Heyford pit ;

- Year 2, representing the first year of mining operations on the western side of the mining area; and
- Year 20, representing mining towards the eastern side of the mining lease.

For each of the three years, two scenarios have been modelled representing typical operations and worst-case emissions of dust from CRM.

Results of the dispersion modelling suggest that the CRM will contribute a maximum of 32 µg/m^3 to the 24-hour average ground-level concentration of PM_{10} at receptor locations within the Buffel Village under typical operating conditions (year 20).

During worst-case 24-hour operating conditions, dust emissions from the CRM are predicted to contribute a maximum of 36 µg/m^3 to the 24-hour average ground-level concentration of PM_{10} at receptor locations within the Buffel Village. The likelihood of optimal operational conditions occurring in combination with meteorological conditions that are associated with worst case dust impacts is estimated at 0.002% (equivalent to 1 day in 131.5 years). It is noted that this result is below the 50 µg/m^3 objective contained in the EPP(Air) and the relevant DERM adopted guideline for dust deposition.

The ground level concentration of $PM_{2.5}$ is not predicted to exceed the relevant EPP (Air) objective at any of the receptor locations under typical operations.

Ground-level concentrations of TSP and dust deposition are not predicted to exceed the relevant mine goals at any of the receptor locations included in the dispersion modelling.

Results of the modelling suggest that the ground-level concentrations of $PM_{2.5}$ and total suspended particulates will not exceed the relevant EPP(Air) objectives at receptor locations within either the Accommodation Villages for all years assessed. Additionally, dust deposition is not predicted to exceed the relevant air quality goals at any of the receptor locations.

The air quality assessment notes that elevated ground-level concentrations of PM_{10} above the EPP(Air) objective of 50 µg/m^3 for the 24-hour average concentration are predicted to occur a maximum of 6 times per year during Year 20. This finding represents worst case impacts, and is dependant upon a particular method of activity within the mine occurring at optimal capacity for a full 24 hour period in conjunction with certain meteorological conditions.

Air quality modelling is dependant upon the limitations inherent in the software and the level of detail utilised in the construction of the model, and therefore the results do exhibit a degree of generalisation. However, the level of dust impacts on air quality is relatively low and with the introduction of mitigation measures both within the mine operations (at point of source) and at the Accommodation Villages (at point of impact), the effects on occupation of the villages can be minimised.

The Buffel Village uses will not generate air pollution other than in relation to the movement of vehicles and the use of plant and equipment on the site. The air quality implications of these activities are minimal, and no mitigation measures are warranted.

The dispersion modelling indicates that dust emissions from the CRM tend, with the dominant easterly winds, to drift north and north-west of the mine towards Moranbah. Whilst significant dust is not anticipated to impact on the township, as discussed in the SEIS and the Coordinator-General's Report, the complex interaction of the overall pattern of land use, urban expansion opportunities, ownership fragmentation and modelled dust-affected areas is such that there are limited locations between the CRM and Moranbah which could accommodate any form of workforce village. The scale of the proposed accommodation, at 2000 beds for construction and maintenance activities and 500 beds for operational purposes, is such that a village cannot be accommodated within any available land parcels without resorting to dividing the village into a number of locations. This would not be desirable from a land use or visual impact points of view.

Recommendation and Mitigation Measures

All accommodation and staff buildings in Buffel Village will be air conditioned, including the use of high quality ultra-fine filters to prevent the passage of dust.

6.7 Climate change

6.7.1 Greenhouse gas emissions and abatement

Existing Characteristics

Section 11 of the EIS and Section 5.11 of the SEIS, along with further explanatory material dated May 2010 provided an approach to the estimation of greenhouse gas (GHG) emissions from the CRM project, using a model which used the Greenhouse Gas Protocol (2004).

These estimates considered the construction and operational phases of the CRM project and estimated:

- Scope 1 emissions originating from the project;
- Scope 2 emissions from electricity purchased and consumed by the project; and
- Scope 3 emissions from indirect bus associated activities.

The Coordinator-General's Report concluded that during both the construction and operational phases of the project the Scope 1 and 2 GHG would be significant, but that a condition that imposed a definitive offset would be unreasonable and unprecedented. Instead, the Coordinator-General included Imposed Condition 12 (at Schedule 1 of Appendix 1 of the Coordinator-General's Report) which required the implementation of a GHG Management Plan.

Proposed Change/Development and its Effects

The proposed inclusion of Buffel Village to the project and the alterations to accommodation capacity do not affect the manner in which the mine itself will be constructed or operated, and therefore the changes do not alter the GHG emissions from the mine component of the project.

Despite this, whilst the changes do have implications for GHG emissions as outlined below, these implications are immaterial given the overall emissions of the project, particularly the extent of emissions from the mining activities.

Emissions directly attributable to Buffel Village during the construction phase will be primarily Scope 1 emissions associated with movement of materials and personnel to and from the Buffel Village site, though a relative proportion of these emissions would occur under the Denham Village proposition. Scope 2 emissions arising from occupation of the temporary fly camp and Construction Village will also arise, and it is acknowledged that these emissions would be greater than those considered in the EIS/SEIS given the increase in workforce personnel.

Emissions directly attributable to Buffel Village during the operations phase will also be Scope 1 and 2 emissions generated from similar sources as during the construction phase of the village.

Again, these emissions would be slightly greater than those considered in the EIS/SEIS given the increase in workforce personnel. The change in operations accommodation location from the Moranbah based Accommodation Village strategy referred to in the EIS to the Buffel Village proposal still requires travel from the accommodation to the mine site, and therefore little material change to the emissions considered in the Coordinator-General's Report are anticipated to eventuate.

Overall however, the greenhouse gas emissions associated with Buffel Park Village are not expected to be significant, and the total emission of greenhouse gases is expected to be less than the 25 kilotonnes or more of greenhouse gas designated under the National Greenhouse and Energy Reporting Act 2007 as a reporting trigger for significant emitters.

Recommendation and Mitigation Measures

The required GHG Management Plan will include components that address the Scope 1 and 2 emissions associated with the development and use of Buffel Village. It is considered that the measures required under Imposed Condition 12 are adequate to reflect the inclusion of the Buffel Village proposals, and that the condition will not require amendment.

A range of building sustainability features are integral to the accommodation buildings, including use of:

- energy efficient lighting throughout the villages;
- water appliances that meet or exceeds wells requirements;
- inverter based air conditioning systems;
- heat pump technology for hot water services;
- tank water to toilets;
- low e glass;
- R4.5 insulation in ceilings and R3 insulation in walls; and
- as much as practicable, selection of materials and products bearing the "good environmental choice" label from the Green Building Council.

It is noted that the achievement of a high level of energy efficiency standards has been fundamental to the design of the accommodation buildings in the Operations Village. The proposed buildings are modelled on buildings installed by BMA at Dysart which have achieved a minimum 6-star energy efficiency rating under the National Australian Built Environment Rating System (NABERS). NABERS is a performance-based rating system for existing buildings which rates a building on the basis of its measured operational impacts on the environment.

The buses associated with the transport of personnel for FIFO movements and worksite movements will be a modern and well maintained fleet.

6.8 Noise and vibration

Section 12 of the EIS provides an assessment of noise and vibration matters associated with the construction and operation of the CRM. For the proposed Buffel Village changes, a further *Construction and Operational Noise and Vibration Assessment* has been prepared by Heggies (refer to Appendix O to the DA).

Existing Characteristics

Buffel Village is located in a rural location and as such as a relatively quiet environment.

The EIS and associated noise report considered the ambient acoustic characteristics applicable to the Buffel Park Homestead located approximately 4.5km north west of the proposed Buffel Village site. These characteristics are presented in Table 2 of the Heggies' noise assessment, and are reproduced below as Table 10.

Table 10: Criteria for Existing Sensitive Noise Receivers

Sensitive Receiver	Day	Evening	Night
minL_{A90}, 1 hour (dBA)	30	25	25
LA_{EQ}, 1 hour (dBA)	36	37	28

These characteristics are likely to be representative of both the Buffel Village site and surrounding sensitive noise receivers, the nearest being the house located on Skyville Stud (Lot 1 on RP616025) approximately 1.9km south of the Buffel Village site.

Proposed Change/Development and its Effects

Heggies' assessment (at Appendix O to the DA) has considered the following effects:

- mine construction operations on the proposed village;
- mine operations (noise, vibration and airblast) on the proposed village;
- traffic movements on the proposed village;
- village operation on nearby sensitive receivers and

- village operation on village occupiers.

Heggies' studies have identified that:

- Occupation of the villages will not be adversely affected by activities at the mine or road traffic noise;
- Accommodation buildings in both elements of the village may be adversely affected by noise sources within the village;
- Occupation of the Villages is not likely to result in noise impacts to the nearest sensitive receiving environment, being the house located on Skyville Stud (Lot 1 on RP616025) provided noise mitigation measures are implemented.

Accommodation buildings in the villages may be adversely affected by local noise sources within the village(s), primarily from the operation of plant such as air conditioner condenser units, refrigeration units and the backup generators. Accordingly, sufficient noise reductions can readily achieved by locating plant appropriately, and physical controls such as barriers and partial enclosures.

Noise impacts on existing sensitive receivers could potentially exceed the required criterion by 8 dBA should there be no mitigation at point source. However, the reductions of up to 8 dBA as required are achievable with commercially available noise control technologies.

Recommendation and Mitigation Measures

With appropriate attention to mechanical plant noise during the detailed design phase the proposed project will achieve the appropriate noise criteria both within and external to the Accommodation Villages. Such mitigation measures will be specified during the detailed design phase of the project and are likely to consist of housings for major plant (generators, pumps, compressors etc) with acoustic design features.

6.9 Transport

Existing Characteristics

The Buffel Village site is a rural location which is accessible by road. The existing use of the site generates a negligible amount of traffic.

The approved traffic generation and movement patterns associated with the CRM have been considered as "existing" for the purpose of identifying and analysing the effect of the proposed changes.

Proposed Change/Development and its Effects

The proposed changes to the location of workforce accommodation and the accommodation capacity will result in different implications for traffic generation, movement and impacts compared to the impacts identified in the EIS/SEIS.

The proposed changes do not require alterations to the construction or operational accesses from Peak Downs Highway to the CRM site.

A Traffic Study prepared by SKM (Appendix M to the DA) has considered the impacts of the proposed Buffel Village on the current traffic conditions, traffic generated during the construction phase of the villages and mine as well as traffic implications when the village becomes operational. The Traffic Study includes a comparison with the situations described and addressed under the EIS/SEIS.

To assess the traffic impacts, four transport demand scenarios were assessed:

(1) Prior to opening of construction Accommodation Village;
(2) After opening of Accommodation Village – peak construction period;
(3) At conclusion of mine construction; and
(4) Future year operations period, 2014 - 2023.

The traffic assessments were undertaken on the basis of the proposed manner of operation of the construction and Operations Villages, namely:

- 90% FIFO operation of the Construction Village, with workers either active on the Buffel Village site or bussed to the mine site, including construction activities between 6am and 5pm only; and
- 70% FIFO operation of the Operations Village, with workers bussed to the mine site.

A traffic assessment was performed on both the existing intersections (Peak Downs Highway/Moranbah Access Road & Peak Downs Highway/Winchester Road) and the proposed new intersections (Peak Downs Highway/Buffle Village Access Road & Peak Downs Highway/Mine Access Road)

During the CRM construction phase:

- all intersections would perform within the acceptable range of degree of saturation, delays and queues; and
- the existing intersections of Peak Downs Highway/Moranbah Access Road and Peak Downs Highway/Winchester Road would not require upgrades to accommodate the forecast traffic volumes considering background traffic growth.

During the operational phase of the CRM, at the commencement of operations (assumed to be 2014):

- the existing intersections of Peak Downs Highway/ Winchester Road and Peak Downs Highway/Moranbah Access Road would perform within the acceptable range of degree of saturation, delays and queues;
- the right turn from Moranbah Access Road is estimated to operate at Level of Service C in the evening peak (with a 0.310 Degree of Saturation);
- The addition of minimal operational workforce movements from Moranbah to the mine has no material impact on the Degree of Saturation, delays, queues and Level of Service at either intersection.

However, by 2023, base conditions of background traffic growth of 10 per cent per annum would result in unacceptable conditions at the intersections of Peak Downs Highway/ Winchester Road and Peak Downs Highway/Moranbah Access Road. Consequently, additional CRM operations traffic movements would have no material impact on the operation of the intersections. The problem movements would be:

- Right turn from Moranbah Access Road to Peak Downs Highway in the am and pm peak would be Level of Service F; and
- Right and left turn from Winchester Road in the evening peak would be Level of Service E.

Based on the assumed 10 per cent background traffic growth, upgrades to both intersections would be required before 2023, irrespective of traffic generated by the CRM. On a pro-rata basis it can be anticipated that both intersections would reach their desirable maximum Degree of Saturation of 0.8 around 2019-2020, based on the assumed continuous growth of background traffic of 10 per cent per annum.

Upgrades to the intersections of Peak Downs Highway/ Winchester Road and Peak Downs Highway/Moranbah Access Road to resolve these issues are addressed in the EIS/SEIS and the Coordinator-Generals existing conditions. Imposed Condition 15 establishes a number of obligations that BMA must undertake in order to acceptably implement the CRM project. These obligations remain applicable to the changed project, but do require revision in some respects to address the introduction of Buffel Village and the requirement for an access from the village onto the Peak Downs Highway.

Recommendation and Mitigation Measures

The anticipated traffic and transport effects of the proposed change are acceptable on the following basis:

- Completion of the upgrades to both the Peak Downs Highway/Moranbah Access Road and the Peak Downs Highway/Winchester Road intersections in line with the requirements of the EIS/SEIS and existing Coordinator-General's Imposed Conditions;
- Construction of an appropriately design intersection providing access to the Buffel Village site from the Peak Downs Highway; and

- Amendment of Imposed Condition 15(f) to include in the TMR Road Infrastructure Agreements the Buffel Village access arrangements, modelled on the existing condition that relates to Denham Village.

6.10 Cultural heritage

Existing Characteristics

The Buffel Village site, as part of Buffel Park, has been used for low intensity grazing activities for several decades.

An Indigenous cultural heritage site assessment has been undertaken by Woora Consulting. A summary of the activities is included as Appendix T of the DA. The assessment identified Culturally Significant Sites, and that significant items have been salvaged.

A desktop consideration of the potential for non-indigenous cultural heritage has been undertaken during the site selection and design preparation phases for Buffel Village. Given the limited non-indigenous use of the site, it is considered that there is no cultural heritage of note.

Proposed Change/Development and its Effects

The development of Buffel Village will require the clearing of some vegetation and earthworks over a considerable proportion of the project site. These activities are potentially harmful to Indigenous cultural heritage, and therefore the salvage of items of significance found by the survey team who undertook the cultural heritage assessment was warranted.

Recommendation and Mitigation Measures

Matters relating to Indigenous cultural heritage will be managed in accordance with the Cultural Heritage Management planned signed by BMA and the BaradaBarna People and registered with DERM.

This will include the monitoring of two areas of Indigenous cultural heritage value during the construction process, as recommended by Woora Consulting.

6.11 Social and Economic

Existing Characteristics

The existing social and economic situation is addressed in detail in the Sections 16, 17 and 18 EIS/SEIS, which includes a Social Impact Assessment.

The EIS/SEIS and Coordinator-General's Report address the social impacts of the CRM project, and consider there to be a number of themes relevant to the project:

- Cumulative impacts;
- Housing and accommodation issues;
- Community health, safety and well-being;
- Social infrastructure;
- Workforce matters;
- Employment and economic development;
- Indigenous engagement; and
- Stakeholder engagement.

In order to address issues arising through these themes, the Coordinator-General's Report requires the preparation of a Social Impact Management Plan (SIMP), as set out in Imposed Condition 10.

Additionally, it is noted that Denham Village is on ML1775 and does not require development approval under the SPA (pursuant to Schedule 4 Table 5 Items 1 and 2 of the *Sustainable Planning Regulation 2009*). Should, for project timeframe reasons, BMA elect to proceed with a Construction Village at Denham Village, the social and economic impacts of the construction element of the changes will not be addressed through Part 4 of the SDPWOA.

Proposed Change/Development and its Effects

The proposed location and capacity changes to the accommodation solutions within CRM project are not considered to give rise to significant differences in impact to those addressed under the EIS/SEIS and considered by the Coordinator-General to date.

Cumulative Impacts

The proposed changes do not provide for an alteration in the mining operations or the management of environmental effects arising from the mining process, and therefore, cumulative impacts are limited.

The proposed changes to the project concern the delivery of accommodation to the construction workforce and the clarification of the previously proposed out-of-town operational village. The retention of a 70% FIFO operational mining workforce strategy is considered to represent no real change to the EIS/SEIS reference project, and therefore the cumulative impacts of the changes do not differ from those addressed by the Coordinator-General's Report.

BMA acknowledges the Coordinator-General's Recommendation of a IRC/DIP study into the cumulative social impacts of the mining industry's operations in the Isaac Regional Council area, and accepts the company's role in participating in the study.

Housing and Accommodation Issues

As noted above, the changes proposed do not represent a fundamental alteration of the workforce accommodation strategies presented in the EIS/SEIS. In summary, under the EIS/SEIS:

- 90% of the 1200 person construction workforce was to be accommodated at Denham Village; and
- 70% of the 495 personnel mining operations workforce was to be accommodated in a village located outside of Moranbah.

The adoption of Buffel Village as a site for the co-location of these Accommodation Villages does not significantly change the social or economic relationship of either village to Moranbah.

The increase in room numbers within the Accommodation Villages is noted as being an intensification of the development, which would increase required servicing, as discussed below in relation to economic and employment opportunities.

The retention of the proposed accommodation strategy is considered the most effective method of delivering sufficient housing within an appropriate timeframe to meet the CRM Project's needs without adversely affecting the present housing supply and cost situation in Moranbah. To that end, these proposed accommodation arrangements have been included as changes to the project in order to address the Coordinator-Generals Imposed Condition 14(d) requiring assessment of accommodation against the BBCGP ToR.

Community Health, Safety and Well-Being

The community health, safety and well-being effects of the proposed changes are considered to be minimal, given that the anticipated workforce would be present in the Moranbah community under the EIS/SEIS reference project.

Social infrastructure

Similarly, the social infrastructure requirements arising under of the proposed changes are considered to be minimal. This is as under the EIS/SEIS, a relatively equivalent workforce was planned as being resident in

the Moranbah area, and there has been no would be present in the Moranbah community under the EIS/SEIS reference project.

Workforce Matters

The proposed changes to the accommodation location will not impact upon workplace diversity, whilst the increased capacity of accommodation, reflecting adjusted workforce numbers, will provide greater employment opportunities. BMA will maintain its commitment to safety, employee behaviour and community relations.

Employment and Economic Development

The EIS and the Coordinator-General's Report notes that the proposed BMA Community Network (BCN) will provide an avenue to continue the implementation of BMA's *Community Investment Program*.

Construction and operation of the Accommodation Villages will provide an on-going opportunity for local and regional suppliers to provide materials and services for the Accommodation Villages. BMA has flagged in the EIS that local supply opportunities may exist, and that these will be pursued through the BCN as required through the Coordinator-General's Recommendation 11(e).

The proposed changes to the location and capacity of the villages does not reduce the opportunity for local businesses to supply to the CRM project, and with the adjustment of accommodation capacity, may provide for greater involvement. Further, the villages, whilst physically separate from Moranbah, will have a commercial nexus and relationship with the township due to its convenient travel time.

Engagement

Indigenous and stakeholder engagement is necessary as a component of the overall Social Impact Management Plan. The proposed changes to project, in respect of either the location of accommodation or the capacity of the accommodation provided, will not impact on the required engagement processes.

Recommendation and Mitigation Measures

Management of the social and economic effects of the proposed changes is considered to be best addressed through the proposed mitigation measures outlined in the EIS/SEIS and formalised through the Coordinator-General's Imposed Conditions and Recommendations in respect of the BCN and the SIMP.

The on-going monitoring of local employment and supply arrangements are considered an appropriate method of providing local benefits from the Accommodation Villages. To that end, the requirements arising though the Coordinator-General's Recommendation 11(e) are to be maintained.

6.12 Health, Safety, Hazard and Risk

Section 19 of the EIS assesses the health and safety issues associated with the construction, operation and decommissioning phases of the CRM.

This Section considers the health and safety of project employees and the public in light of the proposed changes, and mitigation strategies are outlined where appropriate. The hazards are analysed to identify any significant residual risks to human health, safety or natural ecosystems.

Existing Characteristics

The significant risks arising from the development of the proposed accommodation at Buffel Village concern risks arising during the construction process and the risk of bushfire given the site's rural location.

Bushfires

As noted in the EIS (Section 4.1.8.4), the Bureau of Meteorology has determined that the climate factors

which exert most influence over bushfire weather are temperature, winds, and humidity. A combination of high temperature, high winds, and low humidity increases fire danger.

In Queensland, spring (particularly late spring) brings a combination of these climate factors which constitute the fire season. During winter, the temperatures and rainfall are low. In summer, while the temperatures are at their hottest, the rainfall also increases reducing the risk of a significant fire. In the period between winter and summer, the fuel is very dry from the lack of rainfall during the winter months, and the temperatures increase.

The Rural Fire Service and Queensland Fire and Rescue Service have modelled the bushfire risk for IRC (QRFS, 2008). The area surrounding Moranbah is primarily classified as having a medium to low bushfire risk, although there are areas within the region classified as having a high bushfire risk. This risk modelling examined factors of slope, aspect and vegetation.

Landslide

The risk of landslide is identified through State Planning Policy (SPP) 1/03. The Buffel Village site has a gentle topography and is not anticipated to present a risk of landslide.

Flooding

As noted above in Section 6.4.1, the waterways within the site are minor and not subject to significant flooding. During high intensity rainfall events, these waterways would contain local flooding which is not anticipated to overtop the watercourse as the site is located high in the catchment.

Proposed Change/Development and its Effects

Risks

Risks concerned with the construction and occupation of Buffel Village arise during the construction phase, and are adequately addressed through the general comments in this regard in the EIS. The Buffel Village site is not considered to raise particular risks compared to the Denham Village site and/or the unspecified out of town location for the operational workforce accommodation.

Bushfire

A Bushfire Management Plan has been prepared by RPS, contained as Appendix K to the DA, to review the bushfire hazards present on the site and the potential management regimes for development in line with SPP1/03. In general terms, the Bushfire Management Plan identifies that the site has medium bushfire hazards.

Landslide

The proposed earthworks on the site are relatively minor and will not result in the creation of landslide risks.

Flooding

Development of the Buffel Village site for accommodation purposes will change the pattern of stormwater flow through the site, raising the potential for downstream flooding. The proposed Site Based Stormwater Management Plan addresses on-site stormwater effects, including local flooding, and provides engineering solutions which use water sensitive urban design processes to ensure that there is minimal change to discharges. On this basis, the downstream consequences of the development in terms of flooding are considered to be minor.

Recommendation and Mitigation Measures

Risks

BMA will implement the BHP Billiton Health, Safety, Environment and Community Management Standards that are currently in use at all BMA operations and provide the basis for effective management of employee

and public health and safety.

BMA's present health and safety policies address the following matters:

- Dangerous Goods and Hazardous Substances
- Construction phase:
  - Dust from road and earthworks
  - Traffic incidents off site (movement of heavy equipment to site)
  - Traffic incidents on site (mine, CHPP and water supply pipeline).
  - Construction activity hazards (mine, CHPP and associated infrastructure)
  - Excavation and trenching: Injury to persons from falling into or being buried by collapsing excavation
  - Manual handling injury caused by poor or incorrect manual handling
  - Slump of sloped ground
  - Leaks of oil, fuel or chemicals from vehicles onto construction earthworks (mine, CHPP and water supply pipeline)
  - Pests (weeds) brought to site by earthmoving equipment (mine and water supply pipeline).
  - Runoff from disturbed areas.
  - Excessive noise (e.g. earth moving equipment, generators)
- Operational Phase:
  - Dust from road and earthworks
  - Traffic incidents off site (movement of heavy equipment to site)
  - Traffic incidents on site
  - Leaks of oil, fuel or chemicals from vehicles during site operations
  - Chemical release: liquid from leaks, ruptures, over-flows, spillage or pooling and released to atmosphere or ground systems
  - Excessive noise (eg mine equipment)
  - Failure to provide emergency treatment and response
  - Contact with high voltage electricity
  - Spillage from water supply pipeline.

Bushfire

The Bushfire Management Plan (Appendix K to the DA) proposes a range of design measures, including

- Building setbacks from retained vegetation of 1.5 times the canopy height;
- Fire breaks between buildings and hazardous vegetation;
- On-going landscape management within and surrounding the Accommodation Villages to ensure that over time threats do not increase; and
- Consideration of building and infrastructure design in line with best practice and adopted standards.

Landslide

No mitigation measures are required in relation to landslide other than the conduct of engineering operations with due care and attention.

Flooding

The flooding impacts of the development are addressed in the Site Based Stormwater Management Plan, (Development Application

Summary

The proposed management regimes presented above are considered to be sufficient to address the inclusion of the accommodation solutions at Buffel Village and proposed in these changes. Greater detail on the management of dangerous goods, operational practices and bushfire safety will be prepared as detailed design and occupations procedures for Buffel Village are established over time.

7 Other Matters

7.1 Matters of National Environmental Significance

As noted above, the proposal results in the clearing of a small extent of vegetation listed as Threatened under the EPBCA.

BMA will consult with the DEWHA in respect of this clearing and undertake any appropriate action.

7.2 Proponent Commitments

The EIS includes a number of commitments made by BMA regarding the construction and operation of the CRM Project.

As this request relates specifically to the workforce accommodation, additional commitments are made throughout this report in order to address the environmental impacts of the proposed Buffel Village accommodation.

These commitments are:

- Implementation of a Site Based Stormwater Management Plan;
- Staging and capped room numbers by stage;
- Noise and lighting controls;
- Vegetation clearing offsets of endangered and of concern ecosystems;
- Salvage of indigenous artefacts;
- Monitoring of indigenous cultural heritage sites during construction process;
- Landscape screening to highway;
- Use of endemic native planting in the landscape works;
- Implementation of an Erosion and Sediment Control plan during construction;
- Bio-retention/detention basins;
- Contamination avoidance though use of BHP/BMA operating procedures;
- Waste separation/streaming at point of source for recycling collection;
- Class A+ STP output;
- Wastewater return to mine;
- Retention of bushland throughout development site wherever possible, using sequential clearing;
- Bushfire Management Plan;
- Limitation on earthworks to the greatest extent possible;
- Use of air-quality filters on buildings;
- Commitment to safety and employee behaviour;
- Energy and resource efficient building design and fittings;
- Noise attenuation of plant and equipment at point of source;
- Peak Downs Highway / Moranbah Access Road and Peak Downs Highway / Winchester Road upgrades in line with EIS/Coordinator-General Report Imposed Conditions;
- New access to Buffel Village to DTMR standards; and
- Commitment to the SIMP and BCN required through the Coordinator-General Report Imposed Conditions.

7.3 Coordinator-General's Conditions and Recommendations

Appendix 1 of the Coordinator-General's Report contains a number of conditions and recommendations.

In light of the proposed Changes, comments on the Coordinator-General's conditions, proposed jurisdictions and recommendations are made as attachments to this Report, identifying where conditions and/or recommendations require amendment and or their on-going applicability to the changed project.

Table 11: Attachments Regarding Conditions and Recommendations

Attachment	Section
Attachment C	Imposed conditions
Attachment D	Jurisdiction of Conditions
Attachment E	Stated Conditions
Attachment F	Recommended Conditions addressing future SPA applications
Attachment G	Coordinator-General's Recommendations

8 Conclusions

BMA proposes to develop the CRM approximately 17km south of Moranbah. As part of BMA's BBCGP, the CRM Project is a significant project under the SDPWOA, for which the Coordinator-General has completed assessment of the Project. The Coordinator-General's Report was released in August 2010.

This report describes proposed alterations to the CRM Project in relation to solutions for accommodating the workforce. This report outlines a change request made to the Coordinator-General under Section 35C of the SDPWOA. These changes also take into account a number of matters that arise through the Coordinator-General's Report on the Caval Ridge EIS/SEIS that are associated with accommodation provisions.

The changes sought in this request relate to:

- A temporary fly camp and Construction Village (permanent) to be located at the proposed Buffel Village site;
- Location of an operational workforce Accommodation Village (permanent) on the Buffel Village site;
- Inclusion of periodic accommodation needs of visiting maintenance personnel to be accommodated within the Construction Village (where located on Buffel Village); and
- Adjustment to the workforce numbers.

This report addresses, where relevant, issues raised in the ToR for the BBCGP, the EIS, SEIS and the Coordinator-General's Report. As required under Section 35E of the SDPWOA, this report provides:

- A description of the proposed changes and their effects on the Project (Section 35E(a);
- Reasons for the proposed changes (Section 35E(b)); and
- The environmental impacts of the proposed changes (Sections 35C and 35H(c)).

It is submitted that this report provides the necessary detail on the proposed changes to the CRM Project to allow the Coordinator-General to evaluate and support the proposed changes.

This conclusion has been reached as the proposed changes provide for improved accommodation arrangements for the construction and operational workforces, address a number of elements raised in the Coordinator-General's Report regarding accommodation requirements, and provide a better solution to amenity, traffic and visual impacts than the solutions put forward under the EIS/SEIS.

Attachment A Construction Village DA

Prepared by

RPS

Construction Village DA			
Reference	**Title/Name**	**Prepared By**	**Date**
24465-10-CV	Construction Village Development Application *including appendices and associated technical reports, comprising:*	RPS	September 2010
	Appendix A IDAS Forms	RPS	
	Appendix B Searches and Site Information	RPS	
	Appendix C Accommodation Villages Masterplan	RPS	
	Appendix D Construction Village Sequence	RPS	
	Appendix E Temporary Fly Camp Extent	RPS	
	Appendix F Temporary Fly Camp Imagery	N/A	
	Appendix G Construction Village Architectural Plans	SKM	
	Appendix H Landscape Plans	RPS	
	Appendix I Ecological Assessment	RPS	
	Appendix J Bushfire Management Plan	RPS	
	Appendix K Engineering Report	SKM	
	Appendix L Engineering Drawings	SKM	
	Appendix M Traffic Report	SKM	
	Appendix N Air Quality Report	URS	
	Appendix O Noise and Vibration Assessment	Heggies	
	Appendix P Good Quality Agricultural Land Report	GSS Environmental	
	Appendix Q Construction Management Plan	SKM	
	Appendix R Visual Assessment	RPS	
	Appendix S Cultural Heritage Clearance	Woora Consulting	
	Appendix T Code Responses	RPS	
	Appendix U Documents and Drawings For Approval	RPS	

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Attachment B Operations Village DA

Prepared by

RPS

Operations Village DA			
Reference	**Title/Name**	**Prepared By**	**Date**
24465-10-CV	Construction Village Development Application *including appendices and associated technical reports, comprising:*	RPS	September 2010
	Appendix A IDAS Forms	RPS	
	Appendix B Searches and Site Information	RPS	
	Appendix C Accommodation Villages Masterplan	RPS	
	Appendix D Operations Village Sequence	RPS	
	Appendix E Operations Village Architectural Plans	PF Brammer	
	Appendix F Landscape Plans	RPS	
	Appendix G Ecological Assessment	RPS	
	Appendix H Bushfire Management Plan	RPS	
	Appendix I Engineering Report	SKM	
	Appendix J Engineering Drawings	SKM	
	Appendix K Traffic Report	SKM	
	Appendix L Air Quality Report	URS	
	Appendix M Noise and Vibration Assessment	Heggies	
	Appendix N Good Quality Agricultural Land	GSS Environmental	
	Appendix O Construction Management Plan	SKM	
	Appendix P Visual Assessment	RPS	
	Appendix Q Cultural Heritage Clearance	Woora Consulting	
	Appendix R Code Responses	RPS	
	Appendix S Documents and Drawings for Approval	RPS	

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Attachment C Commentary on Imposed Conditions

Prepared by

RPS

Note: Conditions considered not requiring change as part of this change request have been abbreviated for ease of reference purposes.

This Table has been prepared on the basis that this change request is considered favourably by the Coordinator-General.

On this basis, there will be a requirement to make SPA applications for the proposed Accommodation Villages at Buffel Park pursuant to Part 4 Division 4 SDPWOA. It is considered that minimal changes and inclusions will be required to the imposed conditions, with the majority of inclusions being contained at a new Schedule 3A, being stated conditions for SPA applications.

Table: Commentary on Imposed Conditions

Condition	Comments and suggested condition wording
Schedule 1 Coordinator-General's imposed conditions	
PART 1: GENERAL CONDITIONS	
1. General Conditions	
(a) The project must be carried out generally in accordance with the Caval Ridge Coal Mine Project EIS (July 2009) and SEIS (November 2009), and Appendices 2-5 of this report	Minor changes required to this condition to reflect the supporting documentation to the change request: *(a) The project must be carried out generally in accordance with the Caval Ridge Coal Mine Project EIS (July 2009), SEIS (November 2009) and documentation supporting the change application (September 2010).*
(b) Notification of the commencement of the construction and operation stages of the CRM	No change of condition wording required
(c) Final commitments register for the CRM	No change of condition wording required
2. Mine Water Management	
Water Supply	
(a) Water supply strategy and emergency plan	No change of condition wording required
Water Releases	
(b) Water balance, water quality predictions and contaminated run-off reporting to DERM	No change of condition wording required
(c) DERM review and endorsement of any design changes to water supply, storage and transfer components of the CRM MWMS to ensure compliance with (b)	No change of condition wording required
Flooding	
(d) DERM approval of the CRM operational flood protection levees	No change of condition wording required
3. Flora and Fauna	
(a) Offset Strategy approval from DERM,	No change of condition wording required. Given the

Condition	Comments and suggested condition wording
Coordinator-General and DEWHA	change application involves freehold land captured by the Belyando Planning Scheme, the change application will require the referral and condition setting by a number of State Agencies. These conditions would be included within a new Schedule 3A. Buffel Park contains remnant vegetation mapped under the *Vegetation Management Act 1999* and brigalow, the clearing of which may be a controlled action under the EPBCA Additional Condition setting by State Agencies within Schedule 3A as a result of the introduction of Buffel Village as part of the change application
(b) Preparation of Threatened Flora and Fauna Species and Ecological Communities Management Plan to satisfaction of DERM and DEWHA	No change of condition wording required. It is expected that Schedule 3A will include additional conditions set by DERM relating to the Accommodation Village footprint on Buffel Park.
(c) Threatened Flora and Fauna Species and Ecological Communities Management Plan requirements	No change of condition wording required. It is expected that Schedule 3A will include additional conditions set by DERM relating to the Accommodation Village footprint on Buffel Park.
(d) Timing for submission of Threatened Flora and Fauna Species and Ecological Communities Management Plan to DERM and DEWHA	No change of condition wording required. It is expected that Schedule 3A will include additional conditions set by DERM relating to the Accommodation Village footprint on Buffel Park.
4. Audit Reports	
(a) Auditor and auditing requirements for Coordinator-General imposed conditions	No change of condition wording required
(b) Timing for third party audit reports	No change of condition wording required
(c) Audit report compliance/non-compliance requirements	No change of condition wording required
(d) Proponent is responsible for cost of third party audits	No change of condition wording required
(e) Response to third party audit recommendations	No change of condition wording required
(f) Audit reporting requirements to the Coordinator-General	No change of condition wording required
5. General Communication obligations	
(a) Public notification requirements (content, timing etc) of CRM construction works	No change of condition wording required
(b) Consultation requirements with owners and occupants of sensitive places adjacent, or potentially impacted by construction and operational works	No change of condition wording required
(c) Project update requirements for local community and businesses	No change of condition wording required
(d) CRM internet site requirements	No change of condition wording required
6. Moranbah BMA Community Network (Moranbah BCN)	
(a) Establishment and functions of the Moranbah BCN	No change of condition wording required
(b) Membership representation of the Moranbah	No change of condition wording required

Condition	Comments and suggested condition wording
BCN	
(c) Moranbah BCN SIMP functions	No change of condition wording required
(d) Moranbah BCN membership variation procedure	No change of condition wording required
(e) Proponent responsibilities for the Moranbah BCN	No change of condition wording required
(f) Moranbah BCN dispute resolution	No change of condition wording required
7. Community communication strategy	
(a) Construction period community communication strategy requirements	No change of condition wording required
(b) Community notification strategy requirements	No change of condition wording required
8. Environmental management representative	
Appointment and responsibility requirements of Environmental Management Representative(s)	No change of condition wording required
9. Consultation, review, complaints and non-conformance	
(a) Consultation procedure requirements	No change of condition wording required
(b) Non-compliance review process	No change of condition wording required
(c) Complaints process procedural requirements	No change of condition wording required
(d) Non-conformance process requirements	No change of condition wording required
10. Social Impact Management Plan (SIMP)	
(a) Preparation and submission of a draft SIMP	No change of condition wording required
Specification for release of draft SIMP for consultation	
(b) Draft SIMP requirements	No change of condition wording required
(c) Requirements for submission of final SIMP	No change of condition wording required
(d) Commencement of CRM linked to SIMP approval	No change of condition wording required
(e) Implementation of the final SIMP	No change of condition wording required
SIMP Monitoring	
(f) Components of SIMP monitoring plan	No change of condition wording required
SIMP reporting, review and auditing arrangements	
(g) Annual reporting and auditing requirements of SIMP	No change of condition wording required
(h) Additional internal reviews of SIMP	No change of condition wording required
Amendments and termination of the SIMP	
(i) Alteration, restructuring, re-scoping and termination of SIMP	No change of condition wording required
(j) Amendment process to SIMP	No change of condition wording required
(k) Notification of circumstances warranting amendment of SIMP	No change of condition wording required
(l) Stakeholder engagement as a result of SIMP amendments	No change of condition wording required
11. Proponent specific measures for managing social impact	
SIMP initiative documents	

Condition	Comments and suggested condition wording
(a) Draft SIMP documentation submission requirements to Coordinator-General	No change of condition wording required
Queensland Police Service (QPS) requirements	
(b) Requirements for engagement with QPS	No change of condition wording required
Department of Community Safety (DCS) requirements	
(c) Preparation of a CRM Emergency Management Queensland Procedure	No change of condition wording required
Workforce management requirements	
(d) Employee and contractor community integration requirements	No change of condition wording required
Indigenous engagement requirements	
(e) SIMP to include indigenous engagement strategy	No change of condition wording required
12. Greenhouse gas emissions	
(a) Preparation and implementation of Greenhouse Gas Management Plan	No change of condition wording required
(b) Requirements of Greenhouse Gas Management Plan	No change of condition wording required
(c) Approval requirements of Greenhouse Gas Management Plan	No change of condition wording required
PART 2: CONSTRUCTION PHASE	
13. Mineral waste	
(a) Belt press filter technology evidence to DERM	No change of condition wording required
(b) DERM ability to request further information on belt press filter technology	No change of condition wording required
14. Accommodation	
Construction workers living in Moranbah	
(a) CRM SIMP reporting requirements for CRM construction workforce	No change of condition wording required, as the trigger for this reporting is from the commencement of construction.
(b) Non-resident construction workforce living in Moranbah requirements	The establishment of Buffel Village provides an accommodation solution for housing the CRM workforce outside of Moranbah. This condition is therefore no longer relevant. We suggest this condition be deleted.
(c) Moranbah dwelling construction for non-resident construction workforce	No change of condition wording required
Assessment of new worker village proposals	
(d) Assessment of any new Accommodation Village for the CRM to be undertaken in accordance with the existing TOR for the BBCG Project	No change of condition wording required. The change application has responded to the existing TOR for the BBCG Project and included sufficient information about the proposed change and its effects on the project to allow the Coordinator-General to make an evaluation about the change. Due to the inclusion of Buffel Park, being freehold

Condition	Comments and suggested condition wording
	land, captured by the Belyando Planning Scheme, additional conditions will be required to condition the construction and Operations Villages as part of the change application. These conditions would be contained in Schedule 3A of the Coordinator-General's report.
Provision of construction camp accommodation	
(e) Provision of sufficient construction camp units at each stage of the CRM to accommodate the construction workforce at either Denham Village or at another location	No change of condition wording required. Notwithstanding the change application contemplates a Construction Village at Buffel Park, BMA want to retain flexibility for the location of a Construction Village, either at Denham Village or Buffel Park. The final location is dependent upon obtaining necessary development approvals from IRC Concurrence Agencies, and therefore the potential to accommodate CRM construction personnel at Buffel Village will be a function of approval timing. The distinction in these villages is that Denham Village would be temporary and Buffel Village permanent. It is submitted that the current condition provides this flexibility. The change application now identifies the alternate location for the Construction Village at Buffel Park. As the change report documents, the Construction Village requires 2000 rooms. Existing approvals under the *Environment Protection Act 1994* can be amended to increase the currently approved accommodation capacity for the Construction Village to 2000 at Denham Village. Additional conditions specific to the Buffel Village location will be required to condition the Construction Village as part of the change application. These conditions would be contained in Schedule 3A of the Coordinator-General's report.
Intersection of Denham Village access road and Moranbah Access Road	
(f) Design, construction, maintenance and timing requirements for intersection	No change of condition wording required if Denham Village is used as a Construction Village based on the Coordinator-General's Report issued on 9 August 2010.
Denham Village Fly Camp	
New Condition (g)	Insert the following new condition: *The proponent will negotiate with the Coordinator-General to set an appropriately worded condition that addresses the duration of the fly-camp.*
15. Traffic Management	
(a) Preparation of a Road Impact Assessment and road-use management plan (RMP)…	The proposed change application introduces Buffel Village at Buffel Park as an opportunity for accommodating both the construction and Operations Village. Buffel Park is freehold land, captured by the Belyando Planning Scheme. Accordingly TMR will be involved with the assessment of the change application. Given TMR would be a referral agency to the future

Condition	Comments and suggested condition wording
	SPA application, as Buffel Park is adjacent to a state controlled road (Peak Downs Highway), TMR would set conditions associated with the proposed Accommodation Villages. Accordingly such conditions would be included in the applicable Development Permits. The imposed condition only relates to Denham Village. Separate conditions in Schedule 3A to address non Denham Village traffic management requirements as access will be onto a state controlled road.
(b) Implementation of the RMP	Condition will require redrafting to limit this to Denham Village where applicable for Accommodation Villages.
(c) State-Controlled Road Infrastructure Agreement (Number 1) inclusions	No change of condition wording required as the trigger is linked to commencement of construction.
(d) State-controlled Road Infrastructure Agreement (Number 2) inclusions	No change of condition wording required as the trigger is linked to commencement of construction.
(e) State Infrastructure agreements mediation provisions	No change of condition wording required
(f) IRC Road Infrastructure Agreement inclusions	No change of condition wording required
(g) IRC infrastructure Agreement mediation provisions	No change of condition wording required
(h) Requirements prior to road construction	No change of condition wording required
(i) Requirements for implementation of TMP	No change of condition wording required
(j) Road permit requirements	No change of condition wording required
PART 3: OPERATION PHASE	
16. Air quality	
(a) Review and consultation requirements for Conditions B1-B11	No change of condition wording required
(b) Review of TOR requirements	No change of condition wording required
(c) Particulate emission requirements for review	No change of condition wording required
(d) Review submission requirements	No change of condition wording required
(e) Coordinator-General decision options	No change of condition wording required
(f) Further direction for Coordinator-General decision options	No change of condition wording required
17. Cumulative impacts study	
Cumulative impact study requirements	No change of condition wording required
18. Accommodation	
Worker accommodation	
(a) SIMP reporting requirements of accommodation arrangements for the CRM operational workforce	No change of condition wording required
(b) Maximum 70% FIFO, BIBO or DIDO operational workforce to be accommodated within operational Accommodation Village(s)	No change of condition wording required

Condition	Comments and suggested condition wording
(c) New dwellings within Isaac Region local government area to be provided for balance 30% operational workforce	No change of condition wording required.
(d) Ability to reduce new dwelling construction within Isaac Regional local government area.	No change of condition wording required
(e) Minimum 60% of operational workforce to be accommodated in villages	No change of condition wording required.
BBCG project housing impacts study	
(f) OESR to undertake BBCG Project Housing Impacts Study	No change of condition wording required
(g) TOR for BBCG Project Housing Impacts Study requirements	No change of condition wording required
(h) Timing of report to Coordinator-General	No change of condition wording required
(i) Coordinator-General assessment of BBCG Project Housing Impacts Study against TOR	No change of condition wording required
(j) Publication of Projects Housing Impacts Study	No change of condition wording required
BBCG Project Housing Impact Plan	
(k) Requirements for a BBCG Project Housing Impact Plan	No change of condition wording required
(l) TOR for BBCG Project Housing Impact Plan	No change of condition wording required
(m) Review of final draft BBCG Housing Impact Plan by Moranbah BCN	No change of condition wording required
(n) Timing of plan to Coordinator-General	No change of condition wording required
(o) Coordinator-General assessment of BBCG Housing Impact Plan	No change of condition wording required
(p) Commencement of operation of CRM subject to approval of BBCG Housing Impact Plan	No change of condition wording required
(q) Certain strategies recommended in BBCG Housing Impact Plan to be incorporated into SIMP	No change of condition wording required
(r) The Coordinator-General may specify implementation of the recommended management strategies contained in the final plan to cover any or all of the components of the BBCG project in: A – the imposed conditions of the EIS Assessment Report for the GRX component of the BBCG project; and/or B – any relevant change report for any component of the BBCG project prepared in accordance with Section 35I of the SDPWO Act.	The Buffel Park proposals deals only with the CRM Project. Consequently, a future Development Application would seek approval for a Construction Village of 2000 rooms and an Operations Village of 500 rooms. The broader solutions, along with an approach to providing the town based accommodation are to be addressed through the Moranbah BMA Community Network and the housing impact/provision strategies required under Imposed Condition 18. Imposed Condition 18 is not a condition precedent for this change request, as the numbers and housing strategies proffered through this change, as noted in the Coordinator General's Report, are consistent with the overall project scope contained in the EIS. As the changes are only to the number of workers and the location of the village(s), there is no requirement to address the broader aspects. These revised numbers and location will, however, affect the drafting of the Terms of Reference to the housing

Condition	Comments and suggested condition wording
	study.
	The final plan is linked to the operation of the CRM. This change request precedes both the granting of the EA and mine commencement.
PART 4: NEW CONDITIONS APPLICABLE TO THE DAUNIA MINE	
19. Construction workers living in Moranbah or Nebo	
Conditions (a) – (c)	No change of condition wording required

Attachment D Commentary on Jurisdictions of Conditions

Prepared by

RPS

Table: Commentary on Jurisdictions of Conditions

Schedule 2
No comment on the jurisdiction of conditions

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Attachment E Commentary on Stated Conditions

Prepared by

RPS

Table: Commentary on Stated Conditions

Schedule 3 Stated conditions for mine environmental authorities under the Environmental Protection Act 1994 (EP Act)
No comment on the stated conditions for the mine environmental authority

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Attachment F Commentary on Recommended Conditions

Prepared by

RPS

It is anticipated that a new Schedule 3A will be conditioned capturing the referrals to Isaac Regional Council and State Agencies.

Further it is anticipated that the Coordinator-General will work closely with Isaac Regional Council to obtain conditions during the Coordinator-General's evaluation period for the change request, with these conditions being contained within Schedule 3A. This approach has the opportunity to accelerate the SPA process.

Schedule 3A would contain recommended conditions from:

- DTMR – intersection requirements to state controlled road;
- DERM – clearing of native vegetation and ERA 63;
- Powerlink – development on land encumbered by an easement in favour of an electricity authority; and
- IRC – conditions of development for Construction Village and Operations Village.

Table: Commentary on Recommended Conditions

Schedule 3A – Recommended conditions for SPA Approvals
New conditions to be imposed for Buffel Village (proposed Schedule 3A) including but not limited to:
Concurrence Agencies DTMR – Intersection requirements DERM – Additional offset requirements for the clearing of native vegetation on freehold land DERM – ERA conditions for sewerage treatment plant
Assessment Manager IRC – Negotiation of appropriate Material Change of Use conditions

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Attachment G Commentary on Coordinator-General's Recommendations

Prepared by

RPS

Table: Commentary on Coordinator-General's Recommendations

Schedule 5 **Coordinator-General's other recommendations**	
1 – 8 & 10	No comment
9. I recommend that capacity planning for operational worker villages for the BBCG project allow for the periodic accommodation needs of visiting maintenance personnel (such as the large dragline overhaul crews) in addition to operational personnel	As part of the change application, periodic accommodation needs have been provided for in the design and scaling of the proposed Construction Village at Buffel Park.

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