
Appendix L

Social impact assessment

HVO Continuation Project

Amendment Report - Social Impact Assessment

Prepared for HV Operations Pty Ltd

August 2025

HVO Continuation Project

Amendment Report - Social Impact Assessment

HV Operations Pty Ltd

H190408 RP1

August 2025

Version	Date	Prepared by	Reviewed by	Comments
1	4 July 2025	Caroline Wilkins Brooke Theobald	Brett McLennan Samantha McCrea	Draft for review
2	1 August 2025	Caroline Wilkins Brooke Theobald	James Wearne	Final

Approved by



James Wearne
Senior Associate – Major Projects & Approvals
1 August 2025

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ABN: 28 141 736 558

Executive Summary

ES1 Introduction

EMM Consulting Pty Ltd (EMM) has prepared this Social Impact Assessment (SIA) Amendment for Hunter Valley (HV) Operations Pty Ltd. The SIA Amendment re-assesses impacts and benefits identified in the *Social Impact Assessment: HVO Continuation Project* (the Project) (EIS SIA) (EMM, 2022a) and first *HVO Continuation Project Amendment Report* (EMM, 2023a), to address changes as per the amended project description (the amended project).

ES2 Existing environment

The SIA study areas remain unchanged from the EIS SIA. The local study area includes the communities which directly surround HVO, being Jerrys Plains, Maison Dieu, Long Point and Camberwell, along with the two key nearby townships of Singleton and Muswellbrook. An updated social baseline study has been prepared to capture changes to existing social conditions since the EIS SIA was submitted.

There is potential for communities of the local study area to experience change related how direct social impacts associated with the amendment are experienced. Direct social impacts include residential amenity relating to generation of dust and continued exposure to dust and decreased air quality, noise and vibration, and traffic.

ES3 Approach

This study assesses potential social impacts and benefits generated by the amendment utilising the methodology outlined in SIA Guideline (DPE, 2023a). The methodology includes an updated social baseline study, review of engagement data from the EIS, SIA and first Amendment Report (and updated technical studies), and further engagement undertaken by the proponent to understand the effects of the amended project. Submissions and complaints data was also analysed.

Social impacts and benefits relevant to the amended project were identified through analysis of social impacts and benefits identified in the EIS SIA, the proposed changes to the nature of the amended project activities, baseline characteristics of potentially affected communities and feedback generated through engagement processes. The risk of identified impacts was re-assessed without mitigation using the risk framework provided in the SIA Guideline Technical Supplement (DPE, 2023b). Changes to mitigation measures were identified, where required, and impacts were re-assessed after applying mitigation measures. Assessment of cumulative impacts was also prepared.

ES4 Assessment of social impacts and benefits

No new impacts or benefits were identified as a result of the assessment. It was assessed that the amended project will not result in any change to the majority of the impacts and benefits assessed in the EIS SIA and the first amendment report and therefore do not require further investigation. Of the 17 impacts and 10 benefits identified in the EIS SIA, seven impacts and 10 benefits were assessed as not relevant to the scope and do not require further investigation (Table 4.2). There were 10 impacts identified for further investigation (Table 4.3). These impacts relate to amenity including traffic, generation of dust, noise and vibration, and visual landscape, impacts relating to community cohesion, housing and accommodation, and perceived water quality impacts.

Social impacts assessed for the amendment are summarised in Table ES1 below. Detailed assessment is provided in Section 7.

Table ES1 **Social impacts summary**

Impact category	EIS SIA		AMENDMENT
	Impact	Mitigated significance	Changes to impact and significance
Way of life	Impact of continued traffic congestion and road delays – construction	Medium	Low
	Impact of continued traffic congestion and road delays – operations	Low	No change
	Impacts due to continued generation of dust and diminished air quality	Medium	No change
Community	Impact on community cohesion due to divergent opinions on the Project	Medium	No change
Accessibility	Impact on an increased housing demand impacting rental affordability and availability	Medium	No change
Health and wellbeing	Impacts from noise and vibration	Medium	No change
	Impact of continued anxiety about potential effects on water quality	Medium	No change
	Impacts of continued exposure to dust and decreased air quality	Medium	No change
Surroundings	Impact on changes to visual amenity including lighting on nearby neighbours	Low	No change
Livelihood	Impact on perceived decreased water quality impacting agriculture-based livelihoods	Low	No change

ES4.1 Cumulative assessment

The assessment of the amended project has been conducted in an environment where substantial change has occurred since EIS submission. At least 15 non-resource projects are planned in the local and regional area, supporting the transition to renewable energy. A quantitative assessment of changes to construction and operation workforce was conducted including employment and population change while a qualitative assessment was conducted for competition for labour, housing and accommodation, traffic, social infrastructure and amenity. While the Amended Project's contribution to cumulative impacts as regards to construction workforce remains the same, there has been a substantial increase in construction workforces of planned non-resource projects since EIS submission.

TABLE OF CONTENTS

Executive Summary	ES.1
1 Introduction	1
1.1 Background	1
1.2 Amendment overview	4
1.3 The amended Project	4
1.4 Terminology	9
1.5 Assessment approach and requirements	10
1.6 Authorship and SIA declarations	11
2 Methodology	12
2.1 Introduction	12
2.2 Methodological phases	12
2.3 Research limitations	15
3 Project description	16
4 SIA context and scope	22
4.1 SIA study area	22
4.2 Scope of impacts and benefits affected by the proposed amendment	24
4.3 Policy and planning context	26
5 Social baseline	27
5.1 Population and geography	27
5.2 Educational attainment and qualifications	28
5.3 Labour market and income	29
5.4 Housing and short-term accommodation	33
5.5 Vulnerabilities and vulnerable groups	36
5.6 Social Infrastructure and services	40
5.7 Road infrastructure and transport	42
5.8 Community health and well-being	42
6 Community and stakeholder engagement	44
6.1 Community	44
6.2 Registered Aboriginal Parties	45
6.3 Government agencies	45
7 Assessment of social impacts and benefits	47
7.1 Assumptions	47

7.2	Assessment	47
8	Cumulative assessment	54
8.1	Cumulative projects	54
9	Conclusion	59
	References	60

Appendices

Appendix A	Curriculum vitae
Appendix B	Cumulative projects

Tables

Table ES1	Social impacts summary	2
Table 1.2	SEARs requirements relating to social impact assessment	10
Table 3.1	Amendment overview – HVO North	16
Table 3.2	Amendment overview – HVO South	19
Table 4.1	SIA study area	22
Table 4.2	Matters identified in the EIS SIA which require no further assessment	24
Table 4.4	Relevant studies and assessments	26
Table 5.1	Population trend by location and year	27
Table 5.2	Quarterly unemployment and labour force participation, September 2022-2024	30
Table 5.3	Percentage of registered businesses by industry and location, 2023	31
Table 5.4	Private rental property availability March 2025	33
Table 5.5	Core activity need for assistance, 2021	38
Table 5.6	Social infrastructure, services, and facilities in the local and regional area, 2021	40
Table 6.1	Summary of government agency engagement	45
Table 7.1	Predicted temporary population change associated with construction workforce sourced outside of a 1-hour commute	47
Table B.1	Concurrent resource sector (coal) projects	B.2
Table B.2	Concurrent non-resource sector projects	B.3

Figures

Figure 1.1	Regional locality	3
Figure 1.2	HVO Complex conceptual layout	8
Figure 2.1	Social impact significance matrix	15
Figure 4.1	SIA study area	23
Figure 8.1	Cumulative construction workforce demand	54
Figure 8.2	Cumulative operations demand	57

1 Introduction

EMM Consulting Pty Ltd (EMM) has prepared this Social Impact Assessment (SIA) Amendment for Hunter Valley (HV) Operations Pty Ltd. The SIA Amendment re-assesses impacts and benefits identified in the *Social Impact Assessment: HVO Continuation Project* (the Project) (EIS SIA) (EMM, 2022a) to address proposed changes to the Project (the amended Project) as summarised in Section 1.3.

This SIA Amendment will form part of an overarching Amendment Report (EMM, 2025) being prepared to evaluate the economic, environmental, and social impacts of the amended Project.

The context for this SIA Amendment is outlined below.

1.1 Background

Hunter Valley Operations (HVO) is a well-established multi-pit open cut coal mining complex, comprising two mine sites separated by the Hunter River, HVO North and HVO South. HVO is approximately 24 kilometres (km) north-west of Singleton in the Hunter Valley of New South Wales (NSW) (refer to Figure 1.1). While the two mine sites are approved under separate development consents issued under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act), they operate as one complex with fully integrated environmental management systems.

Operations first commenced at HVO over 75 years ago, in 1949. Since its inception HVO has been, and continues to be, an important contributor to the Hunter Valley and NSW economy, producing high quality thermal and semi-soft coking coal suitable for use in international and domestic markets.

HVO North operates under Development Consent DA 450-10-2003 issued by the then NSW Minister for Infrastructure and Planning in 2004, which allows extraction of up to 22 million tonnes per annum (Mtpa) of run of-mine (ROM) coal until 31 December 2026. HVO North comprises the approved mining areas of West Pit, Mitchell Pit, Carrington Pit and North Pit, as well as the Hunter Valley (HV) and Howick Coal Preparation Plants (CPP) and the Howick and HVO North mine infrastructure area (MIA). The Newdell Load Point (LP) and Hunter Valley (HVL) train loading facilities are also at HVO North.

HVO South operates under Project Approval (PA) 06_0261 issued by the then NSW Minister for Planning in 2009 and comprises the approved mining areas of Riverview Pit, Cheshunt Pit, Riverview Southeast Extension and South Lemington Pits 1 and 2, as well as the MIA, and the Lemington CPP (LCPP) and rail loop (approved but not constructed). PA 06_0261 allows extraction of up to 20 Mtpa of ROM coal until 24 March 2030.

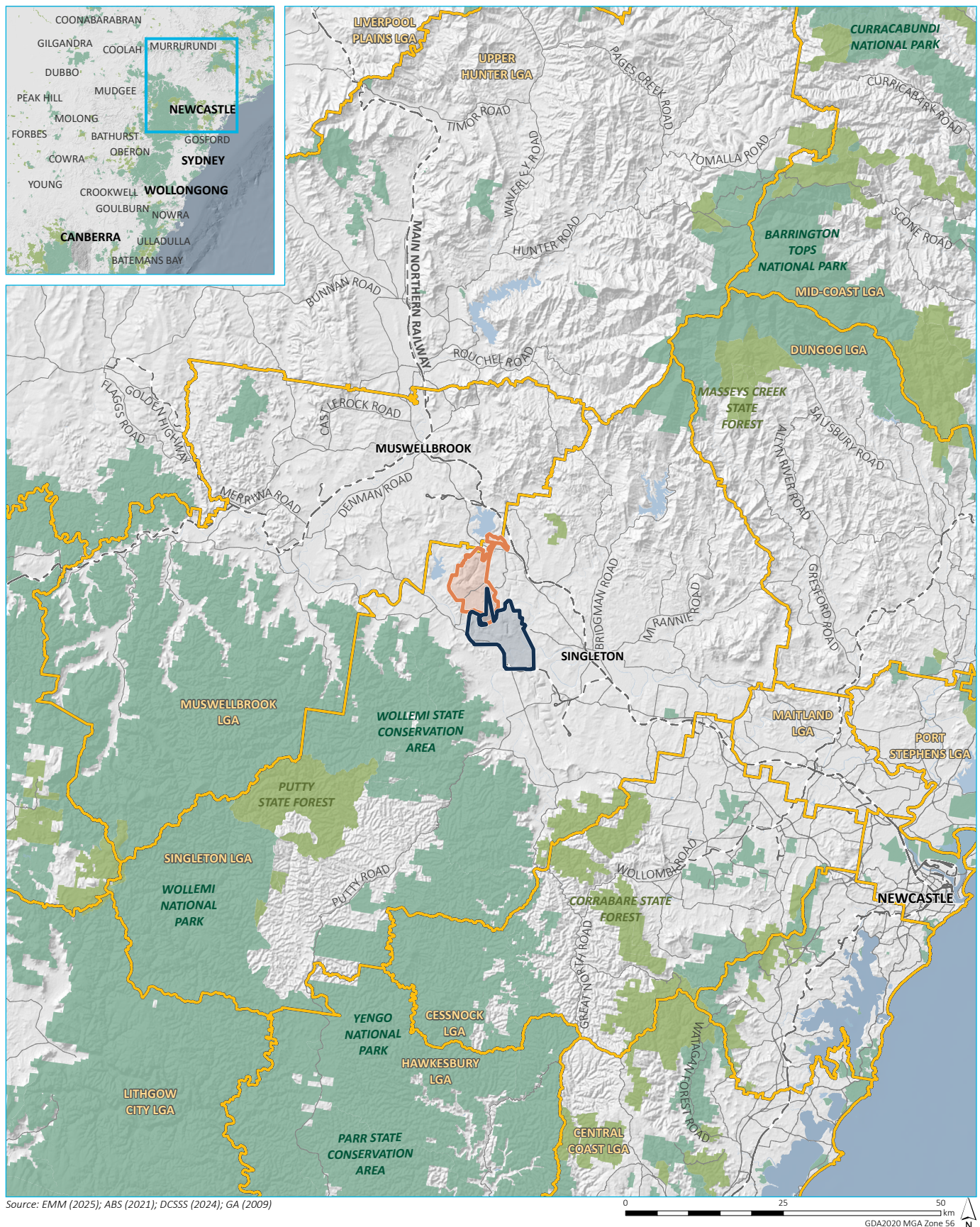
Significant coal resources remain across the HVO Complex beyond what is currently approved for extraction under the existing development consents. HVO is therefore seeking approval for the HVO Continuation Project (the Project) from the NSW Minister for Planning and Public Spaces, or delegate, under the provisions of Part 4 of EP&A Act. The Project broadly comprises the continuation of mining at HVO North and HVO South, beyond the current approved mining completion dates of 2026 and 2030 respectively. The Project will seek to maintain separate development consents for HVO North and South, as is currently the case.

The Project broadly comprises the continuation of mining at HVO North and HVO South, beyond the current approved mining completion dates of 2026 and 2030, to 2050 and 2045 respectively. Given that the two mine sites operate as one complex, one environmental impact statement (EIS, (EMM, 2022b)) was prepared to support the two State significant development (SSD) applications for the Project, being:

- SSD-11826681 – HVO North Open Cut Coal Continuation Project
- SSD-11826621 – HVO South Open Cut Coal Continuation Project.

The EIS was subsequently placed on public exhibition from Monday 30 January 2023 through to Monday 27 February 2023. During the public exhibition of the EIS, a total of 1,060 submissions were received by the NSW Department of Planning, Housing and Infrastructure (DPHI) from individuals, organisations, public authorities, councils, and government agencies for the two SSD applications. Most of the community submissions provided support to the Project.

To respond to matters raised in submissions on the Project during the public exhibition period, a Submissions Report (EMM, 2023b) was prepared, along with an Amendment Report (EMM, 2023a) outlining proposed amendments to the HVO North Project (the HVO North Amendment Report).



KEY

- Existing HVO North development consent boundary (DA 450-10-2003)
- Existing HVO South project approval boundary (PA 06_0261)

- Existing environment
- Rail line
- Major road
- Named watercourse
- Named waterbody
- NPWS reserve
- State forest
- Local government area

INSET KEY

- NPWS reserve
- State forest

Regional locality

HVO Continuation Project - Amendment
Social Impact Assessment
Figure 1.1

1.2 Amendment overview

During the subsequent assessment of the Project by the NSW Department of Planning, Housing and Infrastructure (DPHI), a number of requests for information (RFI) were issued to HVO, who provided responses as required. In response to an RFI received 5 July 2024, HVO completed a detailed review of the Project and is subsequently seeking to amend the SSD applications in the following ways:

- Reduce the project mine plan to avoid coal extraction within gas Domain 1 at HVO North and reduce the total ROM coal to be extracted by the Project by approximately 220 Mt.
- Maintain the current approved maximum annual ROM coal production from HVO North of 22 Mtpa but reduce the proposed maximum annual production limit at HVO South from 18 Mtpa to 13 Mtpa.
- Reduce the maximum annual production for the HVO Complex to 26 Mtpa from the approved maximum production of 42 Mtpa.
- Reduce the proposed life of mining operations at HVO North by five years, from the end of 2050 to the end of 2045.
- Reduce the proposed life of mining operations at HVO South by three years from the end of 2045 to the end of 2042.
- Expansion of the HVO North ROM coal stockpile to improve product coal management.
- Remove approval for the construction and operation of the Lemington Coal Preparation Plant (LCPP) and associated rail facilities, which is currently approved, but not constructed, under the HVO South Project Approval.
- Temporary transport of product coal by truck from the Howick Coal Preparation Plant (CPP) to the Liddell stockpile for transport to market via the Liddell coal handling and train loading facilities during upgrades of the Newdell Load Point (LP).
- Establishment of a levee (Mitchell East Levee) to provide flood protection for the final void in Mitchell Pit.
- Minor alterations to disturbance boundaries to accommodate construction activities such as Lemington Road and electricity transmission lines.

1.3 The amended Project

As noted in Section 3, the Project broadly comprises the continuation of mining at HVO North and HVO South, beyond the current approved mining completion dates of 2026 and 2030 respectively. The key components of the amended Project are illustrated on Figure 1.2 and summarised in the sections below.

1.3.1 HVO North

The key Project elements at HVO North for which approval is sought include those activities required to carry out open cut coal mining and processing and include:

- changes to the HVO North development consent boundary as illustrated Figure 1.2
- continuation of mining operations at HVO North from 1 January 2027 until 31 December 2045
- production of up to 22 Mtpa with no separation of extraction limits between West Pit and Carrington Pit.

- infrastructure upgrades, as listed below:
 - realignment of Lemington Road and construction of a new bridge over the Hunter River
 - relocation of the HVO North site access road off the existing Lemington Road
 - increase in the capacity of Parnells Dam from approximately 1 gigalitre (GL) to approximately 4 GL
 - realignment of transmission and telecommunication lines that are currently within the proposed mining area
 - upgrades to the HVO North Mine Infrastructure Area (MIA)
 - expansion of the HVO North ROM coal stockpile to improve coal management
 - maintenance and ancillary activities as required to facilitate operations, including the replacement of plant and equipment where required
 - Construction of access roads to facilitate service provider access
 - use of demountable/temporary buildings and other ancillary temporary facilities to enable construction activities and mining operations as required
 - access road establishment to an existing mine-owned property east of realigned Lemington Road
- receipt of ROM coal from HVO South via internal haul roads for processing at all CPP facilities approved for HVO North.
- Transport product coal by truck or overland conveyor from all CPPs to loading points (HVLP and Newdell LP)
- management of tailings in accordance with a Tailings Management Strategy
- upgrade of product coal infrastructure as follows:
 - establishment of a new Newdell product stockpile and upgrade of the existing Newdell train loading facility or an extension of the product coal stockpile footprint at the HVLP to increase the total stockpile capacity of the load point
 - construction of a haul road to enable ROM coal to be transported to the neighbouring Ravensworth Operations ROM pad via haul truck for processing, from where product coal is then transferred to the Ravensworth Coal Terminal for transport to market
 - ability to temporarily transport product coal by truck from the Howick CPP to the Liddell stockpile for transport to market via the Liddell coal handling and train loading facilities during upgrades of the Newdell Load Point (LP).
- implementation of a revised water management system including construction of levees, clean water diversions and the Carrington West Wing low permeability barrier wall
- establishment of a new levee (Mitchell East Levee) near CM-CD1 to provide flood protection for the final void in Mitchell Pit

- continued employment of up to 1,500 full time equivalents (FTE) across the HVO complex.

Other than as modified above, all activities that are currently approved under the existing HVO North development consent are intended to continue. Key aspects and outcomes of the approved development at HVO North (under DA 450-10-2003 as modified) that will remain the same under the Project include the following:

- the maximum allowable annual ROM coal extraction and processing rate of 22 Mtpa
- receipt of ROM coal from HVO South via internal haul road for processing at all CPP facilities approved for HVO North
- approved heights of overburden emplacement areas
- continued avoidance of the Aboriginal heritage site known as CM-CD1
- operating hours, annual workforce numbers and associated operational traffic generation.

1.3.2 HVO South

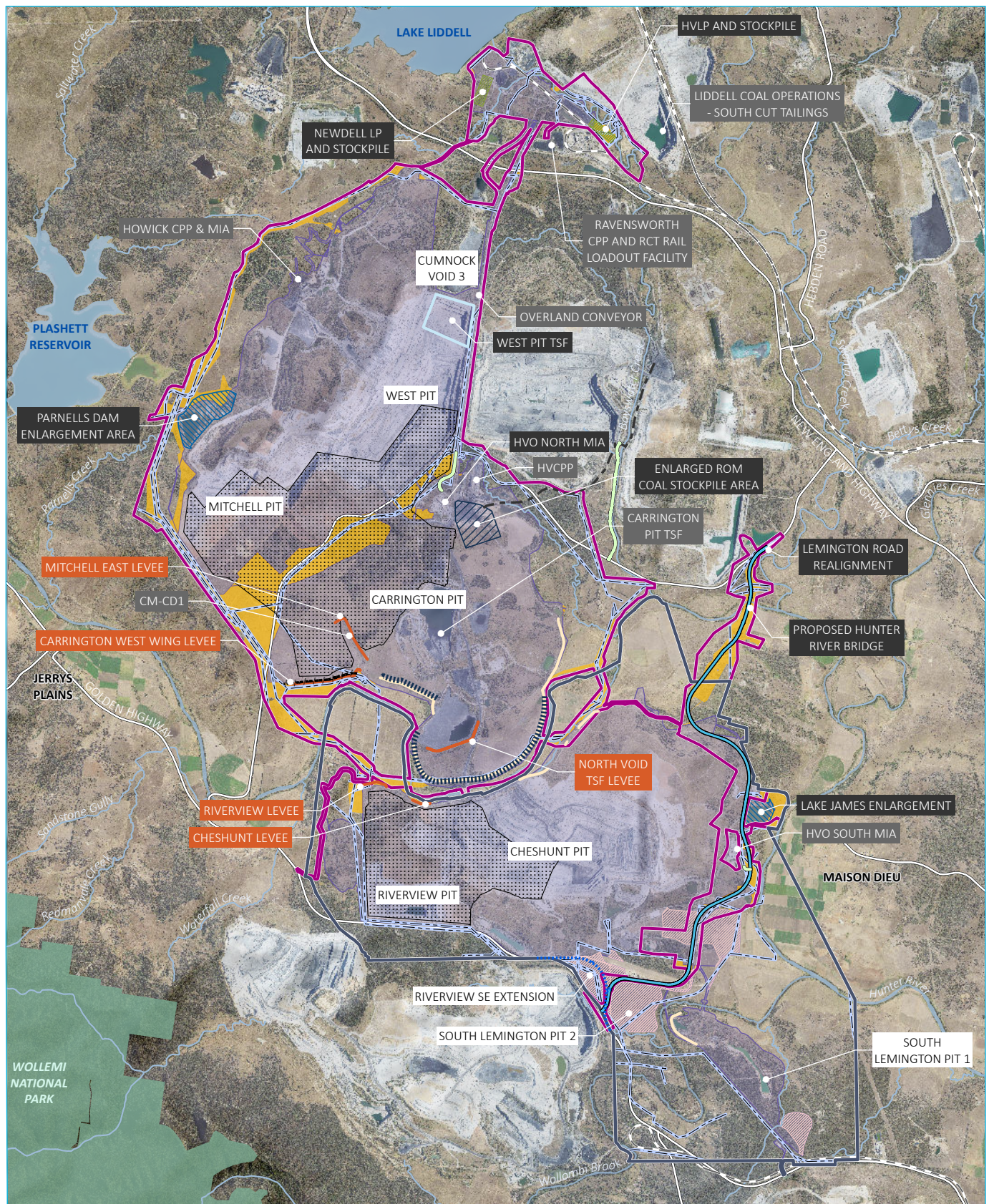
The key Project elements at HVO South for which approval is sought include those activities required to carry out open cut coal mining and processing and include:

- changes to the HVO South development consent boundary
- continuation of mining operations at HVO South from 2030 until 31 December 2042
- a reduction in the approved maximum extraction rate from 20 Mtpa to 13 Mtpa
- removal of coal extraction from the mine plan for the Riverview South East Extension (RSEE), and South Lemington Pit 1 and 2 (SLP 1 and 2)
- infrastructure upgrades including:
 - relocation of some 11 kV and 66 kV Ausgrid transmission lines
 - realignment of internal transmission lines to support mining activities
 - HVO South access road relocation to join the realigned Lemington Road
 - access roads to facilitate service provider access
 - use of demountable/temporary buildings and other ancillary temporary facilities including laydown areas to enable construction activities and mining operations as required
 - removal of the approval for the construction and operation of the Lemington Coal Processing Plant (LCPP) and rail facilities
 - removal of the construction and operation of the approved conveyor from HVO South to the HVCPP at HVO North (the conveyor has not been constructed).
- continuation of integrated water management with HVO North and water transfers with other mining operations (where permitted under the development consents that apply to those other mining operations).

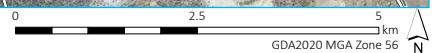
- construction of the Cheshunt and Riverview flood protection levees
- enlargement of Lake James from approximately 0.7 GL to 1.9 GL
- amendments to final landform.

Other than as modified above, all activities that are currently approved under the existing HVO South development consent are intended to continue. Key aspects of the currently approved development at HVO South (under Project Approval (PA) 06_0261as modified) that will remain the same for the Project include:

- no change to the receipt of HVO South coal at all HVO North CPPs via internal haul road for processing
- no change to operating hours
- no change in annual workforce numbers or associated operational traffic generation
- no increase to approved heights of overburden emplacement areas.



Source: EMM (2025); Glencore (2025); DCSSS (2024); GA (2009)



KEY

- Amended proposed HVO North development consent boundary
- Proposed HVO South development consent boundary
- Existing and approved disturbance area
- Additional disturbance area
- Previous approved area not retained
- Existing low permeability barrier wall
- Existing levee
- Proposed HVO continuation project element
- Approved barrier wall (not yet constructed)
- Alternative Golden Highway alignment

- Lemington Road realignment
- Levee
- Mine access road
- Proposed haul route to Ravensworth Operations
- Transmission line
- Dam enlargement
- Mining area
- Product stockpile
- ROM coal stockpile area
- West Pit TSF

- Existing environment
- Rail line
- Major road
- Named watercourse
- Named waterbody
- NPWS reserve
- Label format
- Existing item
- Levee
- Project related item

HVO Complex conceptual layout

HVO Continuation Project - Amendment
Social Impact Assessment
Figure 1.2

1.4 Terminology

Table 1.1 details the key terms used throughout this SIA Amendment to describe existing operations and the Project.

Table 1.1 **Project terminology**

Term	Definition
HVO Complex	Comprises both HVO North and HVO South operations.
HVO North Project	Comprises the HVO North Project only as described in Appendix B of the Amendment Report (EMM 2025).
HVO South Project	Comprises the HVO South Project only as described in Appendix B of the Amendment Report (EMM 2025).
The Project	The Project as originally described in the EIS (EMM 2022b).
The amended Project	The Project, as amended in the HVO North Amendment Report (EMM 2023a) the Amendment Report (EMM 2025), and as described in Appendix B of the Amendment Report (EMM 2025b).
Project area	The area that is the subject of the two development applications, i.e. the proposed development consent boundary for HVO North and the proposed development consent boundary for HVO South.
Approved mining area	The areas within the existing and approved disturbance area that have been previously assessed and approved under the EP&A Act for mining operations.
Additional disturbance area	The areas that will be disturbed by the Project that are outside of the existing and approved disturbance area for the HVO Complex and other neighbouring mines (Ravensworth Operations, United Wambo and Liddell Coal Operations (LCO)).
Previously approved areas not retained	Areas that are disturbed and/or approved to be disturbed under the current development consents that apply to the HVO Complex, that will no longer be disturbed by the Project, such as the LCPP, the Riverview Southeast Extension and South Lemington Pit 2 mining areas, and the approved temporary crossing across the Hunter River between HVO North and South.
Project disturbance area	This area is a combination of the existing and approved disturbance area, and the additional disturbance area associated with the Project, minus the areas not being retained by the Project. If the Project is approved, this will become the 'approved disturbance area' under the new SSD development consents.
Transmission line corridors	Two categories of transmission line corridors have been defined for the purpose of quantifying the extent of disturbance for the Project: • realigned transmission lines (i.e. new transmission line easements) – the extent of disturbance will be limited to transmission line pole pads and an access road for maintenance along the alignment, as well as vegetation management to maintain safe transmission line clearance • existing transmission line easements to be decommissioned – disturbance will be confined to existing access tracks, existing easements and cleared areas required for removal of poles and associated infrastructure.

Term	Definition
Realigned Lemington Road corridor	The corridor extends from the existing Comleroi Road intersection with the Golden Highway at the southern end of the new alignment, along the Comleroi Road alignment around the south-eastern side of HVO South and then extends in a northerly direction to join the existing Lemington Road approximately 2.3 km south of the existing New England Highway/Lemington Road intersection. The proposed realigned corridor forms part of the HVO North SSD application.

1.5 Assessment approach and requirements

This SIA completed for the amended Project assesses social impacts and benefits as well as proposed management measures in accordance with the Secretary's Environmental Assessment Requirements (SEARs), as well as relevant government assessment requirements, guidelines, and policies, including:

- the *Social Impact Assessment Guideline for State Significant Projects* (SIA Guideline 2023) (DPE, 2023a).
- the *Technical Supplement: Social Impact Assessment Guideline for State significant Projects* (SIA Technical Supplement 2023) (DPE, 2023b).
- the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPE, 2022a).
- the *State significant development guideline* – preparing an amendment report (DPE, 2022b).

There are no SEARs attached to the amended Project, however, the SEARs for the EIS have been considered. Table 1.2 outlines what is required to be addressed in the EIS. The SEARs for HVO North and HVO South, and where they are addressed in this assessment, are provided in Table 1.2.

Table 1.2 SEARs requirements relating to social impact assessment

Reference	Requirements	Section addressed
Social – including a Social Impact Assessment, that:		
1	• Including a detailed assessment of the potential social impacts of the development that builds on the findings of the Social Impact Assessment Scoping Report in accordance with the <i>Social impact assessment guideline for State significant mining, petroleum production and extractive industry development 2017</i>.	Section 4 Section 5 Section 6
2	– How the development might affect people's way of life.	Section 6.3
3	– Community	Section 6.4
4	– Access to and use of infrastructure, services and facilities	Section 6.5
5	– Culture	Section 6.6
6	– Health and wellbeing	Section 6.7
7	– Surroundings	Section 6.8
8	– Personal and property rights	Section 6.10
9	– Decision-making systems	Section 6
10	– Fears and aspirations:	Section 6

Reference	Requirements	Section addressed
Social – including a Social Impact Assessment, that:		
11	▪ The principles in Section 1.3 of the Guideline; and	Section 1.3
12	▪ The review questions in Appendix A of the Guideline.	

1.6 Authorship and SIA declarations

This report has been prepared by a suitably qualified and experience lead author, Caroline Wilkins, consistent with SIA Guideline 2023 requirements, and reviewed and approved by a suitably qualified and experienced social practitioner, Samantha McCrea. All contributors hold appropriate qualifications and have the relevant experience to carry out the SIA for this project.

1.6.1 SIA declarations

The authors declare that this SIA report:

- was completed in November 2022
- was updated in July 2025
- has been prepared in accordance with the EIS process under the EP&A Act and its Regulation
- has been prepared in accordance with the SIA Guideline 2023
- contains all reasonably available project information relevant to the SIA
- as far as EMM is aware, contains information that is neither false nor misleading.

Assumptions and limitations of this report are outlined in Section 2.3.

2 Methodology

2.1 Introduction

This section presents the methodology which guided completion of the SIA for the amended Project. The methodology was tailored to update the EIS SIA (EMM, 2022a) to consider the changes arising from the amendments in accordance with the SIA Guideline 2023 (DPE, 2023a).

2.2 Methodological phases

The phases of the SIA methodology are described below.

2.2.1 Phase 1

i EIS

An initial undertaking was the review of the EIS SIA (EMM, 2022a), Submissions Report (EMM, 2023b) and HVO North Amendment Report (EMM, 2023a). The review of these documents considered:

- potentially affected stakeholders and the feedback generated through engagement processes
- the SIA study area identified negative and positive social impacts of the project
- the level of assessment required to address potential social impacts associated with the amendment.

While this amendment is addressed in terms of its potential combined effects on the community when considered alongside the Project, the above considerations provide an understanding of the cumulative context, social locality and existing concerns and opportunities.

2.2.2 Phase 2

i Stage 1 – Updated social baseline study

Since the preparation of the social baseline study for the EIS SIA (EMM, 2022a) was completed, the third release of the 2021 Census was issued. Given the time between the EIS SIA and this amendment and building upon the understanding of the existing social environment attained in the EIS SIA, an update to the social baseline study was completed.

Key sources of information included socio-economic data from the second and third release of the 2021 ABS Census, data from state government agencies, and local government; published literature and social research; government policies and plans; and documents relating to similar projects. Data not relevant to assessing the amendment has been replaced with references to the EIS SIA.

The social baseline study provides a socio-economic profile and analysis of demographic data, social infrastructure and capacity and housing and accommodation indicators within the SIA study area. The social baseline defines characteristics of the existing social environment against which potential social impacts are identified and assessed. The updated social baseline study is presented in Chapter 5.

ii Stage 2 – Engagement informing the SIA Amendment

A key source of information drawn upon was feedback generated through engagement with potentially affected stakeholders and communities through the EIS, SIA and HVO North Amendment Report. While additional independent engagement has been avoided to reduce engagement fatigue, the proponent has undertaken further engagement to understand the effects of the amended Project. The specific activities and outcomes of the community engagement are presented in Section 6.

Data from EIS submissions phase and complaints during ongoing operations were also identified as a key source of engagement data.

Information obtained through project engagement has been used to:

- validate baseline data and assumptions
- identify/test impacts that may be experienced by nearby neighbours and the broader community
- confirm identified impacts and determine potential management strategies
- provide stakeholders an opportunity to express any concerns.

iii Stage 3 – Data analysis and review

Qualitative and quantitative data collected during project engagement was analysed to identify changes to community values, strengths and vulnerabilities. Data analysis provided a basis to identify and develop social impact themes and confirm potential social impacts.

iv Stage 4 – Social impact identification

Social impacts and benefits relevant to the amendment were identified by suitably qualified social scientists (see Appendix A) through analysis of the nature of project activities, baseline characteristics of potentially affected communities and feedback generated through engagement processes.

The SIA Guideline 2023 (DPE, 2023a) notes that social impacts may be tangible and intangible or may manifest as rational or justified fears or aspirations. As such, valid social impacts are both perceived and actual. Social impacts may be experienced differently by individuals within a community or by different communities and at different times/stages of the Project.

Identification and assessment of impacts was undertaken with consideration of the impact categories outlined in the SIA Guideline 2023, (DPE, 2023a) which refers to potential changes to people's:

- **way of life:** how people live, work, play and interact
- **community:** its composition, cohesion, character, how it operates and sense of place
- **accessibility:** how infrastructure provided by public, private or not for profit organisations, including services and facilities is accessed and used
- **culture:** shared beliefs, customs, values and stories, and connection to Country, land, places, waterways and buildings, both Aboriginal and non-Aboriginal
- **health and wellbeing:** physical and mental health
- **surroundings:** access to and use of ecosystem, public safety and security, access to and use of natural and built environment, aesthetic value and/or amenity

- **livelihoods:** how people sustain themselves through employment or business, their capacity to do so and whether disadvantage is experienced, and
- **decision-making systems:** extent community can have a say in decisions that affect their lives, access to complaint, remedy, and grievance mechanisms.

Identification of the amended Project's potential social impacts and benefits was completed through several complementary approaches, helping to triangulate the findings and confirm accuracy. These approaches included consideration of:

- environmental impacts – review of similar projects in the area, as well as available academic and grey literature to identify potential impacts
- local plans and policies – findings from the review aided to contextualise and understand the local priorities as well as to identify local values
- the existing social environment – demographic and social analysis in the form of an updated social baseline study
- feedback generated through stakeholder engagement including findings from SIA engagement along with ongoing broader engagement on the Project, the first Amendment Report, submissions and complaints
- findings from other technical disciplines that contributed to the Amendment Report (EMM, 2025) were reviewed and potential social impacts defined. These included:
 - air quality
 - noise and vibration
 - water
 - traffic and transport

landscape and visual impact assessment

- consideration of cumulative impacts – review of documentation from other existing projects in the study area.

A full description of each social impact is provided in Section 7 of this report.

v Stage 5 – Social risk and assessment

This stage involved the systematic identification and assessment of each social impact to predict the nature and scale of impacts associated with construction and operation of the amendment. The adopted risk-based approach re-assesses the consequence and likelihood of potential positive and negative social impacts with and without mitigation. The social risk assessment matrix, including the assessment framework, is provided in the SIA Guideline Technical Supplement (DPE, 2023b) and presented in Figure 2.1.

		Magnitude level				
		1	2	3	4	5
Likelihood level		Minimal	Minor	Moderate	Major	Transformational
A	Almost certain	Low	Medium	High	Very High	Very High
B	Likely	Low	Medium	High	High	Very High
C	Possible	Low	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Very unlikely	Low	Low	Low	Medium	Medium

Source: SIA Guideline Technical Supplement, Social impact significance matrix

Figure 2.1 Social impact significance matrix

vi Stage 6 – Social impact mitigation and management

The mitigation and management framework considers all potential social impacts and benefits to allow for the identification of:

- required impact mitigation measures
- enhancement measures to maximise potential benefits
- partnership opportunities to manage broader cumulative effects.

Findings from Stages 1–5 were used to distil and analyse recommendations for the SIA Amendment. This stage involved a multidisciplinary approach led by EMM’s social scientists supported by environmental advisers.

vii Stage 7 – SIA reporting

Development of this SIA Amendment technical report and internal peer review were conducted by EMM’s social scientists and environmental scientists.

2.3 Research limitations

This SIA Amendment has been based on the best available information relevant to the amendment.

The SIA Amendment relies on several assumptions, including that the project construction workforce is not expected to change as a result of the amendment. Other assumptions and limitations of the research include:

- A key source of data describing social conditions is the ABS Census of Population and Housing, the latest of which was in 2021. There may have been changes to social characteristics since this census event. A consideration is that the 2021 Census occurred during the height of COVID epidemic restrictions which may have impacted upon socio-economic trends and characteristics as recorded.
- Social infrastructure reviewed in the social baseline predominantly considers government-provided facilities or services. In some instances, it is possible that local communities access services through private providers for which data is not available.

3 Project description

Table 3.1 provides a summary of the current approved and proposed amendments for HVO North.

Table 3.1 Amendment overview – HVO North

Aspect	Current approved	Previously proposed / original Project (EIS and HVO North Amendment Report)	Proposed amended Project (HVO North)
Project area	Development consent boundary as shown in Figure 1.1.	Increase in the development consent boundary to accommodate an extension to the approved mining area, as well as the areas covered by proposed infrastructure to support the Project (including the Lemington Road and transmission and telecommunication line realignments).	Proposed minor increase in the development consent boundary to accommodate additional disturbance areas associated with the construction of transmission lines across the Project area and to provide flexibility with the location of transmission lines associated with the EnergyCo Hunter Transmission Project.
Mining method	- Open cut mining operation, primarily using truck and shovel. The use of a dragline is also approved. - Blasting – 7.00 am to 6.00 pm Monday to Saturday inclusive (except public holidays) up to a maximum of three blasts per day and 12 blasts per week.	No change.	No change.
Mining area	- Coal extraction to the base of the Barrett seam in West Pit and Mitchell Pit. - Coal extraction to the base of Bayswater seam in the Carrington area.	- Extension of open cut mining from the approved West Pit and Mitchell Pit areas, through Lemington Road into the Carrington Pit area. - Mining to the base of the Barrett seam in the Carrington Pit area. - A reduction in the proposed mining area within the Carrington West Wing area, compared to the approved mining area.	- Mining area as proposed in Figure 1.2. - Removal of coal extraction in gas Domain 1 for HVO North. - Coal extraction to the base of the Barrett seam in West, Mitchell and Carrington Pit areas. - Coal extraction to the base of the Bayswater seam in the Carrington West Wing area. - A reduction in the proposed mining area within the Carrington West Wing area, compared to the approved mining area (consistent with the original project).
Disturbance area	- Existing and approved disturbance area of approximately 4,965 hectares (ha). - Avoidance of heritage site CM-CD1. Mining operations and associated activities are not permitted within 20 metres (m) of CM-CD1.	- An assessed additional disturbance area of approximately 926 ha to that currently approved. - Relinquishment of approximately 6.7 ha of currently approved disturbance area. - Avoidance of CM-CD1 will be maintained.	- Minor additional disturbance areas associated with the construction of transmission lines. - A total additional disturbance area of approximately 903 ha to that currently approved as illustrated on Figure 1.2. - Relinquishment of approximately 6.7 ha of currently approved disturbance area. - Avoidance of CM-CD1 will be maintained.
Total resource recovery	Approval to extract up to 498 Mt of ROM coal.	Extraction of approximately an additional 400 Mt of ROM coal over that currently approved for extraction.	Extraction of approximately 307 Mt of additional ROM coal to that currently approved for extraction over the life of the Project comprising approximately 200 Mt in areas beyond those currently approved for extraction.
Annual production	- Up to 22 Mtpa of ROM coal, comprising: 12 Mtpa from West Pit 10 Mtpa from Carrington Pit.	- No change to total annual ROM extraction rate (up to 22 Mtpa). - Removal of the currently approved separation of extraction limits between West Pit and Carrington Pit.	- No change to total annual ROM extraction rate (up to 22 Mtpa) - Removal of the currently approved separation of extraction limits between West Pit and Carrington Pit. - Propose a HVO Complex limit of 26 Mtpa ROM coal whilst maintaining limits of: - up to 22 Mtpa from HVO North - up to 13 Mtpa from HVO South.
Mine Life	Mining operations approved unto 31 December 2026.	Mining operations at HVO North up to 31 December 2050.	Reduction in the proposed life of mining operations compared to the original Project. Proposed end date of mining reduced from 31 December 2050 to 31 December 2045.

Aspect	Current approved	Previously proposed / original Project (EIS and HVO North Amendment Report)	Proposed amended Project (HVO North)
General infrastructure	• HV MIA and Howick MIA. • Maintenance and ancillary infrastructure required to facilitate operations.	• Realignment of a section of Lemington Road from Comleroi Road in the south to the existing Lemington Road in the north, joining the existing road alignment approximately 2.3 km south of the existing New England Highway/Lemington Road intersection. • HVO North access road to be realigned from the existing Lemington Road. • Closure of a small section of Liddell Station Road to accommodate the HVLP product stockpile extension (if constructed), which is not currently accessible to the public. • Realignment of sections of Ausgrid’s transmission lines, and AGL transmission lines. • Realignment of internal transmission lines to support mining activities. • Realignment of Telstra telecommunication lines. • HVO North MIA upgrade. • Maintenance and ancillary activities as required to facilitate operations, including the replacement of plant and equipment where required. • Access roads to facilitate service provider access. • Use of demountable/temporary buildings and other ancillary temporary facilities to enable construction activities and mining operations as required. • Access road establishment to an existing mine-owned property east of realigned Lemington Road. • Maintenance and ancillary infrastructure required to support construction activities and mining operations within the Project disturbance area, including communication towers, installation and maintenance of water supply works and works on waterfront land, construction and use of buildings for construction or mining operations, installation of environmental monitoring equipment including piezometers, and explosives storage and transport.	• As proposed for the original Project with an expansion of the HVO North ROM coal stockpile.
Beneficiation	• ROM coal may be transported via internal haul roads to either HVCPP or Howick CPP for processing. • HVCPP is approved to process up to 20 Mtpa ROM coal (not receiving more than 16 Mtpa ROM from HVO South). • Howick CPP is approved to wash up to 6 Mtpa ROM coal. • Both HV and Howick CPP can use flotation to process ROM coal.	• Use of temporary coal stockpiles assembled in new mining areas, within the Project disturbance area prior to processing or transport. • Receipt of ROM coal from HVO South via internal haul roads for processing at all CPP facilities approved for HVO North. • Construction of a haul road to enable ROM coal to be transported to the neighbouring Ravensworth Operations ROM pad via haul truck until the end of Ravensworth Operations approved mine life.	• As proposed – no change from the original Project.
Management of mining waste – overburden emplacement	• Ability to dispose of overburden within all pits and out-of-pit emplacement areas across HVO. • Maximum overburden emplacement area height of approximately 240 m to Australian Height Datum (AHD).	• No change. Overburden will continue to be emplaced across HVO within the Project disturbance area. However, the sequence of overburden emplacement has been revised to reflect the extended mine life and additional mining areas (i.e. between Mitchell/West Pit and the Carrington area).	• As proposed; however, the sequence of overburden emplacement has been revised reflecting the variances in the amended schedule.
Management of mining waste – coarse reject	• Ability to emplace coarse rejects within overburden emplacement areas across HVO.	• No change.	• No change.
Management of mining waste – tailings	• Emplacement of tailings within approved tailings storage facilities (TSFs) at HVO and Ravensworth Operations, including Carrington Pit TSF at HVO North, and the Cumnock Void 3 TSF at Ravensworth Operations. • Intermittent deposition of tailings occurs in Dam 6W TSF, Bobs Dump TSF and Central TSF as part of ongoing management towards decommissioning. • Capping and rehabilitation of TSFs following completion of emplacement activities.	• Additional tailings pipelines and pumps. • Removal, relocation and/or reprocessing of tailings from historic TSFs as required, including the Carrington TSF. • Emplacement of tailings within the northern extent of West Pit. • Emplacement of tailings at approved tailings facilities at LCO. • Over the life of HVO, the tailings and reject management strategy will continue to be refined to meet operational needs. This may also include trial or testing facilities in the Project approved disturbance area to inform the strategy.	• As proposed except for the removal, relocation and/or reprocessing of tailings from Carrington TSF is no longer required.

Aspect	Current approved	Previously proposed / original Project (EIS and HVO North Amendment Report)	Proposed amended Project (HVO North)
Product transport	- Transport of product coal from HVCPP by overland conveyor and or truck to HVLP or Newdell LP. - Transport of product coal from Howick CPP by overland conveyor to power stations or by truck to HVLP or Newdell LP. - Intermittent haulage of coal between HVCPP, HVLP, Newdell LP and Ravensworth Coal Terminal (RCT). - In the event of an emergency or issue with coal conveyance infrastructure, coal can be transported via truck between noted CPPs, LPs and the RCT.	- Upgrade of product coal infrastructure as follows: - New Newdell product stockpile and upgrade of the existing Newdell train loading facility. These works will include an upgrade of the existing stockpile plus new train loading bin, conveyors and support infrastructure such as access roads, power and communication services; or an extension of the product coal stockpile footprint at the HVLP to increase the total stockpile capacity of the load point. The extension will require the relocation of Ausgrid transmission lines and communication infrastructure in this area and the closure of a portion of Liddell Station Road. - The construction of a haul road to enable ROM coal to be transported to the neighbouring Ravensworth Operations ROM pad via haul truck for processing, from where product coal is then transferred to RCT for transport to market.	As proposed in original Project with the inclusion of the ability to temporarily transport product coal by truck from the Howick CPP to the Liddell stockpile for transport to market via the Liddell coal handling and train loading facilities during upgrades of the Newdell LP.
Water management	- Integrated water management with HVO South. - Water supply works including pumps, bores, diversions and dams. - Water discharges in accordance with Hunter River Salinity Trading Scheme (HRSTS). - Transfer of water between HVO South, LCO and Ravensworth Operations. - Existing and approved flood protection levees, including the Alluvial Lands, Carrington, Carrington West Wing and North Pit levees. - Construction of groundwater low permeability barrier walls (LPBW) as follows: - LPBW across the eastern arm of the Hunter River paleochannel within 2 years of mining in the Carrington Pit Southern Extension (<i>constructed</i>). - Carrington West Wing LPBW prior to undertaking mining within 100 m of the western arm of the Hunter River paleochannel, with an applicable permeability of 1 x 10⁻⁸ m/s (<i>not yet constructed</i>). - Diversion of the Unnamed Tributary to the west of Carrington West Wing.	- Continuation of the ability to transfer water to and from other mining operations where permitted. - Improved flood protection levee for North Pit (up to 1,000 year Annual Exceedance Probability (AEP). - Improved flood protection for Carrington West Wing levee (up to 1,000 year AEP). - Additional mine/dirty water containment dams as required, as mining progresses. - Clean water diversion as required, as mining progresses, including an extension of the Mitchell clean water diversion. - Parnells Dam enlargement from approximately 1 gigalitre (GL) to approximately 4 GL, new spillway, and refurbishment of existing HRSTS discharge facility (no change to environment protection licence (EPL)/HRSTS approval). - Construction of the Carrington West Wing LPBW prior to mining within 100 m of the remnant connected western arm of the paleochannel, as per the existing development consent requirement.	- As proposed, with the additional establishment of the Mitchell East levee to provide flood protection for the final void in Mitchell Pit. - Water management system revised from that proposed in the original Project and revised conceptual final landform.
Rehabilitation	- Progressive rehabilitation, with the establishment of a mixture of pasture and native habitat areas. - Removal of levees and reinstatement of the Unnamed Tributary in the Carrington West Wing area to its original position.	- Progressive rehabilitation, with the post mining land use to comprise a mixture of grazing and native habitat areas. - The Alluvial Lands flood levee will be left in place in the final landform. - The Carrington and North Void TSF levees will be incorporated into the rehabilitated overburden dump/tailings capping, respectively, and so will not be retained as levees. The Carrington West Wing levee will be partially removed and incorporated into the final landform.	- As proposed in the original Project with revised final land use domains - Removal of Carrington West Wing levee and incorporation of Mitchell East levee into final landform.
Final void	- Approved final void in Carrington Pit (evaporative sink). - Approved final void in West Pit. - Approved final void in Mitchell Pit. - Carrington West Wing void to be backfilled and returned to pasture.	One final void at HVO North within the Carrington area, representing a reduction in the number of voids that will remain post mining compared to existing approved operations (i.e. from three to one).	- Two final voids being: - one final void associated with the Mitchell Pit - final void in Carrington Pit (evaporative sink) as currently approved.
Operational workforce	Approximately 1,500 full-time equivalent (FTE) workers (HVO Complex).	No change.	No change.

Aspect	Current approved	Previously proposed / original Project (EIS and HVO North Amendment Report)	Proposed amended Project (HVO North)
Construction workforce	N/A	- Construction activities associated with: - Lemington Road realignment and associated works - transmission line and telecommunications decommissioning and realignment - upgrades to MIAs and relevant access roads - construction of the coal haulage route to Ravensworth Operations - upgrade of the existing Newdell LP train loading facility and construction of a new product coal stockpile or extension of the HVLP product stockpile - Parnells Dam capacity increase, and other water management system works such as levee construction - clean water diversion drains. - Approximately 600 temporary construction workers over an approximate five-year period. - Construction activities will generally be undertaken within standard construction hours (Monday to Friday 7.00 am to 6.00 pm, Saturday 8.00 am to 1.00 pm, and no work on Sundays or public holidays). However, some out of hours work may be required from time to time.	As proposed in the original Project – no change.
Hours of operation	Continuous operations, 24 hours per day, seven days per week.	No change.	No change.

Table 3.2 provides a summary of the current approved and proposed amendments for HVO South.

Table 3.2 Amendment overview – HVO South

Aspect	Current approved	Previously proposed / original Project (EIS)	Proposed amended Project (HVO South)
Project area	Project approval boundary as shown in Figure 1.1.	Changes to the development consent boundary primarily on the northern side of the Hunter River to reflect removal of the approval to construct a conveyor from HVO South to the HVCPP. Other small changes are proposed to the consent boundary, primarily to align with cadastral boundaries inclusive of neighbouring Mount Thorley Warkworth (MTW) offset areas.	As proposed in original Project – no change.
Mining method	- Open cut mining operation, primarily using truck and shovel. - Highwall mining, including auger mining and dragline, is also approved. - Blasting – 7.00 am to 6.00 pm Monday to Saturday inclusive (except public holidays) to a maximum of three blasts per day and 15 blasts per week.	No change.	- No change.
Mining area	- Extraction to base of the Bayswater Seam in Riverview and Cheshunt Pits. - Extraction to the base of the Bowfield Seam in South Lemington Pit 1. - Extraction to base of Vaux Seam in South Lemington Pit 2. - Extraction to base of Vaux Seam in Riverview South East Extension area.	- Continuation of coal extraction to base of the Bayswater Seam in Riverview and Cheshunt Pits. - Coal extraction in South Lemington Pit 1, South Lemington Pit 2 and the Riverview South East Extension area no longer proposed.	Revised mining area as illustrated in Figure 1.2.
Disturbance area	Existing and approved disturbance of approximately 3,242 ha.	- Additional disturbance area of approximately 54.9 ha. - Relinquishment of approximately 173 ha of currently approved disturbance area.	- A total reduction in the current approved disturbance area by approximately 267 ha, comprising: - Relinquishment of 173 ha as per the original project - Removal of the disturbance area associated with the construction of the LCPP and associated rail facilities, resulting in a further 94 ha reduction in the current approved disturbance area, as compared to the original Project. - A total additional disturbance area of approximately 47 ha to that currently approved as illustrated on Figure 1.2 (reduced from the 54.9 ha proposed in the original Project).
Total resource recovery	16 Mtpa ROM coal approved in 2008 for 20 years – total of 320 Mt.	Approximately 210 Mt ROM coal over the Project life.	Extraction of approximately 122 Mt of ROM coal, from areas currently approved for extraction, over the Project life.

Aspect	Current approved	Previously proposed / original Project (EIS)	Proposed amended Project (HVO South)
Annual production	Up to 20 Mtpa.	Reduction in the annual ROM coal extraction rate from 20 Mtpa to 18 Mtpa.	- Further reduction in the annual ROM coal extraction rate from up to 18 Mtpa, as proposed in the original Project, to 13 Mtpa. - Propose a HVO Complex limit of 26 Mtpa ROM whilst maintaining limits of: - up to 22 Mtpa from HVO North - up to 13 Mtpa from HVO South.
Mine Life	Mining operations approved until 24 March 2030.	Mining operations at HVO South up to 31 December 2045.	Reduction in the proposed life of mining operations from 31 December 2045, as proposed in the original Project, to 31 December 2042.
General infrastructure	- HVO South MIA. - Construction and use of the LCPP (up to 16 Mtpa). - Maintenance and ancillary infrastructure required to facilitate operations. - Wollombi Brook bridge and low level crossing. - Operation of an Ammonium Nitrate Emulsion Plant (ANEP).	- As approved with: - relocation of some 11 kilovolt (kV) and 66 kV Ausgrid transmission lines - realignment of internal transmission lines to support mining activities - HVO South access road relocation to join the realigned Lemington Road - access roads to facilitate service provider access - use of demountable/temporary buildings and other ancillary temporary facilities including laydown areas to enable construction activities and mining operations as required.	As proposed in the original Project, except that construction of the LCPP and associated rail facilities is no longer proposed.
Beneficiation	- Construction and use of the LCPP (up to 16 Mtpa). - ROM/product coal may be transported from all HVO South pits via internal haul road to all CPPs within HVO (HVCPP, Howick CPP, Newdell CPP and LCPP) for processing (up to 20 Mtpa). - ROM coal from HVO South can also be transported via overland conveyor to HVCPP.	- No transport of ROM coal from HVO South via overland conveyor to HVCPP (i.e. approval for this conveyor will not be retained). - Ongoing use of temporary coal stockpiles assembled within the Project disturbance footprint prior to processing or transport. - No change to processing limits.	As proposed in the original Project, except that construction of the LCPP and associated rail facilities is no longer proposed.
Management of mining waste – overburden emplacement	- Ability to dispose of overburden within all pits and out-of-pit emplacement areas across HVO. - Maximum overburden emplacement area height of approximately 240 m AHD.	No change.	No change.
Management of mining waste – coarse reject	Ability to emplace coarse rejects within overburden emplacement areas across HVO.	No change.	No change.
Management of mining waste – tailings	Integrated tailings management with HVO North with emplacement of tailings within approved TSFs at HVO.	- As approved - LCPP tailings management will be integrated with HVO North when the LCPP is constructed. - Removal, relocation and/or reprocessing of tailings from historic TSFs as required.	As proposed in the original Project except that construction of the LCPP is no longer proposed and no tailings management from the LCPP will be required.
Product transport	- Transport product coal by truck or overland conveyor from all CPPs to all loading points (HVL P, Newdell LP and Lemington LP and adjacent to the short rail loop south of South Lemington Pit 1). - Transfer of product coal to Wambo rail spur via either a rail spur and loop, overland conveyor, trucks or any combination. - Construction of a coal loader and new rail loop adjacent to the LCPP. The loop and associated rail line would connect to the Wambo rail spur. - Construction of a conveyor that would be utilised to transport coal via a new loop as described above. The conveyor would be constructed adjacent to the existing haul road described above.	Only the construction of the long rail loop and coal loader adjacent to the LCPP to be retained as an option for LCPP.	- Construction of the LCPP and associated rail facilities no longer proposed. - Transport product coal by truck or overland conveyor from all CPPs to loading points (HVL P, Newdell LP and Liddell LP).
Rehabilitation	Progressive rehabilitation, with the establishment of a mixture of pasture and native habitat areas.	Progressive rehabilitation, with the post mining land use to comprise a mixture of grazing and native habitat areas.	As proposed in the original Project with revised final land use domains.
Final void	- One final void in Riverview Pit. - South Lemington Pit 1 void, South Lemington Pit 2 void and the Ravensworth South East Extension to be filled in and rehabilitated.	- One void to remain in Riverview Pit. - South Lemington Pit 1 void and neighbouring strip 1 and strip 2 borrow pit to be filled with overburden material sourced from adjacent out of pit dump.	As proposed – no change from original Project.

Aspect	Current approved	Previously proposed / original Project (EIS)	Proposed amended Project (HVO South)
Water management	• Water supply works including pumps and bores. • Integrated water management with HVO North. • Water discharges in accordance with HRSTS. • Transfer of water between HVO North, MTW and Wambo. • Existing and approved flood protection levees. • Construct additional bores (and associated infrastructure) at three transfer sites and adjacent to the existing LUG Bore to facilitate transfer of water into the former Lemington Underground Mine void and/or extraction of water from the void.	• Continuation of integrated water management with HVO North and water transfers with other mining operations (where permitted under the development consents that apply to those other mining operations). • Construction of Cheshunt and Riverview flood protection levees. • Lake James enlargement (from approximately 0.7 GL to 2.0 GL).	• As proposed in the original Project.
Operational workforce	• Approximately 1,500 FTE workers (HVO Complex).	• No change.	• No change.
Construction workforce	• N/A	• Construction activities associated with Lake James enlargement, and other water management system works such as levee construction • Approximately 600 temporary construction workers over an approximate five-year period. • Construction activities will generally be undertaken within standard construction hours (Monday to Friday 7.00 am to 6.00 pm, Saturday 8.00 am to 1.00 pm, and no work on Sundays or public holidays). However, some out of hours work may be required from time to time. • Construction workforce of around 600 required for the construction of the LCPP and rail loop (to be constructed around Year 13 to Year 15 of the Project should future operational requirements and/or market conditions deem it necessary).	• Construction of the LCPP and associated rail facilities is no longer proposed, and therefore no construction workforce required for that activity.
Hours of operation	• Continuous operations, 24 hours per day, seven days per week.	• No change.	• No change.

4 SIA context and scope

As outlined in the SIA Guideline, scoping is the first phase of SIA and involves gaining an appreciation of the social context and the nature of the project in order to complete initial identification of potential impacts and benefits to be taken forward for further assessment.

This section outlines the SIA study areas, provides a summary of key features of the area within which the project operates, the policy and planning context and the outcomes of the review of the EIS SIA to determine which impacts and benefits need to be re-assessed due to project amendments.

4.1 SIA study area

The SIA study area (referred to as ‘social locality’ in the SIA Guideline) is defined with reference to stakeholders who could potentially be directly or indirectly affected by the Project. This includes landholders, nearby neighbours, community members, businesses, service providers and indigenous groups who may have an interest in the Project or could be directly or indirectly impacted.

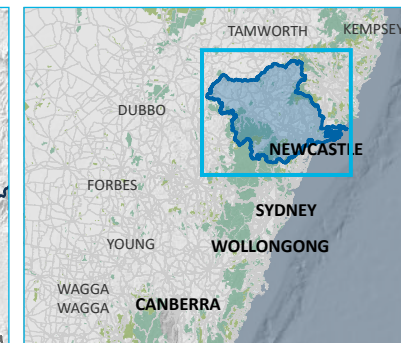
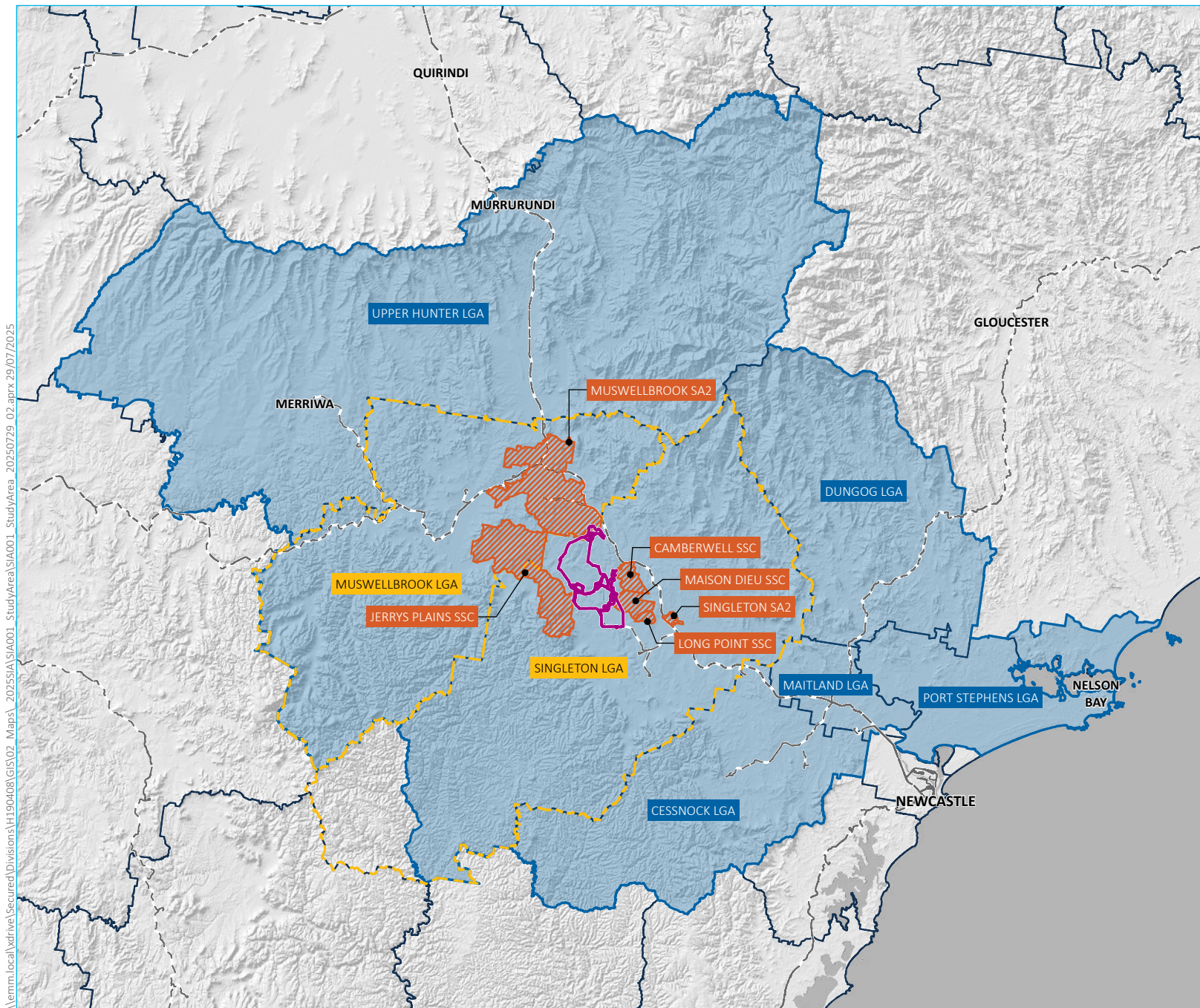
For the 2021 ABS Census, SAL classifications replaced the SSC classification however they remain consistent. This report refers to SALs when discussing the 2021 ABS Census data and, where relevant, refers to SSCs when citing ABS Census data from previous years

The SIA study area remains unchanged from the EIS SIA.

Table 4.1 SIA study area

Study Area	Geographic area	ABS data category	Referred to in report as:
Local area	Jerrys Plains	SAL 12030	Local area
	Maison Dieu	SAL 12457	
	Camberwell	SAL 10761	
	Long Point	SAL 12391	
	Singleton – township	SA2 106011112	
	Muswellbrook - township	SA2 106041126	
Regional area	Singleton	LGA 17000	Regional area
	Muswellbrook	LGA 15650	
Area of reference	Hunter Valley region	Hunter Valley excluding Newcastle SA4 106	Area of reference
	Newcastle	SED 10058	
State of New South Wales	New South Wales	New South Wales State and Territory (STE)	NSW

Figure 4.1 displays the SIA study area and the Amended Project.



KEY

- Project area
- Local area
- Regional area
- Area of reference
- LGA boundary
- Existing environment
- Rail line

INSET KEY

- Major road
- NPWS reserve
- State forest

SIA study area

HVO Continuation Project - Amendment
Social Impact Assessment
Figure 4.1



Source: EMM (2025); ABS (2021); DCSSS (2024); GA (2009)



4.2 Scope of impacts and benefits affected by the proposed amendment

The impacts and benefits identified in the EIS SIA and the first Amendment Report were reviewed against the proposed amendment. The amendment will not result in any change to the majority of the impacts and benefits assessed in the EIS SIA and therefore do not require further investigation as outlined in Table 4.2.

Table 4.2 Matters identified in the EIS SIA which require no further assessment

Impact	Reason no further assessment is required
Impact on sense of community due to population change	Adequately addressed in the EIS SIA. The amendment does not propose to change the size of the construction or operation workforce or the assumptions underpinning workforce arrangements.
Impact on the increased demand for local and regional social infrastructure and services	The amendment does not propose to change the size of the construction or operation workforce or the assumptions underpinning workforce arrangements including how the workforce access social infrastructure and services.
Impact related to perceived effect on property values	The amendment proposes a total net reduction in the current approved disturbance area of 9.25 ha, partially offset by increased disturbance from transmission lines. The overall change is assessed as being not significant. The change is not expected to impact on surrounding property values.
Impact on the ability of Aboriginal people to maintain connection to country and waterways	The amendment does not propose changes to the management of Aboriginal cultural heritage sites and places including access arrangements for Aboriginal people.
Impacts of disturbance to cultural artefacts or sites	The proposed amendments to the Project would result in limited change to potential disturbance of cultural artefacts or sites previously outlined in the Aboriginal Cultural Heritage Assessment (ACHA) provided as part of the HVO North Amendment Report (EMM, 2023a).
Impact of perceived safety due to realignment of Lemington road	The amendment does not propose to change the realignment of Lemington Road. It is assessed that perceived road safety relating to this element will not change.
Impacts on land management and pest control	The amendment is not proposing to change land management and pest control.
Benefits	
Benefit of rehabilitation, future land use and ongoing land management	The amendment is not proposing to change the benefit relating to rehabilitation, future land use and ongoing land management.
Benefit of the realigned Lemington Road and new bridge over the Hunter River	The amendment is not proposing to change the Lemington Road upgrade or new bridge over the Hunter River.
Benefit of the Project contributing to ongoing stability of the local population	The proposed change to mine life (5-year and 3-year reduction for HVO North and HVO South respectively) is not expected to change the benefit relating to ongoing stability of the local population.
Benefit of continued royalty payments to the NSW state government	The proposed change to mine life (5-year and 3-year reduction for HVO North and HVO South respectively) is not expected to change the benefit relating to continued royalty payments to the NSW state government.
Benefit related to community grants and sponsorship	The proposed change to mine life (5-year and 3-year reduction for HVO North and HVO South respectively) is not expected to change the benefit relating to community grants and sponsorship.
Benefit from the ongoing support of empowerment programs for local Aboriginal groups	The proposed change to mine life (5-year and 3-year reduction for HVO North and HVO South respectively) is not expected to change the benefit relating to empowerment programs for local Aboriginal groups.
Benefit of the continued opportunities for local employment and training opportunities – construction and operation	The proposed change to mine life (5-year and 3-year reduction for HVO North and HVO South respectively) is not expected to change the benefit relating to local employment and training opportunities.

Impact	Reason no further assessment is required
Benefit related to employment and training pathways for Aboriginal and Torres Strait Islander people	The proposed change to mine life (5-year and 3-year reduction for HVO North and HVO South respectively) is not expected to change the benefit relating to employment and training pathways for Aboriginal and Torres Strait Islander people.
Benefit of the continuation of procurement opportunities for local businesses – construction and operation	The proposed change to mine life (5-year and 3-year reduction for HVO North and HVO South respectively) is not expected to change the benefit relating to procurement opportunities for local businesses.
Benefit of allowing more time for transition planning	The proposed change to mine life (5-year and 3-year reduction for HVO North and HVO South respectively) is not expected to change the benefit relating to allowing more time for transition planning.

The identified impacts in the EIS SIA requiring further assessment as a result of the amendment are outlined in Table 4.3.

Table 4.3 Matters identified in the EIS SIA which require further assessment

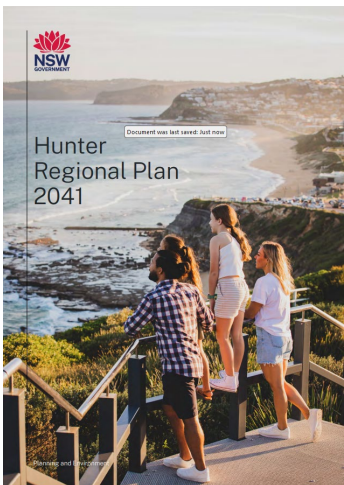
Impact	Reason further assessment is required	Response
Impacts of continued traffic congestion and road delays (construction)	The amendment has potential to change impacts relating to traffic congestion and road delays.	Section 7 – Way of life
Impacts of continued traffic congestion and road delays (operation)	The amendment has potential to change impacts relating to traffic congestion and road delays.	Section 7 – Way of life
Impacts due to continued generation of dust and diminished air quality	The amendment has potential to change impacts relating to continued generation of dust due to the reduced period of operation and reduced quantities of material moved. Submissions and complaints received since the EIS was submitted evidence some community concern related to amenity impacts relating to diminished air quality.	Section 7 – Way of life
Impact on community cohesion due to divergent opinions on the Project	Engagement undertaken since EIS submission has potential to change impacts relating to community cohesion.	Section 7 - Community
Impact on an increased housing demand impacting rental affordability and availability	While the amendment is not proposed to change the size of the construction workforce, additional clarity is provided with development of an updated social baseline study. Also addressed in cumulative assessment.	Section 7 - Accessibility Section 8
Impacts from noise and vibration	Submissions and complaints received since EIS submission noted community concerns relating to noise and vibration impacts. Minor changes to mine plans have potential to change impacts from noise and vibration.	Section 7 – Health and wellbeing
Impact of continued anxiety about potential effects on water quality	Submissions received since EIS submission noted concerns relating to impacts on drinking water quality from dust entering water tanks or in ground water sources. The amendment has potential to change the impact of continued anxiety about potential water quality effects.	Section 7– Health and wellbeing
Impacts of continued exposure to dust and decreased air quality	The amendment has potential to change community health impacts related to decreased air quality due to the reduced period of operation and reduced quantities of material moved.	Section 7– Health and wellbeing

Impact	Reason further assessment is required	Response
Impact on changes to visual amenity including lighting on nearby neighbours	Changes to mine plans, including changes to pit progression, fleet composition and project duration have potential to alter visual amenity.	Section 7 - Surroundings
Impact on perceived decreased water quality impacting agriculture-based livelihoods	Minor changes to mine plans, including changes to pit progression, fleet composition and project duration have potential to alter impacts on water quality impacting agriculture-based businesses.	Section 7 - Livelihood

4.3 Policy and planning context

This section draws upon studies relevant to the amendment. Relevant studies released since completion of the EIS SIA are summarised in Table 4.4.

Table 4.4 Relevant studies and assessments

Name	Description and relevance to the project
<i>Hunter Regional Plan 2041</i> (DPE, 2022c) 	The <i>Hunter Regional Plan 2041</i> (DPE, 2022c) (HRP 2041) is a 20-year land use plan prepared under the EP&A Act, and applies to the local government areas (LGAs) of Cessnock, Dungog, Lake Macquarie, Maitland, Mid Coast, Muswellbrook, Newcastle, Port Stephens, Singleton and Upper Hunter. It sets the strategic land use framework for continued economic growth and diversification of the region. The HRP 2041 notes that mining, energy and industrial sectors all make the Hunter an economic powerhouse and will remain important contributors to the regional economy into the future. It also recognises that as the world transitions to other forms of energy, the NSW Government will work to support coal-dependent communities to diversify for the future with good employment opportunities. The HRP 2041 contains nine objectives for the Hunter. The first objective of diversifying the Hunter's mining, energy and industrial capacity relates closely to the Project, and notes that opportunities for the future alternate use of mine land and associated infrastructure such as power transmission lines, rail lines and water storages will play a key role in the transition of the local economy as existing mines cease operations.
Singleton Local Environmental Plan 2013 (Singleton LEP)	The Singleton LEP aims to make local environmental planning provisions for land in Singleton in accordance with the relevant standard environmental planning instrument under section 3.20 of the Act. The Project involves the continuation of an existing mine in an area that is an established coal mining and power generation precinct, providing employment and other socio-economic contributions to the local and regional community. The strategic planning framework for the area is well established, and mining projects are permissible with development consent on the land within the site. The additional area proposed by the amended Project area is zoned RU1 Primary Production in the Singleton LEP, consistent with the majority of the Project area. Development for the purpose of open cut mining is permissible with development consent within this land use zone.

5 Social baseline

This section provides a summary of the existing social conditions (as of May 2025) in the social locality of the Project with reference to specific and relevant social indicators that align to the following key themes:

- population and demography
- educational attainment and qualifications
- labour market and income
- housing and short-term accommodation
- vulnerabilities and vulnerable groups
- social infrastructure and services
- road infrastructure and transport
- community health and wellbeing.

The social baseline provides an understanding of pre-existing social conditions and identifies vulnerable groups. Data relating to housing and accommodation and local workforce skill and capacity also informs workforce and accommodation recommendations, to maximise benefits to the local community.

Unless otherwise stated, the data included in this social baseline is derived from the 2021 Census of Population and Housing (ABS, 2021a) (ABS, 2021b) (ABS, 2021c).

5.1 Population and geography

The local area has a total population of 30,078 people. Most of these people reside in the townships of Singleton and Muswellbrook, which have respective populations of 17,018 people and 12,272 people. A smaller proportion of the local area population reside in Jerrys Plains (447), Maison Dieu (175), Camberwell (102) and Long Point (64).

Between 2016 and 2021 the local area experienced a population growth of 4.4%, with the highest growth recorded in Jerrys Plains (106.5%) and Camberwell (22.9%). Maison Dieu was the only suburb in the local area to experience a population decrease (-3.3%). Growth rates have increased substantially from the previous 2016 Census, which recorded an overall population decline from 2011 in the local area of -0.4%. In the five years to 2016, the local areas of Camberwell and Jerrys Plains experienced significant population decline. Despite growth rates increasing, the population of these localities have not returned to 2011 numbers.

The regional area has a total population of 40,934, with 24,577 residing in the Singleton LGA and 16,357 residing in the Muswellbrook LGA. Population trend data in the regional area shows a 1.7% increase in population between 2016 and 2021 which is a lower growth rate compared to the area of reference (i.e. the Hunter Valley and Newcastle) (10.9%) and NSW (7.9%).

Table 5.1 Population trend by location and year

Location	2011	2016	2021	Total % change 2011–2016	Total % change 2016–2021
Jerrys Plains SAL	688	385	447	-44.0%	16.1%
Maison Dieu SAL	162	181	175	11.7%	-3.3%

Location	2011	2016	2021	Total % change 2011–2016	Total % change 2016–2021
Camberwell SAL	181	83	102	-54.1%	22.9%
Long Point SAL	–	31	64	–	106.5%
Singleton SA2	16,136	16,089	17,018	-0.3%	5.8%
Muswellbrook SA2	11,791	12,075	12,272	2.4%	1.6%
Local area	28,958	28,844	30,078	-0.4%	4.3%
Singleton LGA	22,694	22,987	24,577	1.3%	6.9%
Muswellbrook LGA	15,791	16,086	16,357	1.9%	1.7%
Regional area	38,485	39,073	40,934	1.5%	4.8%
Area of reference	311,166	335,081	371,616	7.1%	10.9%
NSW	7,218,550	7,732,850	8,072,163	6.6%	7.9%

Source: ABS 2021, Census of Population and Housing: General Community Profiles

Projected population data is published by DPHI and is only available at the LGA and SA2 level (DPHI, 2024). They suggest that the population of the regional area is estimated to increase by 4,823 people from 41,194 in 2021 to 46,017 in 2041, representing an increase of 11.7% and an average annual increase of 0.6%.

Within the regional area, population projections for the LGAs indicate that the:

- population of the Singleton LGA is estimated to increase by 3,596 people from 24,725 in 2021 to 28,321 in 2041, representing a total increase of 14.5% and an average annual increase of 0.7% and
- population of the Muswellbrook LGA is estimated to increase by 1,227 people from 16,469 in 2021 to 17,696 in 2041, representing a total increase of 7.5% and an average annual increase of 0.4%.

Projected annual average population growth rates in the LGAs of Singleton and Muswellbrook are well below the projected annual average population growth rate for NSW (1.1%).

In the local area, 44.8% of the population are persons aged 25–64 years, meaning adults make up the highest proportion of the population. These trends are generally comparable to age demographics across the regional area, area of reference and NSW. Age demographic trends are also reflected in the median ages across the local area and regional area: 34 years in Jerrys Plains and Long Point, 35 years in Maison Dieu, 38 years in Camberwell, 35 years in Muswellbrook, and 34 in Singleton. In the regional area, the Singleton and Muswellbrook LGAs share a median age of 37. Across the area of reference, the median age is 39.

5.2 Educational attainment and qualifications

Educational attainment (i.e. the highest level of schooling completed) in the local area, regional area and the area of reference is at a lower level than compared to NSW. In the local area, 39.8% of people completed their schooling in Year 12 and 36.2% completed schooling in Year 10. The proportion of Year 12 completion is similar across the regional area (39.5%); however, lower than the area of reference (47.5%) and NSW (63.3%). The local area's proportion of people completing their schooling in Year 10 is comparable across the regional area (37.4%) and area of reference (32.5%) however significantly higher than NSW (21.2%). In general, people who have completed Year 12 are more likely to continue with further education or training and have a more successful transition into the workforce (AIHW, 2023).

Non-school qualifications in the local area, regional area and area of reference are lower than NSW for all types of qualifications, except diplomas and certificates. Certificates comprise the largest proportion of non-school qualifications in the SIA study area, with 52.7% holding certificates in the local area, 52.1% in the regional area, and 43.3% in the area of reference. These rates are markedly higher than NSW where 28.3% of people hold certificate qualifications. This reflects a combination of factors including limited access to further education institutions and the dominant regional employment sectors (i.e. agriculture, mining and health care and social assistance) which in turn inform the dominant occupation types (i.e. technicians and trades workers and machinery operators and drivers). These occupations typically do not require tertiary level education. Bachelor's degrees are less common in the SIA study area, with 13.2% of people being qualified at this level in the local area, 13.4% in the regional area and 19.8% in the area of reference. This is lower compared to rates of people attaining bachelor's degrees across NSW which stands at 28.8%.

5.3 Labour market and income

5.3.1 Labour force

In 2021 the estimated labour force in the local area was 14,739 people. This equates to 72.5% of the estimated regional labour force which has an approximate total of 20,325. Majority of workers in the local area reside in Singleton and Muswellbrook, which have respective labour forces of 8,699 and 5,638. Across the local area, labour force participation rates range from 41.2%–73.8%, with Camberwell demonstrating the lowest and Jerry's Plains demonstrating the highest.

5.3.2 Unemployment

Overall, the aggregate unemployment rate for the local area was 4.9% in 2021 however, there is variance across the different suburbs. Muswellbrook and Camberwell had unemployment rates of 6.0% and 11.4% respectively, which are higher than the unemployment rate of NSW (4.9%). However, in Jerrys Plains the unemployment rate was 3.6%, 3.4% in Maison Dieu, 0.0% in Long Point and 4.2% in Singleton which are all lower compared to NSW.

In the regional area, Muswellbrook LGA (5.1%) had a higher unemployment rate than NSW. In contrast the Singleton LGA (3.7%) had an unemployment rate lower than NSW.

In 2021, the local area had a youth unemployment rate¹ of 8.9% which was only slightly lower than the regional area (8.6%), and slightly higher in the area of reference (9.3%) and NSW (9.8%). In the local area, Muswellbrook demonstrated a rate of 10.6% of youth unemployment which is considerably higher than Singleton, which had a youth unemployment rate of 8.3%, and the rest of the local area suburbs which had no youth unemployment.

Labour force participation grew in 2023 in the regional area, before becoming stagnant throughout 2024. Unemployment has continued to rise in the Muswellbrook LGA, with a high of 6.7% September 2024. Contrary to this, the unemployment rate in Singleton LGA lowered to 2.2% in March 2024 before rising to 2.9% in September 2024. The lower unemployment rate in Singleton LGA indicates a constrained workforce.

Since the 2021 Census, unemployment has continued to rise in Muswellbrook LGA, whilst falling in Singleton LGA. This trend has been consistent with labour force rose between 2021 and 2023, before beginning to decline in the regional area in 2024. Although having a higher overall number of labour force patriation, Singleton LGA has experience more rapid decline, with a decline of 214 between September 2023 to September 2024.

Indigenous unemployment was also higher in the local area and Muswellbrook LGA. The proportion of Indigenous unemployment in the study area was higher than overall unemployment.

¹ The youth unemployment rate is a measure of the number of unemployed youth (persons aged 15 to 24) expressed as a proportion of the youth labour force (the total number of employed and unemployed youth).

Table 5.2 **Quarterly unemployment and labour force participation, September 2022-2024**

Area	Sep-22	Dec-22	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24	Jun-24	Sep-24
Unemployment rate (%)									
Singleton LGA	2.8%	2.6%	3.0%	2.7%	2.5%	2.4%	2.2%	2.6%	2.9%
Muswellbrook LGA	5.3%	4.8%	5.3%	4.8%	4.6%	4.9%	5.0%	6.2%	6.7%
Labour force participation (number)									
Singleton LGA	12,747	13,081	13,501	13,877	14,109	14,165	14,146	14,025	13,895
Muswellbrook LGA	7,791	7,989	8,242	8,476	8,632	8,678	8,681	8,619	8,540

Source: Small area labour markets, Jobs and Skills Australia (2024)

5.3.3 Industry of employment

The latest published local data from 2021 states the mining industry had the largest employment share in the local area (22.2%), followed by healthcare and social assistance (9.3%), and the retail trade sector (8.2%). The top industry of employment was consistent between the local area and regional area, with the Singleton and Muswellbrook LGAs sharing the same top three industries of mining (21.6%), healthcare and social assistance (8.8%) and retail trade (7.9%).

Within the area of reference, the largest employment share was in the healthcare and social assistance industry (15.5%), followed by retail trade (8.9%) and construction (8.7%).

More recent industry employment data from the NSC (2022) for the Hunter employment region indicates the health care and social assistance had the largest share of employment (16.7%), followed by retail sector (11.6%), the education and training (9%), construction (8%), and accommodation and food services (7.3%). Between 2017 and 2022 the following industry sectors experienced considerable employment growth: health care and social assistance, retail trade, and the education and training sector (NCS 2022). A number of other industry sectors experienced workforce contraction during the same period including mining (-9.1%), information media and telecommunications (-54%), agriculture, forestry and fishing (-41.1%), construction (-11%), administrative and support services (-15.9%) and arts and recreation services (24.3%) sectors.

The top three industries of employment for youth (aged 15–24) in the Hunter region were accommodation and food services (25.7%), retail trade (20.1%) and construction (9.2%) (NSC 2022). The top three industries of employment for mature age persons (aged 55+) were health care and social assistance (18.9%), education and training (10.9%), retail trade (8.1%), and construction (7.9%).

5.3.4 Occupation

In the local area, the top three occupations in 2021 were technicians and trades workers (18.5%), machinery operators and drivers (17.2%) and community and personal service workers (13.2%).

Largely reflecting the local area, the regional area's most dominant occupations are also technicians and trades workers and machinery operators and drivers, which respectively hold 18.6% and 16.7% of employment in the regional area. These top occupations are consistent with the dominant industry of employment in the local area which in 2021 was the mining industry. These occupations generally require TAFE education or certificate level qualifications, which comprise the largest proportion of qualifications in the local and regional areas, with almost half of technicians and trades workers holding a Certificate III or higher vocational qualification (NSC 2021).

In the area of reference, professionals (18.8%) constitute the occupation with the largest employment share, followed by technicians and trades workers (15.8%). Professionals often hold a bachelor's degree or higher-level qualifications which indicate that a more skilled workforce could be sourced from the area of reference if unable to be sourced locally or regionally.

5.3.5 Businesses by industry

In the regional area, the top three industries of registered businesses were within the agriculture, forestry and fishing industry (26.7%) followed by construction (12.8%) and rental, hiring and real estate services (8.7%). This demonstrates a strong agriculture presence within the regional area. While the mining industry still remains as the dominant industry within the local and regional area, the industry comprises only 0.7% of registered businesses.

In 2023, there were a total of 3,404 registered businesses identified in the regional area, with majority of the registered businesses located in the Singleton LGA (2,297 businesses), followed by Muswellbrook LGA (1,107 business) (see Table 5.3). Of the 3,404 registered businesses identified in the regional area most businesses were non-employing (60.0%), followed by businesses that employ 1–19 employees (36.9%). The most common turnover of businesses in the regional area is the range of \$50k to less than \$200k (13.1%), followed by \$200k to less than \$2m (12.1%), with 12.0% of business having a turnover of zero to less than \$50k. Only 1.6% of businesses had a turnover of \$2m or more. The data reflects there is more registered businesses in the region that comprise of sole traders, with a small proportion of businesses turning over more than \$2 million or more, this indicates that mining represents a small proportion of registered businesses in the regional area. However, the mining industry represents the most significant industry of employment (see Section 5.3.3) and the largest output generating sector, contributing approximately 68.6% of total annual economic output in Muswellbrook LGA (\$9.3 billion) and 76.0% of total annual economic output in Singleton LGA (\$16.9 billion) (REMPLAN Economy, 2024).

Table 5.3 Percentage of registered businesses by industry and location, 2023

Business Industry	Singleton LGA	Muswellbrook LGA	Total number	Regional area
Agriculture, forestry and fishing	589	321	910	26.7%
Mining	16	8	24	0.7%
Manufacturing	91	36	127	3.7%
Electricity, gas, water and waste services	4	3	7	0.2%
Construction	326	111	437	12.8%
Wholesale trade	57	22	79	2.3%
Retail trade	102	52	154	4.5%
Accommodation and food services	109	53	162	4.7%
Transport, postal and warehousing	115	47	162	4.7%
Information media and telecommunications	7	5	12	0.3%
Financial and insurance services	45	19	64	1.8%
Rental, hiring and real estate services	199	100	299	8.7%

Business Industry	Singleton LGA	Muswellbrook LGA	Total number	Regional area
Professional, scientific and technical services	184	80	264	7.7%
Administrative and support services	102	59	161	4.7%
Public administration and safety	3	3	6	0.1%
Education and training	42	9	51	1.5%
Health Care and Social Assistance	81	55	136	3.9%
Arts and recreation services	27	20	47	1.3%
Other services	198	104	302	8.8%
Total number	2297	1107	3404	100.0%

5.3.6 Income

Individual income data is one of many indicators of socio-economic status and is linked to factors such as employment status, age (e.g. students and pensioners often receive a lower income), qualifications and type of employment (id consulting 2021c). There is significant variation in individual and household median weekly incomes across the local area and regional area.

For the local area, individual median weekly incomes range between \$624–\$1,083. Long Point (\$1,083), Jerrys Plains (\$964) and Maison Dieu (\$841) hold individual median weekly incomes higher than NSW which was \$813. Camberwell SAL and Muswellbrook LGA fell below this benchmark. Household median weekly incomes in the local area range between \$1,281–\$2,200. Only Camberwell (\$1,281) and Muswellbrook (\$1,603) fall below the NSW's median of \$1,829.

Singleton and Muswellbrook LGAs demonstrate comparable median incomes to NSW. Singleton LGA was reported as having an individual median weekly income of \$819 and a household median weekly income of \$2,016. Muswellbrook LGA was reported as having an individual median weekly income of \$769 and a household median weekly income of \$1,628. The slightly lower income levels demonstrated by Muswellbrook LGA is indicative of the significantly higher levels of disadvantage evident in the Socio-Economic Indexes for Areas (SEIFA) indices (see Section 5.5).

5.3.7 Social Infrastructure

A Town Resource Cluster (TRC) analysis considers the potential impacts that result from a mine closure which can include impacts on the viability or sustainability of social infrastructure (Coakes & Lamb 2016). Therefore, this section presents the available social infrastructure and services, specifically health, education and community services, within each resource centre.

There is a wide variety of health, education and community services available across all resource centres. When comparing all available health services within each resource centre there is a higher concentration of health services within Maitland SAL and Cessnock SSC. In terms of education services, each resource centre has at least one childcare service, primary school, high school or combined school and tertiary education institute, with Cessnock providing the most education services when compared to all resource centres. Availability of community services such as sport and recreation facilities and support services varied amongst the resource centres with Maitland SSC providing the most community services.

5.4 Housing and short-term accommodation

5.4.1 Rental market conditions

Access to safe, adequate and affordable housing is a critical pillar in enabling the physical, mental and social health of communities. While housing is generally provided in the private market, a distinct lack of affordable housing options for different income brackets and diverse community members can result in more people needing housing assistance (Infrastructure Australia, 2019).

i Rent repayments

Within the local area, the median rental repayments are approximately \$340 per week, the regional area is \$319 per week and the area of reference is \$380 per week, which all falls under the NSW median of \$420.

Housing stress is considered to occur when households in the lower 40% of income distribution spend more than 30% of their income in housing costs (rents or mortgage repayments) (AHRC, 2021). This can mean that local people who are not employed in higher-paying jobs may be unable to afford local rents which can be pushed up by higher salaries.

Analysis of rental stress in the local area shows that a higher proportion of households in Muswellbrook (31.8%) and Singleton (32.8%) experience rental stress when compared to Maison Dieu and Jerrys Plains, which had no reported rental stress in 2021. The local area showed lower levels of rental stress than what is comparatively demonstrated across NSW, where 35.5% of households had rent payments greater or equal to 30% of their income. Muswellbrook and Singleton LGAs experience 30.7% and 31.1% of households in rental stress respectively (ABS, 2021a).

ii Rental property availability

A snapshot of housing availability in the local area can be derived from analysis of data from the REA Group (2025). As at May 2025, there are no properties available for rent locally in Jerry Plains (2330), Camberwell (2330) and one property in Maison Dieu (2330). There were 89 properties for rent in the regional area, with most of these properties located within Singleton and surrounds (51 properties for rent). Singleton had a median rental price of \$600 per week, which was slightly higher than Muswellbrook at \$500 per week (REA Group, 2025). In the area of reference there were approximately 1,152 rental properties in regional area (REA Group, 2025). Most of these properties were located within Newcastle and surrounds (230 properties for rent), Cessnock (51 properties for rent). Within the Hunter region, median rental payments are \$875 per week, which is an increase of 26.8% over the past 12 months (see Table 5.4).

Table 5.4 Private rental property availability March 2025

Location	Residential property type	No. of residential properties available	Highest rent (\$p/w)	Lowest rent (\$p/w)
Singleton (PC 2330) and surrounding areas	All properties	49	1,980	350
	Furnished properties ¹	21	1,980	500
Muswellbrook (PC 2333) and surrounding areas	All properties	46	950	240
	Furnished properties ¹	10	950	240
Hunter region, NSW (area of reference)	All properties	1152	4,000	120
	Furnished properties ¹	205	4,000	120

Location	Residential property type	No. of residential properties available	Highest rent (\$p/w)	Lowest rent (\$p/w)
Newcastle (PC 2300) and surrounding areas (area of reference)	All properties	98	4,000	210
	Furnished properties ¹	19	4,000	280

Source: REA Group 2025

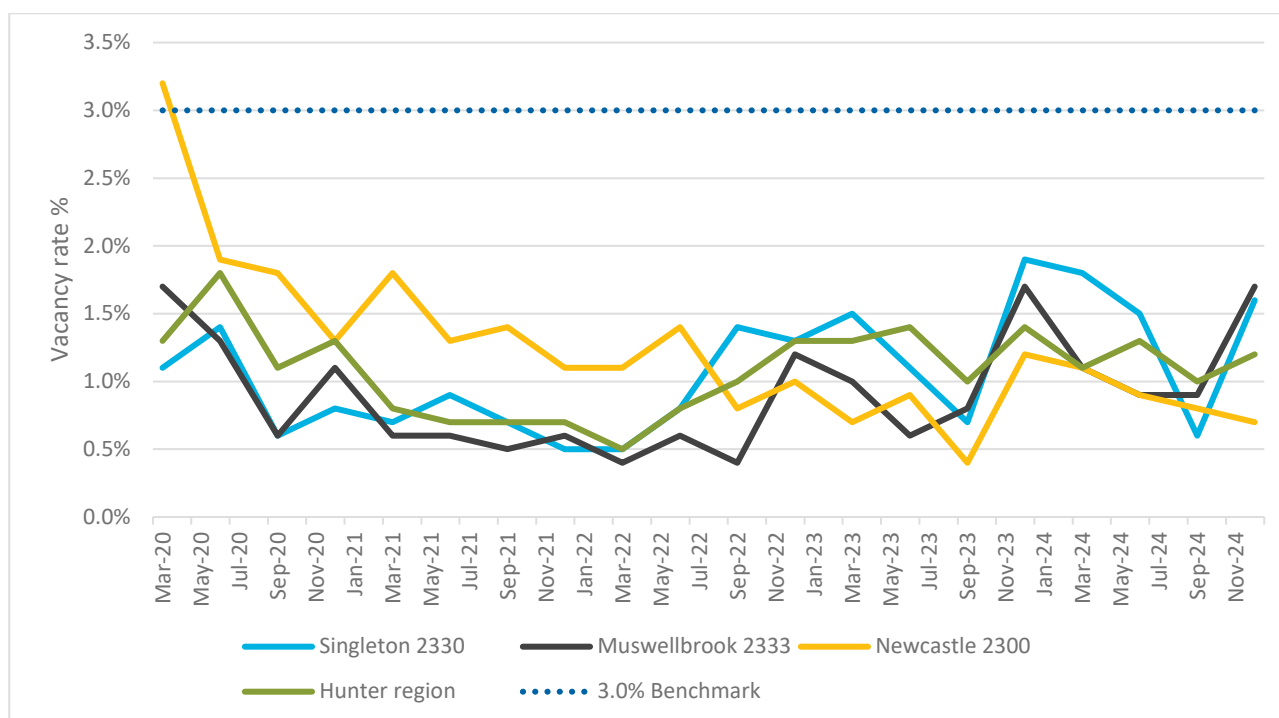
Notes: 1. Subset of all properties.

iii Residential vacancy rates

The residential vacancy rate trends for Singleton (2330), Muswellbrook (2333), Newcastle (2300) and Hunter region are presented in Figure 5.1 for the period March 2020 to December 2024. The vacancy rate in the local area during this period was consistently below the 3.0% benchmark, indicating a tight rental market with an undersupply of rental housing during that time. Whilst the data shows considerable fluctuation in rental vacancy rates across the two communities in the regional area and the area of reference, overall rental vacancy rates have steadily declined.

In May 2025 there were 31 rental vacancies in Muswellbrook, 39 in Singleton, 47 in Newcastle (city centre) and 1,297 in the Hunter region. The findings of interviews conducted with real estate agents in the local area for the SIA (EMM, 2022a) confirmed the presence of a tight housing market and limited rental availability. The SIA interview outcomes suggest the following factors are influencing current housing market conditions in Muswellbrook and Singleton and to a lesser extent Hunter region:

- reduction in available rental stock as properties are purchased as holiday homes or transferred into the short-term stay market (i.e. Airbnb)
- demand generated by major projects occurring in or nearby the local area (see Section 8)
- an increase in-migration due to the COVID-19 pandemic and the corresponding increase in the attractiveness of regional NSW communities as permanent resident locations.



Source: sqmresearch.com.au

Figure 5.1 Rental vacancy rates, March 2020-December 2024

5.4.2 Home tenure

Within the local area, 32.7% of households are renters, followed closely by 36.7% of households being owned with a mortgage and only 27.8% owning their homes outright. Comparatively, in the regional area, homeownership with a mortgage is the most common form of tenure with 37.6% falling within this category. However, there is some variance between Singleton LGA and Muswellbrook LGA in which the former has a greater level of homeownership (72.4% with and without a mortgage) whereas the latter has a greater proportion of renting. Greater rental rates in Muswellbrook may be explained by the higher levels of disadvantage demonstrated in the SEIFA analysis (see Section 5.5).

i Mortgage repayment

Mortgage repayments within the local area range between \$1,376 and \$2,692 per month, with the lowest repayment being in Jerrys Plains and the highest repayment being in Maison Dieu. The study area consistently had mortgage repayments lower than the NSW median (\$2,167), apart from Maison Dieu which had a median monthly mortgage repayment of \$2,692. The regional area had a median monthly mortgage repayment of \$1,717, which was lower than the area of reference (\$1,896) and NSW.

Across the local and regional area, mortgage stress is most greatly experienced in Singleton and Muswellbrook with 9.7% and 8.2% of households experiencing mortgage stress. In Singleton LGA, 10.7% of households experience mortgage stress, where more than 30% of household income is required for mortgage payments, with Muswellbrook LGA demonstrating a proportion of 9.2% of households. Rates of mortgage stress in the regional area fall below the proportion of households across NSW experiencing mortgage stress (17.3%).

5.4.3 Short term accommodation

The term short-term accommodation refers to accommodation options that are typically provided to visitors or tenants for a short period of time; for example, motels, hotels, serviced apartments, bed and breakfast, self-contained homes, caravan and camping parks and Airbnb. The length of tenancy in these forms of accommodation can often extend to lengthy stays, depending on accommodation availability, price and personal circumstances.

Short-term accommodation providers in the local and regional area service a number of different industry sectors while the capacity is largely taken up by the mining sector and places a strong focus in Singleton and Muswellbrook LGAs. The area of reference is known for hosting large events, and this might place significant demand on short-term accommodation within the Hunter region. Both the number of events and patronage is increasing, evident in an increase in visitor numbers to the Hunter region.

Within the local area short-term accommodation is concentrated in the larger communities of Singleton and Muswellbrook and consists of a combination of hotels, motels, bed and breakfast accommodation, vineyard and country stays, cottages, holiday home rentals (Airbnb) and camping and caravan parks. The most abundant form of short-term accommodation in the local, regional area and area of reference is private holiday rentals through platforms such as Airbnb and booking.com.

Data collected in 2025 from Google travel and airdna.com for the Singleton LGA estimated 397 short term accommodation listings, with a comparably lower number of 36 available in Muswellbrook LGA. Occupancy rates were confirmed via phone calls in 2023, revealing an average Monday-Friday occupancy rate of 90% across the regional area. Other data available shows within the Upper Hunter there are an estimated 59 short term accommodation listings. Cessnock LGA shows an estimated 1,400 short term accommodation listings and Maitland LGA demonstrates an estimated 180 short term accommodation listings.

During 2022 SIA engagement, stakeholders identified the trend of properties being purchased and transferred out of the stock of private rental or owner-occupied housing and into the short-term accommodation or holiday rental market.

5.5 Vulnerabilities and vulnerable groups

The level of disadvantage or advantage in the population is indicated in SEIFA which focuses on low-income earners, relatively lower education attainment, high unemployment and dwellings without motor vehicles. SEIFA is a suite of four summary measures that were created from Census data, including:

- the Index of Relative Socio-Economic Disadvantage (IRSD)
- the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD)
- the Index of Education and Occupation (IEO)
- the Index of Economic Resources (IER).

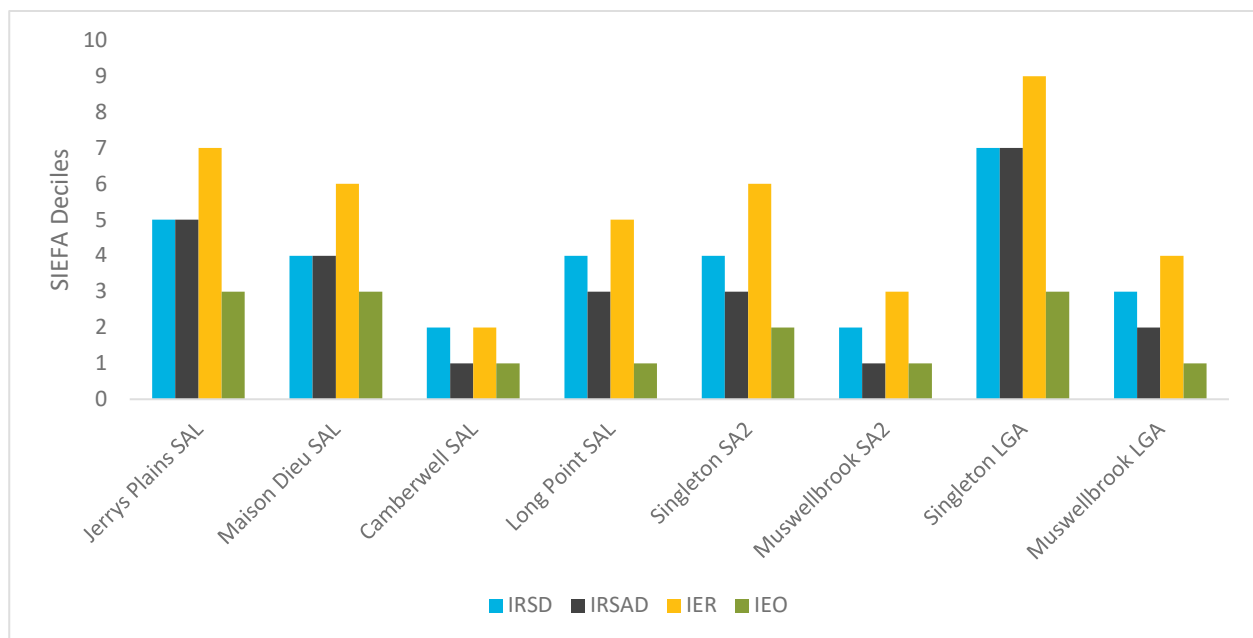
Each index is a summary of a different subset of Census variables and focuses on a different aspect of socioeconomic advantage and disadvantage. Low rankings are deemed- most disadvantaged and high rankings least disadvantaged within a decile ranking system where the lowest 10% of areas within Australia are given a decile number of 1 and the highest 10% of areas are given a decile number of 10. For the SEIFA rankings across the local area and regional area, see Figure 5.3.

According to the 2021 SEIFA, there is a large degree of variation within the local area in terms of disadvantage. Jerrys Plains holds the highest SEIFA deciles in the local area for IRSD (5th decile), IRSAD (5th decile), and IER (7th decile). Both Jerrys Plains and Maison Dieu fell in IEO decile 3, with the remaining local area in decile one or two. This remains true for the regional area, where Singleton LGA was in the 3rd decile and Muswellbrook LGA in the 1st. This shows that relative to the state, the project study area is in the bottom 30% for education and occupation. According to the Occupation Standard Classification for Australia (OSCA), mining is a skill level 4 occupation, with skill level 4 and level 5 occupations measured as an indicator of disadvantage. The low IEO index is likely attributed to the local area having fewer qualifications, as all categories of persons with a non-school qualification were below the state averages, excluding certificate attainment.

For the IER, Jerrys Plains, Singleton and Maison Dieu had a comparatively high decile ranks, with the remainder of the local area in the 5th decile or below. Within the regional area, Singleton LGA was in the 9th decile for IER, placing it in the top 10%, compared to Muswellbrook LGA which was in the 4th decile. IER is determined by measuring income and housing indicators, such as high/low incomes, and housing costs. This is in line with previously discussed income data, which placed Singleton higher median household and individual incomes when compared to NSW.

Camberwell is in the bottom 10-20% of communities in Australia regarding relative disadvantage, with regard to IEO and IRSAD falling in the lowest percentile of 1 and IRSD and IER falling in decile 2. Similarly, Muswellbrook SA2 is in the bottom 10% of communities in Australia for the IRSAD and IEO indexes falling in the lowest decile. These levels of disadvantage are also reflected across the broader Muswellbrook LGA (ABS, 2021a).

These combinations of high and low disadvantage across the local and regional area suggest that there may be discrepancies between high- and low-income earners, as well as those who rent compared to own their home. Uneven income distribution may be caused by uneven incomes because of the high proportion of mine workers in the local and regional area. Generally, mine workers earn \$2,452 per week, compared to the \$1,579 earned by workers in the second highest industry of healthcare and social assistance (JSA, 2025). This represents an approximate income gap of \$873 per week between the top two industries across the study area.



Source: ABS 2021

Figure 5.2 SEIFA deciles in the local and regional area, 2021

5.5.1 Disability

Disability can be understood as people who need assistance in their day to day lives with any or all of the following core activities: self-care, mobility or communication because of a disability, long-term health condition (lasting six months or more) or old age. In the local area, 5.9% of people have a need for assistance in one or more of the three core activities of self-care, mobility and communication due to a long-term health condition (lasting 6 months or longer), a disability (lasting 6 months or longer), or old age. Singleton SA2 and Muswellbrook SA2 (4.0%) were identified as requiring more assistance compared to NSW (5.8%), while the population within the regional area has a lower need for assistance overall (5.5%).

The similar need for assistance in the local area and regional area may reflect access to and availability of social services, in particular disability services, in the regional area. Baxter, Hayes and Gray (2011), of the Australian Institute of Family Studies, found that people living in major cities and regional centres are less likely to have problems accessing services such as doctors and disability services, while those in outer regional or remote areas have the most trouble accessing these services. This may contribute to people migrating to regional centres, such as Singleton within the regional area, and larger cities where those services are more readily available.

Table 5.5 Core activity need for assistance, 2021

Location	Has need for assistance	Does not have need for assistance
Jerrys Plains SAL	3.4%	92.4%
Maison Dieu SAL	4.0%	82.9%
Camberwell SAL	2.9%	76.5%
Long Point SAL	0.0%	73.4%
Singleton SA2	6.0%	88.1%
Muswellbrook SA2	6.0%	85.4%
Local area	5.9%	87.0%
Singleton LGA	5.4%	88.2%
Muswellbrook LGA	5.6%	86.2%
Regional area	5.5%	87.4%
Area of reference	6.6%	87.8%
NSW	5.8%	88.3%

5.5.2 Homelessness

As explained by the Australian Human Rights Commission (AHRC) (n.d.):

The causes of homelessness are numerous and complex. Homelessness can be caused by poverty, unemployment or by a shortage of affordable housing, or it can be triggered by family breakdown, mental illness, sexual assault, addiction, financial difficulty, gambling or social isolation. Domestic violence is the single biggest cause of homelessness in Australia.

Homelessness can lead to health problems including poor nutrition, depression, substance abuse, poor dental health, and mental health conditions (AHRC, 2021). For homeless persons, hardships with finances, transport, identification, Medicare, and difficulty with appointment maintenance/treatment plans make accessing health care services more difficult than the average person (AHRC, 2021). As such, homeless persons are at greater risk of being negatively affected by potential impacts on livelihoods and health and wellbeing.

Rates of homeless are not available for the local area but are available for the regional area. Homelessness is measured at a rate per 10,000 persons. In 2021 rates of homelessness across the LGAs of the regional area and area of reference were lower than rates of homelessness across NSW (43 per 10,000), however the rate of homelessness in the Singleton LGA (37 per 10,000) was higher than Muswellbrook LGA (26 per 10,000) however both LGAs in the regional area had a lower homelessness rate than the state (ABS, 2023).

5.5.3 Aboriginal and/or Torres Strait Islander Population

At the time of the 2021 Census, 10.5% of the total population within the local area, 9.6% of the population within the regional area and 7.1% of the population within the area of reference identified as Aboriginal and/or Torres Strait Islander compared to 3.4% in NSW. The largest proportion of total population was in Long Point SAL (21.9%) followed by Camberwell (20.6%). The largest demographic in the Aboriginal and/or Torres Strait Islander community in the regional area was children (aged 5–14 years) with a proportion of 27.7%. There is a much smaller proportion of persons aged 65 years and older who identify as Aboriginal and/or Torres Strait Islander in the regional area (4.2%). The Aboriginal population's smaller proportion of the population (both males and females) living beyond 65 years aligns with the lower life expectancy among Aboriginal Australians nationally that is particularly acute in Aboriginal males (AIHW 2020), with much of this gap is explained by the relationships between increased socioeconomic disadvantage, worsened mental health outcomes, and related health risk behaviours, including greater proportions of smoking and alcohol use (AHMAC 2017).

5.5.4 Effects of the COVID-19 pandemic

The SIA (EMM, 2022a) was conducted during the COVID-19 pandemic. Population data and forecasts presented in the social baseline for the EIS SIA were developed prior to the onset of the pandemic and did not consider the potential impacts to assumptions stemming from COVID-19. However, they did provide an insight into the baseline condition of the regional area without this external shock.

While the baseline in this report has been updated, it presents population data and forecasts either obtained during or soon after the COVID-19 pandemic. For example, the 2021 Census was conducted during the pandemic – Census night occurred on 10 August 2021, a time when many parts of Australia were under lockdown or subject to border restrictions.

During the pandemic, many Australians relocated from major cities to regional areas, seeking more space and housing affordability. This trend has continued, with regional experiencing substantial population gains while some large metropolitan cities (e.g. Sydney) experiencing a net domestic outflow of people. In facilitating increased migration from urban centres to more regional areas of Australia, COVID-19 increased the number of people at risk of housing instability and homeless for persons experiencing financial hardship (Anglicare 2021). This has contributed to increased rents and lower rental availability (particularly affordable housing) in regional areas of Australia, including the regional area.

In addition, COVID-19 increased the likelihood of housing relocation among vulnerable households due to instances of low income, unemployment or insecure work and rental/mortgage stress (id consulting 2020). These changes could impact upon household formations and migrations in a multitude of ways, such as younger people returning to live with their parents, elderly people moving to live with their children for care and the creation of larger households to share the burden of housing costs (id consulting 2020).

Evidence indicates that COVID-19 generated similar impacts to the Global Financial Crisis in Australia, whereby apprehension associated with a global issue caused elevated demand for housing which was further contributed to by low interest rates and resulted in upward pressure on housing prices (Verdouw et al 2021). Rising prices within the private housing market generally work to further exclude low income and vulnerable people from the property market, leading to housing stress and insecurity (Verdouw et al 2021). The impacts of COVID-19 on the labour and housing market are ongoing and as such, there is difficulty in measuring the full extent of those impacts currently in and into the future.

5.6 Social Infrastructure and services

There are two key communities in the local area: Singleton and Muswellbrook. Each community has a range of services including general practitioner (GP) services, hospital or multi-purpose service (MPS), preschool, primary and secondary education facilities, emergency services (i.e. rural fire brigade, police station), employment services, youth and Aboriginal and Torres Strait Islander services. Additional services are accessible in the regional area. Many of the services are multi-service providers and do not solely provide for one service sector.

TAFE is the only provider of post-secondary school education and training in the local area. The University established a research and education facility called Upper Hunter, located within the Tertiary Education Centre in what is known as the Hunter Region Innovation Precinct in Muswellbrook (University of Newcastle 2022). The nearest university campus is located in Newcastle (University of Newcastle). The availability of social infrastructure, services, and facilities in the local and regional area is presented in Table 5.6.

Table 5.6 Social infrastructure, services, and facilities in the local and regional area, 2021

	Local area	Regional area
Hospital services	✓	✓
GP services	✓	✓
Childcare services	✓	✓
Primary schools	✓	✓
Secondary schools	✓	✓
Tertiary institutions	✓	✓
Emergency services	✓	✓
Aboriginal services	✓	✓
Child and family services	✓	✓
Youth services	✓	✓
Housing and homelessness services	✓	✓
Employment services	✓	✓
Disability services	✓	✓
Aged care services	✓	✓
Women's services	✓	✓

Source: ACECQA 2020; myschool.edu.au; AIHW 2020, Hunter New England Health 2020; National Health Services Directory 2020; askizzy.org.au; police.nsw.gov.au; ambulance.nsw.gov.au; fire.nsw.gov.au; ses.nsw.gov.au

5.6.1 Emergency services

Emergency services within the local area are predominantly located within Singleton and Muswellbrook. A police station, ambulance station, fire and rescue station and an SES unit have been identified within Singleton and Muswellbrook as well as Denman SSC which is located outside of the local area and within the Muswellbrook LGA. Availability of emergency services in selected suburbs in the local and regional areas are summarised in Table 5.3.

There are three police stations, two ambulance stations, and two fire and rescue stations in the local area. The local area also has a local State Emergency Service (SES) unit and is home to the SES Hunter – Northern Zone Headquarters. The Project is in the Hunter Valley region of the NSW Rural Fire Service (RFS). Within the local area RFS brigades are located in Singleton, Muswellbrook, Jerry Plains. The town of Denman which is located outside of the local area and within the Muswellbrook LGA also has a police station, ambulance, fire and rescue and SES unit.

5.6.2 Health services

The local area is located within the Hunter New England Local Health District (LHD). The majority of health services within the local area are located within the major centres of Singleton and Muswellbrook, with the remainder of services located in the regional area within town of Denman which is located outside of the local area and within the Muswellbrook LGA.

There are three hospitals located within the local area and regional area. Singleton Hospital and Muswellbrook Hospital are both located within the local area, whilst the Denman Multi-Purpose service is located within the regional area.

Singleton Hospital holds 55 beds and provides emergency services and other services including surgical, obstetrics, palliative care, acute and chronic medicine, and renal dialysis. Outreach services available are cardiology, paediatric, pain management, gynaecology, and allied health services. Nursing Clinics are also provided. No specialist mental health services are provided. Patients will be referred to Maitland or Newcastle Hospitals for treatment if required. The hospital also provides cancer surgery, with chemotherapy and radiation therapy provided at the Calvary Mater Newcastle.

Muswellbrook District Hospital is a 46-bed facility with the following services: 24-hour emergency department, acute care, allied health services, chemotherapy, community health centre, gastroenterology, ophthalmology, paediatric, renal dialysis, and surgical.

Denman Multi-Purpose Service with 19 beds, 13 aged care beds, 4 acute patients, and emergency services. The facility also provides general medical, palliative care, oncology, neurology, and community health services and respite services. There are no mental health services available, people requiring mental health support are referred to Maitland Hospital.

In-depth interviews undertaken for the SIA (EMM, 2022a) noted that the region had seen a greater demand for health services in the previous two years, generally as a result of increase in population to Singleton and Muswellbrook, aging populations with chronic health needs, limited GPs servicing the area, greater distances to travel when needing to see specialists, lack of health services and health services being understaffed.

Experienced impacts cited by real-participants in consultation included waiting weeks and sometimes months to see local doctors and specialists and the high costs of travel and accommodation costs required to attend appointments outside of the local area; there are limited GPs; lack of adequate mental health services; in addition COVID-19 has impacted on staffing levels and exacerbated already pressured and understaffed services being understaffed; increased pressures on the ambulance services where people will ring the emergency services if they are not able to get transport or people will present at the emergency department if they are not able to see their GP earlier. The changing nature of the health needs and demographics of rural residents, as well as the increased demand on doctors can also have a flow on affect for hospital emergency departments. Effects occur as people living in rural areas are more likely to visit an emergency department because a GP is not available,

evident in the 'Health outcomes and access to Health and Hospital Services in rural, regional and remote NSW report in May 2022. The report also found that the healthcare system in rural, regional and remote areas, was "in crisis", leading to "significantly poorer health outcomes" when compared to the city (Parliament 2022).

In the local and regional area there are 37 general practitioner (GP) services which primarily offer standard GP services (PHIDU 2024). The MPS located in Denman also offers a range of health-related services to the local area and broader regional area. Other health related services available to the community are related to community health, Indigenous health, mental health, maternal, child and family health, aged care and special services.

5.7 Road infrastructure and transport

There are limited forms of public transport within the local area. The main mode of travel to work is by car with 68.4% of the local population and 66.5% of the regional population traveling by car. The main road network in the local area consists of two main arterial roads, Jerrys Plains Road/Golden Highway and New England Highway. Lemington Road is also a key road in the local area, connecting the two main arterial roads between Jerrys Plains and Camberwell. New England Highway provides access to the local and regional areas from Newcastle in the south and Tamworth to the north and Golden Highway is the main access road west to Dubbo. Public transport and rideshare services are only available within Muswellbrook and Singleton townships, with trains running from Sydney daily and bus routes operating 5 to 6 days a week. Bus routes and train services are limited to Muswellbrook and Singleton, with no public transport options available within Jerrys Plains, Maison Dieu, Camberwell and Long Point.

5.7.1 Road incidents

The Project is located north of Singleton between the Golden Highway (B84), which runs along the southern boundary of the HVO Complex and the New England Highway (A15) which runs along the northern boundary of the HVO Complex. Road incidents (crash) trend data is at the LGA level for Singleton LGA and Muswellbrook LGA.

Between 2019 and 2023 the overall number of fatal injuries in Singleton LGA fluctuated (from 7 fatalities in 2019 declining to 3 fatalities in 2023) compared with number of fatal injuries in Muswellbrook LGA which was 1 fatality in 2019 to 3 fatalities in 2023, which was the highest number in the 4-year period. The number of non-casualty road incidents in the LGAs declined in Muswellbrook LGA from a peak of 19 incidents in 2021 to 15 incidents in 2023. In Singleton LGA, non-casualty crashes rose from 16 in 2019 to 24 in 2023 (TfNSW, 2023).

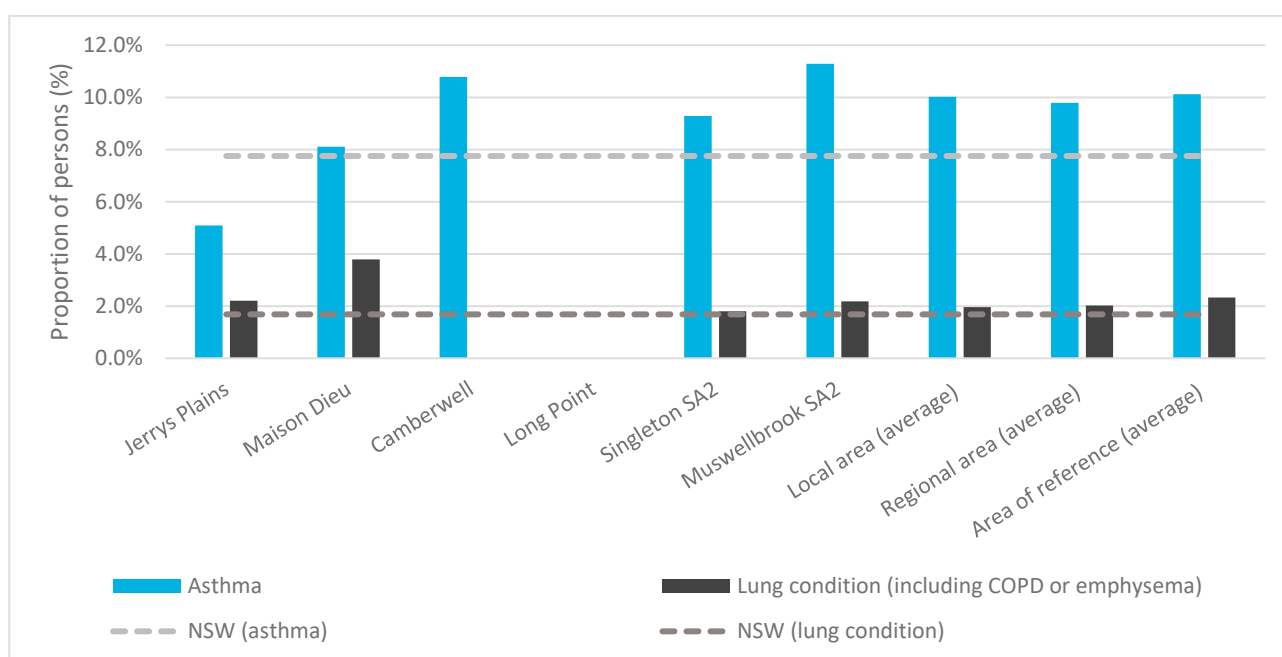
The number of road incidents causing injury in Singleton LGA decreased during this period from 79 incidents in 2019 to 61 incidents in 2023. However, this remains significantly higher in comparison to the number of road incidents causing injury in the Muswellbrook LGA from, where there were 25 incidents in 2023.

5.8 Community health and well-being

The local area is located within the New England Local Health District (LHD), with health data only available for the Singleton and Muswellbrook LGAs. The New England LHD has a higher percentage of persons who are obese, smoke daily, and consume alcohol daily (NSW Health, 2023). Additionally, 17.7% of persons in Muswellbrook LGA and 15.4% in Singleton LGA self-assess their health as fair or poor compared to 14.8% of NSW (PHIDU, 2024). Rates of attributable hospitalisations for high body mass, intentional self-harm, and asthma in Singleton LGA and Muswellbrook LGA also exceeded the NSW rates. However, hospitalisation rates attributable to alcohol were lower within in the local area compared to greater NSW.

5.8.1 Asthma

In 2021, the local area had higher proportions of people with asthma when compared NSW (7.8%). In the local area, 10% of adults reported having asthma, with the highest prevalence in Muswellbrook SA2 (11.3%) and Camberwell SAL (10.8%). This trend continued in the regional area and area of reference, which has proportions of 9.8% and 10.1% respectively. Rates of other lung conditions (including COPD or emphysema) were slightly higher throughout the local area (2.0%), regional area (2.0%), area of reference (2.3%) when compared to NSW (1.7%). Of the study area highest proportion of lung conditions was reported in Maison Dieu (3.8%), which was more than double NSW. Social determinants of health, described as “the circumstances in which people grow, live, work, age, and the systems put in place to deal with illness...which are shaped by political, social, and economic forces” (AIHW 2020), also indicate the health of a population. These include factors such as conditions of employment, provision of social services and support, and socio-economic position. There is a higher level of unemployment within the local area compared to NSW as well as a lower proportion of persons completing Year 12 or equivalent or a non-school qualification which suggests higher rates of socio-economic disadvantage. Data for asthma prevalence in adults is presented in Figure 5.3.



Source: ABS Census 2021

Figure 5.3 Asthma prevalence (proportion), 2021

6 Community and stakeholder engagement

This section summarises the community engagement activities which have informed the SIA Amendment.

This SIA Amendment draws on feedback generated through the engagement undertaken for the Project, including:

- previous independent social engagement conducted during preparation of the EIS SIA (EMM, 2022a)
- EIS engagement program and engagement undertaken since the EIS was submitted
- feedback provided through EIS submissions phase
- complaints received during ongoing operations between January 2023 and May 2025.

Due to the changes as a result of the proposed amendment being assessed as minor, no SIA specific engagement has been undertaken for this SIA Amendment.

Comprehensive stakeholder engagement for the overall Project was undertaken throughout Project scoping and preparation of the EIS, as detailed in Chapter 6 of the EIS (EMM, 2022b) and the EIS SIA (EMM, 2022a). Since the submission of the EIS, HVO has continued to engage with stakeholders including council, government agencies, local residents, and neighbouring landholders. An overview of the engagement activities carried out following the public exhibition of the EIS is provided in Section 5 of the Submission Report (EMM, 2023b). Additional consultation was completed as part of the HVO North Amendment report (EMM, 2023a).

Consultation undertaken since the submission of the Submission Report (EMM, 2023b) is detailed below.

6.1 Community

HVO regularly distributes newsletters via letter box drop to the local community. These newsletters are also published on the HVO website. Since the public exhibition of the EIS, HVO has provided regular updates on the Project to the community through these newsletters. Newsletters since the submission of the Submissions Report (EMM, 2023b) and Amendment Report (EMM, 2023a) were distributed to the local community in Jerrys Plains, Maison Dieu, Long Point, Camberwell and Gouldsville as follows:

- HVO News (Issue 11) in April 2023
- HVO News (Issue 12) in September 2023
- HVO News (Issue 13) in April 2024
- HVO News (Issue 14) in October 2024
- HVO News (Issue 15) in April 2025.

Regular updates on the Project have also been presented at the HVO Community Consultative Committee (CCC) meetings held in:

- November 2023
- February 2024
- May 2024
- August 2024

- November 2024
- February 2025
- May 2025.

Material provided to the CCC as part of the quarterly meetings is also made publicly available on the HVO website.

Community information sessions were held in October 2024 (Jerrys Plains and Maison Dieu), Feb 2025 (Jerrys Plains), April 2025 (Maison Dieu).

The HVO Family Days were held on 25 May 2024 and 10 May 2025 which provided updates on the Project to interested community members and the HVO workforce.

Amendments to the Project as described in this SIA Amendment have been communicated to the community via the HVO News (Issue 15), CCC meetings in February and May 2025 and the community information sessions and HVO Family Days in May 2024 and 2025 respectively.

6.2 Registered Aboriginal Parties

Aboriginal consultation for the Project began in 2020 and has remained ongoing since that time. Section 2 in both the EIS ACHA (EMM, 2025) and the ACHA addendum (EMM, 2025) outline Aboriginal participants for the Project and consultation activities that occurred throughout the assessment phase.

Since the completion of the Amendment Report, consultation with the registered Aboriginal parties (RAPs) has involved:

- Provision of HVO newsletters
- Notification of determination of HVO North Mod 8 provided to the RAPs on 28 April 2025.

An Aboriginal Heritage advice report (EMM, 2025b) was prepared to support the Amendment Report (EMM 2025) to assess the change in impacts to Aboriginal cultural heritage as a result of the amended Project. A copy of the Aboriginal heritage advice report was provided to the RAPs.

6.3 Government agencies

Engagement with key regulatory stakeholders continued post lodgement of the Submissions Report (EMM, 2023b) and HVO North Amendment Report (EMM, 2023a), including engagement in relation to the proposed amendments, is summarised Table 6.1.

It is noted that in addition to the formal meetings identified in Table 6.1, meetings were held on regular intervals between HVO and DPHI as to provide updates on the Project.

Table 6.1 Summary of government agency engagement

Agency	Date	Summary of engagement
Commonwealth DCCEWW	10 September 2024	Briefing on amended project and project updates.
DPHI	3 December 2024	Meeting to provide an update on project and overview of proposed amendments to the HVO North mine plan to avoid mining in gas domain 1.
	26 March 2025	Letter outlining proposed amendments and approach to Amendment Report.

Agency	Date	Summary of engagement
EPA	3 December 2024	Meeting to provide an update on project and overview of proposed amendments to the HVO North mine plan to avoid mining in gas domain 1
	16 July 20025	Meeting to provide an overview of proposed amendments and present key outcomes of revised air and noise modelling and greenhouse gas emission calculations
MEG	31 July 2025	Meeting to provide an overview of proposed amendments, changes in mine plan, changes in resource recovery and present key outcomes of economic assessment.
Singleton Council	3 July 2025	Meeting to provide an update on project and overview of proposed amendments.
Muswellbrook Shire Council	1 August 2025	Meeting to provide an update on project and overview of proposed amendments.

7 Assessment of social impacts and benefits

This section assesses potential social impacts and benefits generated by the amendment utilising the methodology outlined in SIA Guideline Technical Supplement and detailed in Section 2 of this report.

The Amendment re-assesses impacts and benefits identified in the EIS SIA (EMM, 2022a) and impacts and benefits identified in the first Amendment Report (EMM, 2023a), to address changes as per the amended project description.

Findings from technical reports and stakeholder perceptions outlined in submissions and complaints received have been used to capture expert and local knowledge in the identification and assessment of social impacts, and to develop appropriate impact mitigation, and enhancement strategies.

Assessment of social impacts considers a range of factors and potentially competing interests. The impact assessment is reflective of this and has included potential impacts and benefits on local communities, the broader region and for vulnerable sectors of affected communities.

It should be noted that the social baseline has changed somewhat since the EIS SIA was conducted, specifically due to the cumulative context including the planned early closure of several mining operations and an additional 15 energy generation and transmission projects planned in the regional area supporting the transition to renewables.

7.1 Assumptions

The EIS SIA assumed the maximum acceptable daily commute distance from a worker’s usual place of residence to the study area has been defined as one hour. The following population change assumptions represent best-case, worst case and median-case scenarios regarding the proportion of the workforce likely to be sourced from the local and regional study areas. This SIA Amendment adopts the median case scenario. It is assumed that ‘non-local hires’ (NLHs) will be required to seek short-term accommodation within either the local or regional area and thus contribute to temporary population change. The predicted temporary population change associated with the construction workforce is shown in Table 7.1.

Table 7.1 Predicted temporary population change associated with construction workforce sourced outside of a 1-hour commute

Level of analysis	Population size	Best case scenario		Worst case scenario		Median case	
		Number of workers sourced outside of a 1-hour commute	Percentage (%) change	Number of workers sourced outside of a 1-hour commute	Percentage (%) change	Number of workers sourced outside of a 1-hour commute	Percentage (%) change
Local area	30,078	120 or 20%	0.4%	240 or 40%	0.8%	180 or 30%	0.6%
Regional area	40,934	120 or 20%	0.4%	240 or 40%	0.8%	180 or 30%	0.6%

Source: ABS 2021, Census of Population and Housing, General Community Profiles

7.2 Assessment

Table 7.2 presents social impacts from the EIS SIA and first amendment, and assessment of potential social impacts relating to the amendment.

Table 7.2 Social Impacts

Impact category	EIS SIA and HVO North Amendment Report				This amendment		
	Original project activity/factor	Original impact identified	Original management measure proposed and mitigated significance	Changes to project activity/factor (amendment)	Latest baseline	Changes to impact and significance level	Changes to management measures
Way of life	- Construction activities involving upgrades to existing facilities and realignment of Lemington Road. - Estimated peak of up to 1,072 truck movements (combined inbound/outbound) towards end of Year 2. - Peak construction workforce of 600 workers and associated light vehicle traffic generation. - Assumed all travelling individually by car across 2-hour period in morning and afternoon peak. - Construction workforce of around 600 required for the construction of the LCPP and rail loop.	Impact of continued traffic congestion and road delays – construction - Incremental increase on a road network already operating under pressure. - Short-term increase in heavy and light vehicles associated with construction	- Traffic Impact Assessment and Traffic Management Plan - Heavy vehicle scheduling outside of morning peak - Exclusion of Old New England Highway as primary construction haul road - Active liaison with relevant road authority and stakeholders to inform on proposed work on road network. Mitigated significance: Medium	- Construction of Lemington Road delayed to approximately late 2026. - Construction of LCPP and rail loop removed from Project.	One submission, in support of the project, was received relating to traffic impacts. One submission from Hunter Valley Glider Club related to road safety on Comleroi Road at HVGC access driveway which has been addressed.	No expected changes to traffic impacts for construction phase of Lemington Road. Construction related traffic impacts from LCPP and rail loop will no longer be realised. Mitigated significance: Low	No change.
	- No increase in operations workforce and no predicted change to current Project operational contribution to traffic. - Stakeholders have raised concerns on continuation of traffic congestion contributed by ongoing operations workforce and travel delays from blasting.	Impact of continued traffic congestion and road delays – operations Continuation of traffic generated by existing operations workforce	No mitigation measures necessary as project operations will not adversely impact the road network. Mitigated significance: Low	The period of operational traffic impacts will be reduced from those presented in the EIS given reduced mine life.	One submission, in support of the project, was received relating to traffic impacts. One submission from Hunter Valley Glider Club related to road safety on Comleroi Road at HVGC access driveway which has been addressed. During 2023-May 2025, five complaints were received relating to traffic. Four complaints related to road safety where vehicles exiting NVO North and HVO South, failed to stop to give way causing near misses. One complaint related to a vehicle tail gaiting a resident’s vehicle between the eastern entry to HVO South and Comleroi Road.	Overall, the period of traffic impacts will be reduced by five years. The realignment of Lemington Road will improve traffic safety including access to the HVO Complex. The mitigated significance level is expected to remain low. Mitigated significance: Low	No change. Continued monitoring and resolution of complaints relating to road safety.

Impact category	EIS SIA and HVO North Amendment Report			This amendment			
	Original project activity/factor	Original impact identified	Original management measure proposed and mitigated significance	Changes to project activity/factor (amendment)	Latest baseline	Changes to impact and significance level	Changes to management measures
	- Continued generation of dust and exposure to diminished air quality a key concern raised by stakeholders. - Construction – works on realignment of Lemington Road. - Finer dust particles (PM₁₀ and PM_{2.5}) – air quality assessment found maximum concentrations may continue to exceed air quality criteria from time-to-time but within range of historically measures days above the criteria (excluding extraordinary events). - Project may contribute to an exceedance of NSW Govt’s Voluntary Land Acquisition and Mitigation Policy criteria for annual average PM₁₀ and PM_{2.5} at two properties. - Receptor 308 (in Jerry Plains) with mitigation right relating to noise under HVO South approval. - Receptor 121 (in Maison Dieu) with mitigation rights for air quality and noise under HVO South Approval.	Impacts due to continued generation of dust and diminished air quality - Construction – dust generation has potential to increase overall dust emissions in early phase of Project but not at level that will change air quality outcomes for nearby neighbours. - Operations – continued operations will not be cause of any exceedance of criteria relating to total suspended particulates and deposited dust at neighbouring residences (not subject to existing air quality acquisition rights).	- Continued implementation of best practice air quality management measures. - Review of existing air quality monitoring locations (new mitigation) - Structure program replacing ‘near neighbour amenity resource program’ (new mitigation) - Finer dust particles (properties without mitigation rights) – private residences within 4 km of proposed mining area will be eligible to tank inspection, cleaning and installation of first flush filter systems for residential water tanks and domestic taps (proposed replacement of existing nearby neighbour amenity resources program). - Finer dust particles (properties with mitigation rights) – managed under existing management measures. Mitigated significance: Medium	- Reduce the project mine plan to avoid mining within gas Domain 1 at HVO North - Reduce the proposed life of mining operations at HVO North by five years, from the end of 2050 to the end of 2045. - Reduce the proposed life of mining operations at HVO South by three years from the end of 2045 to the end of 2042. - Reduce the proposed maximum annual production limit at HVO South from 18 Mtpa to 13 Mtpa. - Propose a limit to the maximum annual ROM coal production for the HVO Complex of 26 Mtpa, a reduction of 16 Mtpa. - Remove approval for the construction and operation of the Lemington Coal Preparation Plant and associated rail facilities.	27 submissions received objecting to the project raised concerns relating to air quality. During 2023-May 2025, 11 complaints were received relating to dust and air quality. Seven complaints were directly related to dusty conditions. Three complaints related to blast fume, and one complaint related to general poor air quality.	The amendment is expected to result in a lower air quality risk than the original Project. This is because the amendment significantly (approximately 23%) reduces the quantities of material (overburden and coal) moved in each year. As such, particulate matter emissions and impacts are expected to be lower than originally assessed. Based on submissions received and complaints, dust and air quality impacts are expected to remain a concern for local residents. As such, mitigated significance remains as medium significance. Mitigated significance: Medium	No change. Continued monitoring of complaints and consideration of additional dust suppression measures.

Impact category	EIS SIA and HVO North Amendment Report				This amendment		
	Original project activity/factor	Original impact identified	Original management measure proposed and mitigated significance	Changes to project activity/factor (amendment)	Latest baseline	Changes to impact and significance level	Changes to management measures
Community	- Project contributes to further coal extraction for energy production and ongoing production of greenhouse gas emissions. - Fuel usage by mobile plant and equipment represents nearly half of estimated direct GHG emissions).	Impact on community cohesion due to divergent opinions on the Project Project forms a small piece of climate change puzzle but is a matter of high importance to the broader Australian community.	- Regularly review and update GHG minimisation measures including consideration of fuel efficiency measures. - Update of HVO Air Quality and Greenhouse Gas Management Plan to incorporate Project (subject to development consent conditions). Mitigated significance: Medium	The proposed amendment when compared to the Project presented in the EIS, will result in a reduction of the total ROM coal extraction by approximately 220 Mt. Over the life of the Project, this will result in a: ~30% reduction in diesel emissions ~50% reduction in fugitive emissions, including an approximate ~90% reduction in fugitive emissions from 2040 onwards ~40% reduction in total Scope 1 emissions.	Of the 1,060 submissions received, 54 submissions related to GHG and climate change. 23 objections received raised concerns in relation to the inadequate justification for the Project, the need to transition away from fossil fuels and the lack of benefit the Project provides. Of the predicted Scope 1 emissions for the Project, almost 50% are attributable to emissions from diesel usage from transport operations.	Submissions evidenced continued community concern regarding ongoing production of greenhouse gas emissions. The proposed amendment addresses these concerns by significantly reducing total ROM coal extraction and greenhouse gas emissions compared to the original Project, particularly in the later years of proposed mining. The amendment primarily targets the avoidance and reduction of diesel and fugitive greenhouse gas emissions, both in total and on an annual basis. This would mainly be achieved by: - avoiding mining within Domain 1 at HVO North - reducing mining at HVO South, due primarily to the removal of some higher strip ratio coal from the mine plan - reducing the annual production rates across the complex from a maximum theoretical value of 42 Mtpa ROM coal to 26 Mtpa ROM coal - reducing the period over which mining would occur by approximately five years - reducing diesel consumption through optimisation of haulage. Mitigated significance: Medium	No change. Continue to explore opportunities to reduce diesel consumption and technologies for GHG mitigation and alternative fuels.
Accessibility	- Construction of Lemington Road – up to 180 workers requiring accommodation. - Preference of short-term accommodation (hotel/motels) but rental accommodation may also be sought due to limited short-term accommodation availability. - Additional demand associated with Project workforce demand placing upward pressure on rental prices.	Impact on an increased housing demand impacting rental affordability and availability Peak construction period only anticipated to occur for up to 6 months and any upward pressure on rental prices is likely to be marginal and temporary therefore potential impacts on vulnerable groups would possibly not eventuate.	- Prioritisation of short-term accommodation rather than rental accommodation to meet construction workforce requirements (where possible). - Maximising number of workers with applicable skills able to be sourced from within one-hour commute from Project site. Mitigated significance: Medium	No change to construction workforce. Up to 180 construction workers requiring accommodation. Construction phase for 18 months.	Median rental repayments in the local area and regional area lower than NSW median. Comparatively higher levels of rental stress in Muswellbrook and Singleton compared to Maison Dieu and Jerrys Plains. No rental properties were available in the local area. There were 89 properties for rent in the regional area including 51 in Singleton surrounds. Vacancy rates have somewhat increased since the EIS SIA, with the number of vacant rental properties rising from 18 to 31 in Muswellbrook and from 23 to 39 in Singleton.	Rental availability and affordability remain highly constrained despite updated social baseline study demonstrating an increased number of rental properties available in the regional area compared to the EIS SIA. Mitigated significance: Medium	No change.

Impact category	EIS SIA and HVO North Amendment Report				This amendment		
	Original project activity/factor	Original impact identified	Original management measure proposed and mitigated significance	Changes to project activity/factor (amendment)	Latest baseline	Changes to impact and significance level	Changes to management measures
Health and wellbeing	- Impacts on health and wellbeing of nearby residents due to noise and vibration generated by construction and operational activities raised as a concern by multiple stakeholders. - Privately owned residences in Maison Dieu expected to experience construction noise levels higher than ‘noise affected’ management level but well below ‘highly noise affected’ management level (noise impact assessment findings). - Ongoing operations – 18 receptors entitled to voluntary mitigation rights based on predicted marginal residual noise impacts from Project. 13 already have existing rights under current HVO approvals 5 on outskirts of Jerry Plains, noise criteria for Project are less than current applicable criteria at these sensitive receptors. - An additional 9 receptors in the village of Jerrys Plains (NAG 5A) predicted to experience marginal noise impacts, however it’s proposed they do not receive voluntary mitigation rights.	Impacts from noise and vibration - Construction noise predictions are well below ‘highly noise affected level’ for all receptors around HVO. - Blasting activities resulting in exposure to vibration and air-blast overpressure	- Retention of existing voluntary noise mitigation rights for 7 receptors that already have mitigation rights in accordance with HVO South Approval. - Existing blast management practices onsite and application of reduced charge masses where required for private residential receptors in Maison Dieu and Jerry plains. - Additional 4 blast monitors will be deployed to ensure effective monitoring and management. Mitigated significance: Medium	Some variations in predicted residual noise impacts due to minor changes to mine plans, including changes to pit progression, fleet composition, mining depth, and project duration with potential to alter the distribution of noise.	There were 8 submissions received relating to noise impacts on neighbours noting that noise exceedances at night were significant. One submission of objection raised concerns regarding the noise and blasting impacts on the nearby Coolmore property and the associated impacts on the thoroughbreds and people residing there. Two complaints relating to noise and vibration were received between 2023 and May 2025.	There are negligible variations (1 dB) in construction noise predictions from the original project. Construction noise impact is considered unchanged from the original project, with all private residential receptors in Maison Dieu predicted to experience noise levels higher than the ‘noise affected’ management level, but significantly less than the ‘highly noise affected’ management level. For operational noise, 13 receptors (a reduction from 18 receptors for the original project) are entitled to voluntary mitigation rights based on predicted marginal residual noise impacts. Eight already have existing rights under current HVO approvals. Five are on the outskirts of Jerrys Plains (NAG 5B), consistent with the original project. Retention of existing voluntary noise mitigation rights for 12 receptors that already have mitigation rights in accordance with HVO South Approval. Due to changes in the predicted distribution of noise, there are 17 receptors in the village of Jerrys Plains (NAG 5A) where marginal noise impacts are predicted, compared to 9 for the original project. Regardless of this variation, the proposed noise criteria are consistent between the original project and this amendment and therefore operational noise impact is considered unchanged. It is proposed that receptors in the village of Jerrys Plains do not receive voluntary mitigation rights, consistent with the original project. Mitigated significance: Medium	No change Continue to investigate and address any complaints.

Impact category	EIS SIA and HVO North Amendment Report			This amendment			
	Original project activity/factor	Original impact identified	Original management measure proposed and mitigated significance	Changes to project activity/factor (amendment)	Latest baseline	Changes to impact and significance level	Changes to management measures
	Community anxiety and concerns around impacts on drinking water quality from possibility of dust entering privately owned water tanks or in ground water sources	Impact of continued anxiety about potential effects on water quality Dust generation during project construction and operations.	- HVO to implement more structured water tank cleaning service for all privately owned residences within 4km of proposed mining area - Residents eligible for tank inspections, cleaning, and installations of flush filter systems for residential water tanks and domestic taps. Mitigated significance: Medium	Minor changes to mine plans, including changes to pit progression, fleet composition, mining depth, and project duration has potential to alter impacts on water quality.	Submissions objecting to the Project raised concerns regarding the risk of impacts to the Hunter River, the Hunter River alluviums, and groundwater drawdown impacts on private bores and groundwater dependent ecosystems and considered these impacts to be in breach of the Aquifer Interference Policy.	The Water Assessment found minor to negligible change to water quality for nearby water users as result of the amendment. It was predicted that there would be no impact to third party groundwater bores. However, it is noted that residents remain concerned about water quality based on submissions received.	No change Continue to address complaints regarding dust and disclose water quality reports of relevance to residents.
	- Construction – potential to increase overall dust emission rom HVO by 3%-4% but not predicted to be of a magnitude that will change air quality outcomes for nearby neighbours. - Operations – maximum 24-hour PM₁₀ and PM_{2.5} concentration may continue to exceed air quality criteria from time to time but within range of historically measures days above criteria excluding extraordinary events.	Impacts of continued exposure to dust and decreased air quality	- Continued operations of air quality monitoring network and best practice measures. 2 new mitigations for the Project - Review of existing air quality monitoring locations - More structure water tank cleaning and filter system installation program for private residences within 4km of proposed mining area. Mitigated significance: Medium	- Reduce the project mine plan to avoid mining within gas Domain 1 at HVO North - Reduce the proposed life of mining operations at HVO North by five years, from the end of 2050 to the end of 2045. - Reduce the proposed life of mining operations at HVO South by three years from the end of 2045 to the end of 2042. - Reduce the proposed maximum annual production limit at HVO South from 18 Mtpa to 13 Mtpa. - Propose a limit to the maximum annual ROM coal production for the HVO Complex of 26 Mtpa, a reduction of 16 Mtpa. - Remove approval for the construction and operation of the Lemington Coal Preparation Plant and associated rail facilities.	In 2021, the local area had higher proportions of people with asthma (10%) when compared NSW (7.8%). The highest prevalence was in Muswellbrook SA2 (11.3%) and Camberwell SAL (10.8%). This trend continued in the regional area and area of reference, which has proportions of 9.8% and 10.1% respectively. Rates of other lung conditions (including COPD or emphysema) were slightly higher throughout the local area (2.0%), regional area (2.0%), area of reference (2.3%) when compared to NSW (1.7%). Of the study area, highest proportion of lung conditions was reported in Maison Dieu (3.8%), which was more than double NSW. There were 14 objections received raising concerns regarding impacts of continuing poor air quality, as a result of the Project, on health. Concerns were also raised relating to the use of existing management measures to manage dust, which were claimed to be insufficient and fail in periods of dry weather and high winds, and it was claimed that the nominated efficiencies of proposed management measures are not supported by evidence. Since EIS submission, 9 complaints were made relating to dust, blast dust, fumes or air quality.	The EIS Contamination Assessment found that there was not an unacceptable risk to human health. The amendment is expected to result in a lower air quality risk than the original Project. This is because the amendment significantly (approximately 23%) reduces the quantities of material (overburden and coal) moved in each year. Reduction to the proposed life of mining operations by five years will reduce the duration of the impact. As such, particulate matter emissions and impacts are expected to be lower than originally assessed. Mitigated significance remains as medium due to ongoing operations. Mitigated significance: Medium	No change Air quality to continue to be monitored. Activities that contribute to air quality impacts to be proactively modified by HVO with the results of monitoring programs to be provided to the community and stakeholders. Where exceedances occur, feedback to be provided in a timely manner to residents as to what resolution measures will be adopted.

Impact category	EIS SIA and HVO North Amendment Report				This amendment		
	Original project activity/factor	Original impact identified	Original management measure proposed and mitigated significance	Changes to project activity/factor (amendment)	Latest baseline	Changes to impact and significance level	Changes to management measures
Surroundings	- HVO South significantly more visible from private dwellings and local road network – eastern part of Chestnut Pit overburden emplacement area (currently in rehab and revegetation) and transmission line infrastructure (traverse project area). - HVO North visibility limited to passing motorists on New England Highway and partially obstructed views from private dwellings off Jerry Plains Road (approx. 4.7km away)	Impact on changes to visual amenity	- Additional mitigation measure during construction not warranted given significant impacts associated with project construction are not predicted. - During operations, disturbed areas will continue to be progressively rehabilitated, and visual impacts will continue to decrease as a result. - Investigate feasibility of planting vegetation adjacent to realigned Lemington Road. Mitigated significance: Low	Minor changes to mine plans, including changes to pit progression, fleet composition, mining depth, and project duration with potential to alter visual amenity.	6 submissions objecting to the Project raised concerns relating to visual impacts on Coolmore and the Hunters thoroughbred breeding activities at Jerrys Plains. Additional viewshed analyses have been conducted and results were documented in the Submissions Report (EMM, 2023b).	No change. Mitigated significance: Low	No change.
	Continuation of operations resulting in continued generation of night lighting which may be viewed by some surrounding rural residences	Impacts of lighting on nearby neighbours A number of complaints registered by nearby landholder regarding lighting.	- Continuation of current visual amenity control measures in place for HVO. - Measures to minimise light spill from project - Minimising night lighting where appropriate - use of unidirectional lighting techniques and adequate aiming - shielded fitting to limit lighting spill - ongoing engagement with surrounding stakeholders and provision of complaints and grievance procedure. Mitigated significance: Low	Minor changes to mine plans, including changes to pit progression, fleet composition, mining depth, and project duration with potential to alter visual amenity.	Between January 2023 to May 2025, two complaints were received relating to lighting impacts. Both complaints were received in 2023 and related to lights shining into residential properties. Process changes have been made as a result of the complaints to close the identified gap in operational practices.	No change. Mitigated significance: Low	No change.
Livelihood	Impact of ongoing operations on water resources with focus on cumulative impact of coal mining on ground and surface water quality and supply.	Impact on perceived decreased water quality impacting agriculture-based livelihoods Surface and groundwater assessments indicated that there will generally be minimal impact on water resources as a result of the Project with proposed management measures in place.	- Existing HVO Water Management Plan - Proposed Water Management System and series of erosion and sediment control measures during operational and rehabilitation phases. - Maintain complaints mechanism and ongoing communication of water monitoring results. Mitigated significance: Low	Minor changes to mine plans, including changes to pit progression, fleet composition, mining depth, and project duration has potential to change perceived water quality impacting agriculture-based livelihoods.	Submissions objecting to the Project raised concerns regarding the risk of impacts from the Project to the Hunter River, the Hunter River alluviums, and groundwater drawdown impacts on private bores and groundwater dependent ecosystems.	The Water Assessment concluded that there is no predicted impact to third-party groundwater bores. The Water Assessment also found that discharge is not expected to impact surface water quality or change beneficial uses. Mitigated significance: Low	No change.

8 Cumulative assessment

As stated previously, the assessment of the amendment has been conducted in an environment where substantial change has occurred since the EIS SIA was prepared. Multiple non-resource projects have progressed or are planned in the local and regional area. Cumulative social impacts such as increased traffic, road safety concerns, amenity and health and wellbeing impacts relating to nearby projects are being experienced on an ongoing basis in the local area (see Appendix B).

This section considers the potential cumulative impacts of surrounding projects which are either proposed or are anticipated to close in a timeframe that overlaps with the Project. A community may experience cumulative impacts when multiple projects occur in a similar timeframe or are located in a similar area to other projects.

8.1 Cumulative projects

There are currently 15 active coal mines across the Hunter Valley. Several mines have closed since the EIS SIA was submitted, such as Muswellbrook Coal Mine, Liddell Coal Operations, Integra Underground Mine and Bulga Underground. Others have recently had their life extended with the approval of continuation projects, such as the Ravensworth Underground mine at the Ashton Mine Complex and Mt Arthur Coal Operations near Muswellbrook.

The construction and operation of non-resource sector projects such as energy transmission, solar and wind projects, and road infrastructure in the Singleton and Muswellbrook LGAs, which intersect with the construction and operation of the Project, are also relevant to the assessment of cumulative impacts. Appendix B provides a list of cumulative resource and non-resource projects in the local and regional area.

8.1.1 Cumulative Construction impacts

i Cumulative construction workforce demands

Assuming a 'worst case' scenario, and all Projects identified in Appendix B occur as scheduled, the cumulative requirement for construction labour in the timeframe proposed for the amended Project (2027–2029) is presented in Figure 8.1.

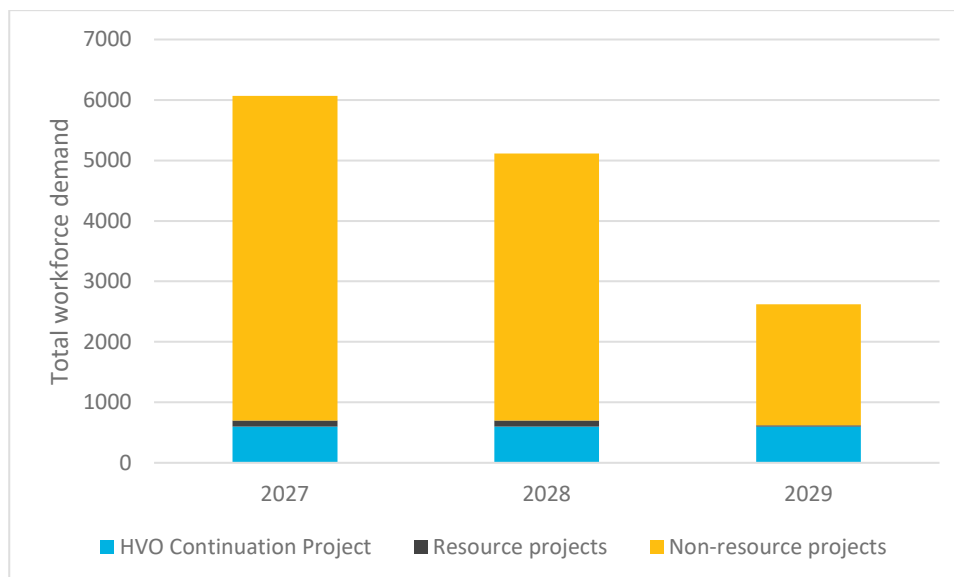


Figure 8.1 Cumulative construction workforce demand

Total cumulative construction labour equates to a peak of 6,066 construction workers in 2027. This includes 600 construction workers for the amendment and 5,466 construction workers for other projects. The contribution of the Project to estimated peak cumulative construction demand in 2027 is approximately 11.3%.

In this EIS SIA, construction labour was expected to peak at 1,909. These numbers have since increased substantially on account of the nation-wide transition to renewables, which is prominent throughout the Hunter region due to the progression of the Hunter-Central Coast Renewable Energy Zone, which spans from Muswellbrook to Newcastle. In Singleton and Muswellbrook, there are currently 20 proposed or approved non-resource projects which will contribute to cumulative construction demand, of which 17 are renewable energy generation or storage and two are transmission projects.

8.1.2 Employment and population change

As identified in the EIS SIA, population change occurs when there is a need to bring workers into an area to meet labour requirements. The number of construction workers required for the amendment is unchanged, however since the EIS SIA, there have been several non-resource projects proposed with high construction workforce numbers. As outlined above, non-resource projects are estimated to require 5,366 construction workers in 2027.

Of non-resource projects, three of the proposed projects are large projects spanning multiple local government areas. Of these, two are transmission infrastructure projects (the Hunter Transmission Project and the New England REZ transmission Project) and one is a large gas pipeline (the Hunter Gas Pipeline). These projects contribute to 3,250 of the cumulative workforces in 2027. Due to these projects spanning large geographies, it is unlikely that a high proportion of construction workers will be required in the regional area at once and therefore are unlikely to significantly contribute to cumulative impacts on the Project as amended.

Other non-resource projects are in the renewable energy and storage sector, as well as several infrastructure projects. These projects will contribute to a peak of 1,766 construction workers in 2027.

The EIS SIA estimated that 30% of the cumulative construction workforce would need to be sourced from outside the region and area of reference. Using this measurement, the temporary influx of the peak cumulative construction workforce would result in approximately 1,774 workers. This would result in a 4.3% increase to the regional population and a 0.5% increase to the area of reference. This is based on the assumption 'worst case' which is unlikely due to the geographic disbursement and potential construction delays of proposed projects. Although there has been an increase in construction workforce demand due to cumulative projects, the contribution of the amendment regarding construction workforce remains unchanged. The EIS SIA concluded that there would not be significant population change due to cumulative demand for labour.

i Competition for labour

The EIS SIA identified that the cumulative peak demand for up to 1,909 construction workers between 2023–2028 could affect existing businesses and initiatives which require similar skills. This has since increased to a cumulative demand of 6,066 construction workers between 2027 and 2029.

The EIS SIA outlined the tight labour market in the Hunter region is a result of increased demand and unstable staffing levels. As outlined above, the majority of construction workforce demand is derived from non-resource projects. As such, it is unlikely that labour demand will affect the amendment due to differing skill requirements across industries. This is based on the assumption that non-resource projects such as renewable energy technologies and transmission infrastructure will require a large number of specialised workers such as electrical and mechanical engineers. Therefore, it is unlikely that demand for skilled workers will overlap significantly between the resource and non-resource construction industries.

However, as assessed in the EIS SIA, the cumulative impact of a high demand for skilled workers in the region throughout 2027-2029 may result in competition of labour, impacting local construction and trades businesses and livelihoods.

ii Housing and accommodation

There have been changes in the availability of rental and short-term accommodation since the EIS SIA, however housing remains constrained. It is likely that the amendment will require housing for up to 180 workers during peak construction, which remains unchanged since the EIS SIA. This may put a further strain on the availability of rental housing and short-term accommodation.

The EIS SIA found that if 30% of the peak cumulative construction labour force for all cumulative projects were to require accommodation in the Singleton LGA and Muswellbrook LGA, this would equate to demand for up to 573 rooms of accommodation. The increase in proposed projects means that this number has increased to 1,774 rooms. As outlined in section 5.4, the regional area has approximately 89 rental properties available. There were an additional 433 short term accommodation listings in Muswellbrook and Singleton with a weekday occupancy rate of 90%.

The Muswellbrook Shire and Singleton Council Local Housing Strategies both identify that the dominance of temporary workers in the areas has historically influenced demand for housing. Singleton Council outlined that demand for housing in the rental market increases competition with local residents, and as such increasing the amount of housing aimed at short-term stays and temporary workers would reduce pressure on market rental dwellings and contribute to reducing rental stress. The Project will utilise short term accommodation for non-local workers rather than rental accommodation, lessening the cumulative impact on the regional rental market.

It is unlikely that cumulative construction demand will significantly impact local housing as the majority of non-resource projects, including the large transmission projects, will house their construction workforce in accommodation camps. Additionally, projects with large construction workforce numbers (Hunter Transmission Project, New England REZ Transmission Project, and Hunter Gas Pipeline) are likely to have a geographically dispersed workforce across a number of local government areas, therefore impacts are unlikely to disproportionately impact Muswellbrook and Singleton.

iii Traffic

There are a number of non-resource projects in the regional area that are anticipated to have overlapping construction phases and thus have a cumulative impact on traffic congestion and potentially on road safety. While the Singleton Bypass project is likely to be completed in 2026, specific projects to note in regard to cumulative traffic impacts in close proximity to the Project include the Hunter Transmission Project and Maison Dieu Solar Farm.

iv Social infrastructure

While it is expected that first aid services will be provided for construction workers for all projects, health services such as general practitioner (GP) and emergency services will likely experience elevated demand with construction phases for multiple non-resource SSD projects occurring concurrently during 2027-2029.

The updated social baseline suggests increased availability of GP services in the local and regional area, with 37 GP services available in 2024 compared to 16 GP services in 2021. However, total cumulative construction labour equates to 6,066 workers between 2027 and 2029, compared to 1,909 in the EIS SIA. While transmission projects disperse workers across multiple locations, other cumulative SSD projects are likely to place significant demand on health and emergency services in the local area.

v Amenity

Potential cumulative impacts to regional amenity may occur due to the number of SSD projects in the region, as well as the proximity of projects to nearby townships. Projects with potential to generate cumulative amenity impacts include Warkworth Mine, Mt Thorley Mine and United Wambo Open Cut Mine.

Key issues raised by stakeholders through complaints to the Project relate to dust, noise and vibration and road safety impacts from mining operations throughout the local and regional area. Impacts felt during ongoing operations for existing mining projects may intersect with amenity impacts during construction phase of the Project and non-resource projects.

8.1.3 Cumulative operational impacts

i Cumulative operational mining workforce demands

The below figure displays operational workforce for all cumulative projects including both resource and non-resource projects as listed in Appendix B. Assuming all projects identified occur as scheduled, the cumulative requirement for operational labour in the timeframe proposed for the Project's operations (2027–2045) is presented in Figure 8.2.

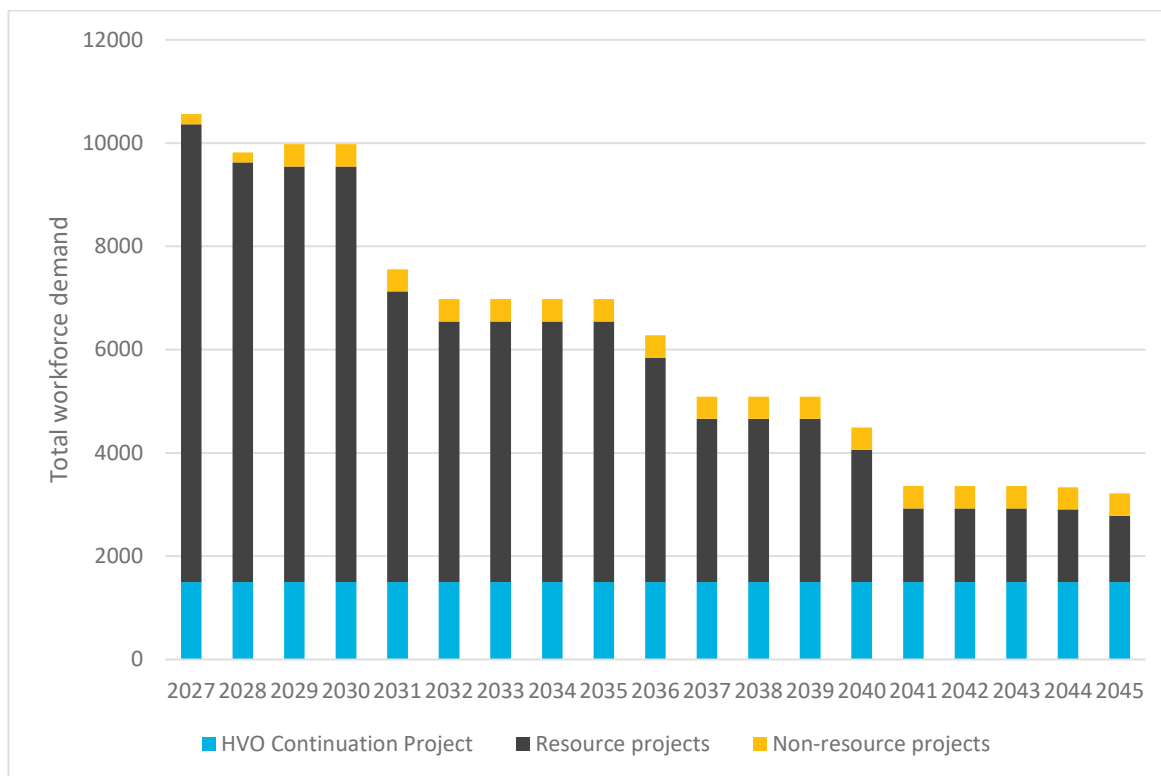


Figure 8.2 Cumulative operations demand

Peaking in 2027, the cumulative labour demand equals approximately 10,565 operational workers. This includes 1,500 operation workers for the Project, and 9,065 workers required for other projects. Approximately 8,867 of cumulative demand will stem from resource project operations in 2027, with a further 198 for non-resource projects. The operational workforce for non-resource projects is expected to peak in 2029, with 432 workers.

Labour demand is projected to lower over the next ten years to 6,219 in 2035 with 93.1% of the workforce share in resource projects. Due to the low operational workforce demand for non-resource projects, mine projects are expected to contribute to greater workforce demand. It is expected that 432 workers will be required for the operation of non-resource projects in 2035, or 6.9% of total cumulative demand.

ii Employment and population change

As outlined in the EIS SIA, there are a number of mines closing in the regional area leading up to 2030, with a number of mines already closed, having ceased coal extraction. This includes Liddell Coal Operations, Integra Underground, and Muswellbrook Coal. The remainder of coal mines are scheduled to close leading up to 2050. Liddell Power Station ceased operations in 2023. However, several mines have proposed extensions including Mount Arthur, Chain Valley, Maules Creek and Rixs Creek. The Future Jobs and Investment Authorities Issues paper noted that the impacts of a decline in coal mining in the Hunter region will likely be concentrated between 2030 and 2040 with most coal mines and power stations expected to close during this time (Department of Regional NSW, 2024).

Non-resource projects will not contribute to operational workforce demands due to low required workforce numbers. The Hunter Gas Project is the largest contributor to non-resource operational jobs (200 workers); however, this is unlikely to be concentrated in the regional area due to the geographic extent of the project, spanning from Southwest Queensland to Newcastle.

Mining workers make up the largest proportion of workers in the regional area, with 3,751 mine workers in Muswellbrook LGA and a further 6,817 in the Singleton LGA, totalling approximately 35.4% of all jobs in the sub-regional area (REMPPLAN, 2025). The mining industry brings a temporary workforce in the form of DIDO and FIFO workers who live in Muswellbrook or Singleton part-time (Muswellbrook Shire Council, 2024, p. 18). Approximately 70% of mine workers did not live in the regional area (REMPPLAN, 2025).

iii Housing and accommodation

Housing and accommodation in the regional area is connected to mining project activity. Many resource projects in the regional area are continuations of current operations. Bringing forward several mine closures has potential to reduce demand for housing in the local and regional area which may reduce house prices but also have a positive impact for low-income and vulnerable people. A large portion of non-resident workers with existing housing outside the local area limits the change in demand for housing in the local area.

Non-resource projects having significantly smaller operational workforces. It is not anticipated that the operational workforces for these projects will significantly change the demand for housing and accommodation.

iv Social infrastructure

The demand for health and community services in the local area is not expected to significantly change as a result of the change in cumulative context during operations phase. Lower demand for local services is expected earlier due to the earlier closure of several mining operations.

v Amenity

Cumulative amenity concerns raised by stakeholders through complaints to the Project related to dust, noise and vibration and road safety impacts from mining operations throughout the local and regional area. Multiple projects near each other can result in cumulative amenity impacts that impact the way a landscape and environment is experienced. Cumulative amenity impacts can arise from the presence of similar projects that may have a low impact individually, but when experienced together, can have a significant amenity impact on the local and regional environment.

9 Conclusion

No new impacts or benefits were identified as a result of the assessment of this SIA Amendment. It was assessed that the amendment will not result in any change to the majority of the impacts and benefits assessed in the EIS SIA (EMM, 2022a) and the first Amendment Report (EMM, 2023a) and therefore do not require further investigation.

Of the 18 impacts and 10 benefits identified in the EIS SIA, seven impacts and 10 benefits were assessed as not relevant to the scope and do not require further investigation (Table 4.2). There were 11 impacts identified for further investigation (Table 4.3). These impacts relate to amenity including traffic, generation of dust, noise and vibration, and visual landscape, impacts relating to community cohesion, housing and accommodation, and perceived water quality impacts.

The assessment of the amended Project has been conducted in an environment where substantial change has occurred since EIS submission. At least 15 non-resource projects are planned in the local and regional area, supporting the transition to renewable energy. Despite the project's contribution to cumulative workforce numbers remaining the same, the cumulative impact will be greater due to the change in the cumulative environment as a result of other projects. A quantitative assessment of changes to construction and operation workforce was conducted including employment and population change while a qualitative assessment was conducted for competition for labour, housing and accommodation, traffic, social infrastructure and amenity. While the Project's contribution to cumulative impacts as regards to construction workforce remains the same, there has been a substantial increase in construction workforces of planned non-resource projects since EIS submission.

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Appendix A

Curriculum vitae



Caroline Wilkins

Associate Social Scientist
EMM Consulting Pty Limited

Professional Overview

Caroline is an Associate Social Scientist in the Social Assessment and Performance team at EMM. Caroline has over 20 years' experience designing, planning, implementing and evaluating major social programs in challenging operating contexts. She brings extensive knowledge and demonstrated application of social science methodologies and development strategies. Her skill set includes social impact assessment, social research, human rights assessments, community and stakeholder engagement, monitoring and evaluation, risk management, strategic planning, project management and reporting. Caroline provides practical insightful advice to clients to development and implementation of social risk mitigation and management.

Caroline has worked in a range of social settings, having led projects in Australia and internationally. Caroline is a critical thinker with highly developed problem-solving skills.

Qualifications and licences

Master of Social Science (International Development), RMIT University
Bachelor of Arts/Bachelor of Commerce, Deakin University
Member, Australian Evaluation Society
Member, International Association of Impact Assessment (IAIA)
Associate Member, Australasian Institute of Mining and Metallurgy (AusIMM)

Specialisation

Social Impact Assessment
Delivery of social performance advice
Community and Stakeholder Engagement
Monitoring and evaluation

Representative experience

Energy

- **Pioneer-Burdekin Pumped Hydro Energy Storage (PHES) project, 2024, Queensland Hydro, QLD** Pioneer-Burdekin PHES was a proposed 5,000 MW, 120-GW hour long duration PHES project situated in the Pioneer Valley, 70km west of Mackay. Provided technical support for the preparation of Scoping Report and Social Assessment and Management Plan (SAMP) for Exploratory Works. Tasks included review of project documentation, define project assumptions, social and health impact assessment (SHIA) study area definition, preparation of stakeholder and community profiles, and preliminary identification of social and health impacts in line with the Queensland Social Impact Assessment (SIA) Guideline (2018).
- **Oven Mountain Pumped Hydro Energy Storage Project (OMPS), OMPS Pty Ltd, 2022-2025.** Lead author of the Social Impact Assessment (SIA). The project involves the construction of a major new pumped hydro energy storage project situated 60 km south-east of Armidale, NSW. The project was declared Critical State Significant Infrastructure (CSSI) and will produce 900MW of firm energy storage. Responsibilities included planning and scheduling, scoping, preparation of the social baseline, extensive community consultation and stakeholder engagement including 80 in-depth interviews and two community surveys, data analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting. An Amendment Report was also included in scope to capture changes to the design.
- **Social impact evaluation (SIE), social impact assessment (SIA) and social impact management plan (SIMP), Pilbara Decarbonisation Program, Fortescue Metals Group (FMG), WA,** FMG is undertaking an industry leading program to decarbonise its iron ore mining operation in the Pilbara region, Western Australia. The USD\$6 billion program includes various projects such as wind, solar, battery, transmission lines, port upgrades, green fleet (including rail and sea) and road systems. The SIE focused on identifying social value at global, national, regional and local scale. The SIA provided an assessment of social impacts and benefits for individual projects, and the program as a whole.
- **Muswellbrook Pumped Hydro Energy Storage Project, AGL/Idemitsu, 2023-current** Lead author of the Social Impact Assessment (SIA). The project involves the construction of a new pumped hydro energy storage project on a former coal mine site near Muswellbrook, NSW. Responsibilities include planning and scheduling, preparation of the social baseline, stakeholder engagement including in-depth interviews, data analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting.
- **Deegee Solar and Battery Project, ACEN Australia, NSW, 2024-current** Lead author of the Social Impact Assessment (SIA). The project involves the construction of a major new solar and battery storage project situated approximately 5 km south-east of Uralla, NSW. The project will produce 320MW of energy and two hours of firm storage.
- **Koorakee Energy Hub, Social Scoping Report, Squadron Energy, NSW, 2023-2024** SIA Lead for the scoping report. The project involved construction of 167 wind turbine generators (1 GW), 2.2 million solar panels (1 GW), battery storage with a capacity of 1 GW and ancillary infrastructure situated 10 km from Euston, NSW. Scoping involved planning, identification of social locality, preparation of social baseline, engagement with key stakeholders, early identification of potential social impacts and preparation of a Social Impact Scoping Report and scoping worksheet.
- **Yambla Range Wind Farm, Social Scoping, Tetris Energy, NSW, 2024-current** SIA Lead for the Social Scoping phase. The project involves construction of 28 wind turbine generators and ancillary infrastructure 30 km north of Albury, NSW. Scoping involved planning, identification of social locality, preparation of social baseline, early identification of potential social impacts and preparation of a SIA Impact Scoping Report and scoping worksheet.

- **Balala Wind Farm Scoping Report, EDF Renewables, Uralla, NSW, 2025.** The project involves construction of 50 wind turbine generators and ancillary infrastructure near Uralla, NSW. Technical inputs included identification of social locality, preparation of social baseline, early identification of potential social impacts and preparation of a social scoping chapter and scoping worksheet.
- **Boorolong Wind Farm Social Scoping Report, Squadron Energy, NSW, 2022-current.** The project involved construction of 70 wind turbine generators and ancillary infrastructure near Armidale, NSW. Technical inputs included identification of social locality, preparation of social baseline, early identification of potential social impacts and preparation of a social scoping chapter and scoping worksheet.
- **Muswellbrook Solar Farm, ESCO Pacific, NSW 2022-2023** Lead author of the Social Impact Assessment. The project involves construction of a solar farm on the now closed Muswellbrook coal mine in Muswellbrook, NSW. Tasks included planning and scheduling, scoping, preparation of the social baseline, SIA stakeholder engagement, data analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting.
- **Wellington Battery Energy Storage System (BESS), Social Impact Assessment (AMPYR Australia) 2022**

Mining and metals

- **Julia Creek/Richmond Critical Minerals Zone (CMZ) Social Baseline Study, Department of Resources, QLD 2024-2025** Prepared a social baseline study and cumulative assessment framework to identify potential impacts on and benefits for communities during the development of critical minerals projects in the CMZ. Conducted extensive engagement with 30+ stakeholders including Councils, proponents, local businesses, community groups and service providers in Mount Isa, Cloncurry, Julia Creek, Richmond and Hughenden.
- **Wimmera Project SIA, Iluka Resources, VIC, 2022-current** SIA Lead and project manager. Caroline is leading all phases of the Social Impact Assessment for the proposed new critical minerals mine near Horsham, Victoria. Responsibilities include client liaison, planning and scheduling, preparation of the social baseline, extensive stakeholder engagement, data analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting.
- **Human rights risk assessment, Townsville Energy Chemicals Hub (TECH) Project, QLD 2023.** The project involves the design, construction and operation of a sustainable, high-purity battery materials refinery in Townsville, Queensland. Cost of construction is estimated at \$2.1 billion. The assessment focused on supply chains, risk factors such as supplier profile, high risk geographies, product complexity and high-risk procurement categories. Recommendations were made to establish policy, systems and processes to assess, monitor and report on human rights issues and risks and establishment of a human rights (supplier) due diligence process.
- **Integra Underground Mine Closure SIA, Glencore, Singleton, NSW, 2022-23.** Lead author and project manager. Caroline led all phases of the Social Impact Assessment for the coal mine closure including client liaison, planning and scheduling, preparation of the social baseline, gathering of primary data through the survey of mine employees and supplier businesses, stakeholder engagement and field study, data

analysis, impact identification and risk assessment, development of social impact mitigation framework and reporting.

- **Ok Tedi Mining Limited, Social Closure Transition Framework and Strategy, Australia, 2023.** Co-author and project manager. Caroline worked closely with the OTML Social Sustainability team to develop a social closure framework and strategy to support mine closure planning. Responsibilities included reviewing existing business frameworks, preparing a literature review, review of key documentation and conducting in-depth interviews with key stakeholders including various OTML teams, local suppliers and Papua New Guinea government officials. Components include future of the mine-owned town (Tabubil), public assets and services transition plan, OTML employees and contractors transition, role of the Ok Tedi Development Foundation (OTDF), post closure environmental sustainability, community investments and trust funds, and infrastructure development/(Tax Credit Scheme (TCS).
- **Sustainability Report, Ok Tedi Mining Limited,** technical assistance for Annual Sustainability Report 2021, 2022

Infrastructure

- **Line 965 Armidale – Lower Creek, NSW, 2023-current** Lead author for social scoping chapter and Social Impact Assessment report. The project involves upgrading Transmission Line 965 to enable energy produced by the Oven Mountain Pumped Hydro Energy Storage Project to be transferred to the national electricity grid.
- **Dungowan Dam EIS and pipeline REF, Water Infrastructure NSW, 2022** SIA technical input for the Social Impact Assessment. The project was declared Critical State Significant Infrastructure (CSSI) and included a larger new dam downstream of the existing Dungowan Dam and a replacement pipeline. The SIA included identification of potential social impacts, and mitigation approaches to inform forward project planning and construction.



Samantha McCrea

Associate Director Social Performance
EMM Consulting Pty Limited

Professional Overview

Samantha is a seasoned social performance and consulting leader, having worked across Australia and Asia for over ten years collaborating with a range of companies from financial institutions through to private sector mining, oil and gas and renewables companies. She has over 20 years' experience focused on consulting, specializing in the consideration of community impacts, human rights and modern slavery, green energy transition, stakeholder engagement and social risk management. She spent over 10 years living and working in Indonesia advising a range of mining, oil and gas and renewables clients on ESG matters. Sam has worked in South East Asia for over 10 years supporting companies such as Weda Bay Nickel, PTFI, Adaro Energy and Vale Indonesia to improve their social performance. Of note, she supported PTFI in its 2019 review of its Partnership Fund. As such as has a good understanding of the operations in Papua, the mine context, key stakeholders and local challenges.

Qualifications and licences

Master of Science (Environmental Technology), Imperial College London, 1999-2000

Bachelor of Engineering (Chemical Engineering), University College London, 1994-1998

Specialisation

Social Performance
Business Development
Project Leadership
Stakeholder Management
People Leadership & Development
Sustainability/ESG Advisory

Representative experience

Fortescue Energy, Global Social Performance Manager

- Responsible for leading the governance and compliance aspects of our global developments with respect to communities; this role required a high level of collaboration across all sustainability and project functions. Key responsibilities included development, implementation training of "S" standards and guidance notes for all global projects across the business. Design of corporate community investment and funding processes and oversight of corporate stakeholder relations.

JLL Asia Pacific, Energy & Sustainability Solution Lead

- Led the business development activities for the sustainability team with a focus on decarbonization and ESG across south-east Asia within the real estate sector. Responsibilities included collaborating with APAC business functions and existing clients to identify ESG opportunities, lead the development of proposals and track sales and opportunities pipeline.

ERM Indonesia, APAC Social Performance Partner

- Responsible for the implementation of projects led by ERM in Indonesia and South East Asia for a range of sectors including renewables, power, financial, mining and oil and gas. Samantha led a team of 20 plus social performance consultants and was responsible for business operations and performance in Indonesia. Her role entailed advising a range of lenders and developers on project development, to ensure community risks were identified and mitigated to acceptable levels that adhere to relevant international standards whilst managing reputation risks. She also was the businesses' social performance lead for Asia Pacific, advising clients on specialized matters to embed

and operationalize sustainability into business and build the regional team's capacity. She worked closely with multinational clients including Engie, Shell, Chevron, Freeport McMoran, Macquarie Group, ANZ, IFC and Sinarmas as well as numerous government entities, research and lobbying bodies (including the Indonesian Business Council for Sustainable Development) and NGOs. I also held the role of sustainability lead internally across Asia Pacific, executing and driving the development of action plans, sustainability initiatives and employee awareness across ten countries.

ERM Australia, Australia Social Performance Lead

- Responsible for the delivery of a range of social studies across Australia and South East Asia for mining, power and oil and gas clients. Key clients included Rio Tinto, BHP Billiton, Woodside, BG, Origin and Wesfarmers all seeking approvals as well as to mitigate reputational issues and ESG impacts. Sam frequently participated and led numerous assessments, stakeholder consultation activities and due diligence projects across the region identifying risks, outlining actions to address risks and monitoring their implementation. She was accountable for the West Australian business KPIs, managing commercial aspects, leading existing and new client accounts as well as people recruitment and development and thought leadership with the industry.

ERM UK, Social Performance Consultant.

- Her primary role entailed participation in field works, gathering community data to inform the impact assessment process and reporting to clients on development risks and management measures. Clients included DFID, Chevron, Shell, BG, InfraCo and Shell. The strong foundation she gained during this time allowed her to fully comprehend the potential social impacts and risks associated with a range of projects, grow her understanding of international standards and enabled her to provide practical recommendations for mitigation/risk management. Whilst employed in the UK she worked in Mauritania, Angola, Nigeria, Ghana, Libya, Uganda, Zambia, Kazakhstan and Palestine.

Appendix B

Cumulative projects

B.1 Cumulative projects

Table B.1 and Table B.2 lists resource sector projects that will operate concurrently with the project.

Table B.1 Concurrent resource sector (coal) projects

	Construction / Closure timeframe	Construction workforce	Operational workforce
Mt Owen Continued Operations	Mining operations may take place until 2031.	n/a	510
Liddell Power Station – Future Land Use and Enabling Works Project	Ceased operations in 2023. Enabling works approved.	75-100	20
Ashton Mine Complex and Ravensworth Underground	Modification to both approvals recently approved, allowing processing of coal from Ravensworth Underground at the Ashton coal pit top area until 2035.	n/a	270
Rixs Creek South	Mining operations may take place until 2040.	n/a	375
Rixs Creek North	Current approval allows operation until 2035, with the mine currently seeking approval to continue until 2049.	n/a	254
United Wambo Open Cut Coal Mine	Scheduled to cease operations in 2027.	n/a	540
Wambo Coal Underground Mine	Scheduled to cease operations in 2025.	n/a	230
Dartbrook Mine	Scheduled to cease operations in 2027	n/a	200
Mt Thorley Continuation Project	Mining operations have been approved until 2044.	n/a	121
Warkworth Continuation Project	Mining operations may take place until 2036.	n/a	1,187
Maxwell Underground Coal Mine Project	Mining operations may take place until 2047.	n/a	430
Mangoola Coal Continued Operations	Mining operations may take place until 2030.	n/a	420
Bulga Open Cut	Mining operations may take place until 2035.	n/a	700
Mount Arthur Mine	Mining operation may take place until 2030	n/a	2,000
Mount Pleasant Optimisation Project	Mining operations may take place until 2048.	n/a	830
Bengalla Mine	Mining operations may take place until 2039.	n/a	600
Ravensworth Mine	Mining operations may take place until 2040	n/a	760
Total		100	9,447

Source: desktop research conducted via Major Projects Planning Portal and relevant official project websites (July 2025)

Table B.2 **Concurrent non-resource sector projects**

Project	Anticipated timeframe/Project life	Development type	Construction workforce	Operational workforce
Singleton Bypass	Completion expected in late 2026.	Road infrastructure project	1,300	n/a
New England REZ Transmission Project	Construction due to be completed for Stage One by 2031 and Stage Two by 2032.	Transmission infrastructure	1,250	Unknown
Hunter Transmission Project	Completion expected by 2028. 50 years (minimum)	Transmission infrastructure	700	Unknown
Restart Redbank Power Station	Construction expected to take 6-10 months 30 years operations	Electricity Generation – Solar	835	67
New England Highway - Muswellbrook Bypass	Construction expected to commence 2027 Completion expected late 2027	Road infrastructure project	Unknown	-
Muswellbrook Solar Farm	Approved 2025 Completion expected 2027 30 years operations	Energy generation – Renewables	200	6
Hunter Gas Pipeline	Expected start 2024 – route finalisation and secondary approvals ongoing	Gas supply infrastructure	1,300	200
Muswellbrook BESS	Construction due to be completed for Stage One by 2021 and Stage Two by 2032.	Transmission infrastructure	75	3
Muswellbrook Hospital Redevelopment Stage 3	Construction commenced 2025 Completion expected 2027	Infrastructure – Healthcare	Unknown	Unknown
Bowmans Creek Wind Farm	Construction expected to take 18 to 24 months 25 years operations	Energy generation – Renewables	156	15
Bowmans Creek Wind Farm Stage 2	Construction expected to take 18 to 24 months 30 years operations	Energy generation – Renewables	160	15
Maxwell Solar Farm	Construction expected to take 12 to 18 months, commencing 2021 30 years operations	Energy generation – Renewables	100	2
Upper Hunter Energy Park (previously Kyoto wind farm)	Construction expected to take 18 months, commencing 2025 24-30 years operations	Energy generation – Renewables	200	5
Hunter River Solar Farm	Construction expected to commence 2026 30 years operations	Energy generation – Renewables	350	10
Kayuga Solar Farm	Construction expected to take 18-24 months, commencing late 2025 30 years operations	Energy generation – Renewables	250	10

Project	Anticipated timeframe/Project life	Development type	Construction workforce	Operational workforce
Upper Hunter BESS	Construction expected to take 18-24 months 25 years operations	Transmission infrastructure	100	5
Upper Hunter South Solar Farm	Construction expected to take 12-18 months, anticipated to start 2025 35 years operations	Energy generation – Renewables	200	-
Denman Battery Energy Storage System	Construction expected to take 12-18 months (2026-27) 20 years operations	Transmission infrastructure	50	0
Edderton Solar Project	Construction expected to take 20 months	Energy generation – Renewables	450	15
Maison Dieu Solar Farm	Construction expected to take 18 months	Energy generation – Renewables	150	5
Dalswinton Sand and Gravel Quarry	Proposed expansion of existing operations	Extraction – sand and gravel	n/a	12
Richard Gill School – Modification 2	Modification relating to accessible car spaces	Infrastructure – Education	12	4
Richard Gill School – Modification 3	Modification increasing cap on student numbers from 50 to 70	Infrastructure – Education	12	4
Sandy Creek Battery Energy Storage System	Construction expected to take 12 months 30 years operations (minimum)	Transmission infrastructure	150	3
Muswellbrook Pumped Hydro	Construction expected to take 5 years, commencing 2026 100 years operations	Electricity supply	600	20
Liddell BESS	Under construction, expected completion 2025 20 years operations	Transmission infrastructure	150	3
McCullys Gap BESS	Construction 2026-2028 30 years operations	Transmission infrastructure	150	15
Total			8,900	419

Source: desktop research conducted via Major Projects Planning Portal and relevant official project websites (July 2025)

Australia

SYDNEY

Ground floor 20 Chandos Street
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE

Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE

Level 1 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

CANBERRA

Suite 2.04 Level 2
15 London Circuit
Canberra City ACT 2601

ADELAIDE

Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE

Suite 8.02 Level 8
454 Collins Street
Melbourne VIC 3000
T 03 9993 1900

PERTH

Suite 3.03
111 St Georges Terrace
Perth WA 6000
T 08 6430 4800

Canada

TORONTO

2345 Yonge Street Suite 300
Toronto ON M4P 2E5
T 647 467 1605

VANCOUVER

422 Richards Street Unit 170
Vancouver BC V6B 2Z4
T 604 999 8297

CALGARY

700 2nd Street SW, Floor 19
Calgary AB T2P 2W2



[linkedin.com/company/emm-consulting-pty-limited](https://www.linkedin.com/company/emm-consulting-pty-limited)



emmconsulting.com.au