PEMBROKE

Olive Downs Coking Coal Project

Additional Information to the
Environmental Impact Statement

Section 23

Social Impact Assessment

23 SOCIAL IMPACT ASSESSMENT

Social Baseline

1. Provide further information (where available) on the following matters as part of the social baseline:

a. Local landholders in close proximity to the Project, including (but not limited to) details on household composition, lot sizes, maps of properties showing proximity to Project, whether they are in active production (grazing/cropping etc.), whether homesteads are inhabited etc. (Section 4.1.2 of Appendix H).

Eight properties are located within MLA 700032, MLA 700033, MLA 700034, MLA 700035 and MLA 700036 (Figure 23-1):

- Winchester Downs;
- Wynette;
- Iffley;
- Deverill;
- Vermont Park;
- Seloh Nolem;
- Willunga; and
- Old Bombandy

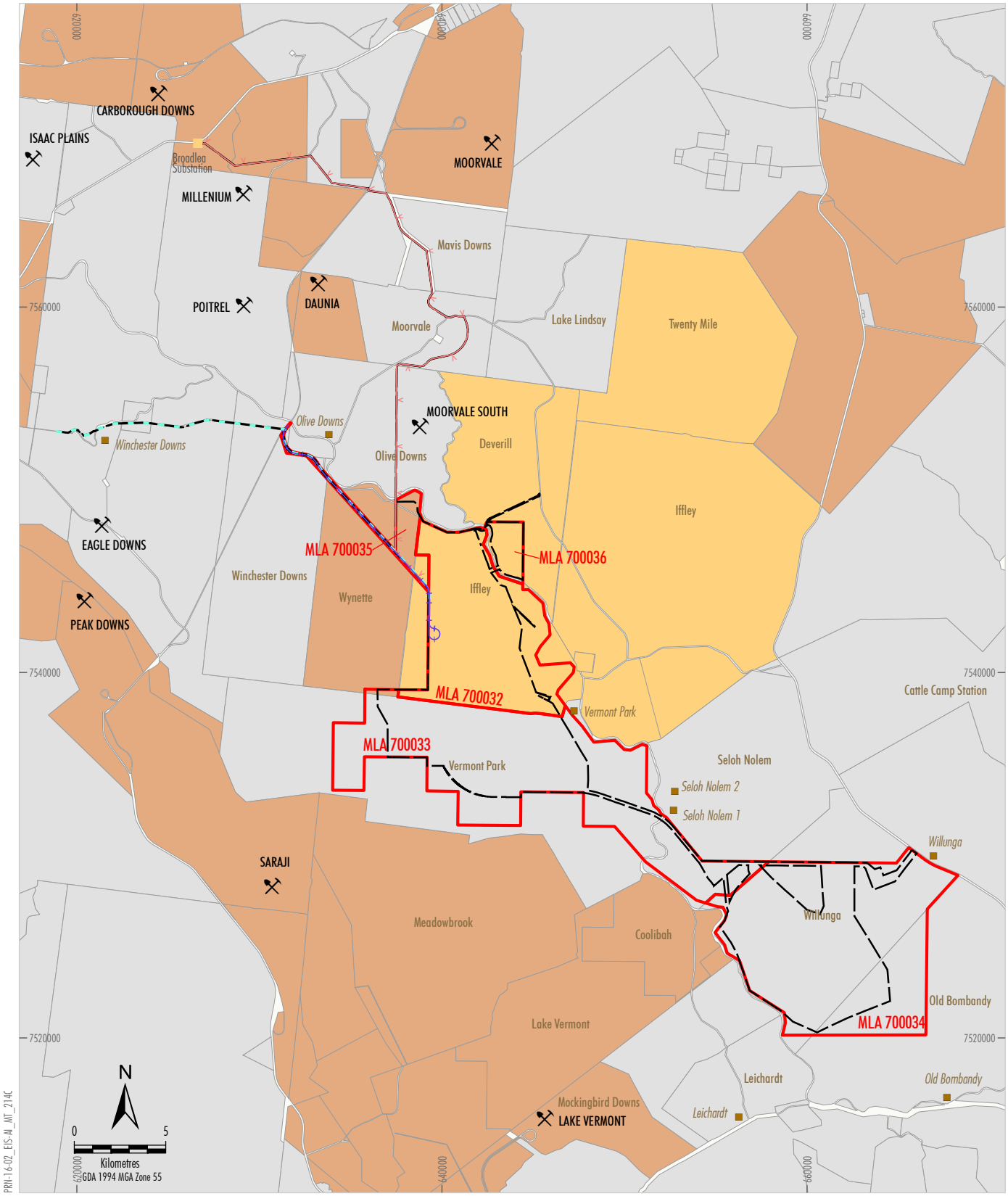
The size of the properties and the area within the Project Mining Lease Application areas are shown in Table 23-1.

Pembroke owns the Iffley, Deverill and Twenty Mile properties (shown in yellow on Figure 23-1). Whitehaven Coal owns the Wynette property (shown in orange on Figure 23-1, immediately to the west of Iffley). All other properties within the Project MLAs are privately owned.

All properties within the Project area have been largely cleared through past agricultural practices; however, some tracts of remnant vegetation exist, particularly along the riparian corridor of the Isaac River. Cattle grazing on native pastures is conducted on these properties.

Table 23-1
Properties within and adjacent to the Project Mining Lease Application Areas

Property Name	Approx. Area of Property (ha)	Approx. Area of Property within Disturbance Footprint (ha)	Approx. Percentage of Property within the Disturbance Footprint	Approx. Area of Property within MLA (ha)	Approx. Percentage of Property within MLA
Wynette	5,851	471	8%	604	10%
Iffley	25,644	4,823	19%	5,931	23%
Vermont Park	16,623	4,455	27%	8,180	49%
Seloh Nolem	8,640	319	4%	1,205	14%
Willunga	18,200	5,112	28%	7,562	42%
Old Bombandy	11,036	527	5%	2,135	19%
Deverill	6,455	492	8%	55	1%
Winchester Downs	21,108	54	<1%	552	4%



LEGEND

- Mining Lease Application Boundary
- Approved/Operating Coal Mine
- Dwelling
- Proposed Electricity Transmission Line
- Proposed Rail Spur
- Proposed Water Pipeline
- Approximate Extent of Proposed Surface Development
- Pembroke Owned Land
- Other Mine Owned Land
- Privately Owned and Other Land

Source: Geoscience Australia - Topographical Data 250K (2006)
Department of Natural Resources and Mines (2016)

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Tenure - Land Ownership

Figure 23-1

As shown in Figure 23-1, the Project's linear infrastructure components (i.e. the rail spur, water supply pipeline and ETL) would traverse:

- Winchester Downs, which is privately owned;
- Wynette, which is owned by Whitehaven Coal (as previously discussed);
- Olive Downs, which is privately owned but will accommodate the approved Moorvale South Mine; and
- Moorvale, which is privately owned.

Vermont Park (which is partly located within the Olive Downs South domain mining and infrastructure areas) and Seloh Nolem (part of which would be traversed by the conveyor between the Olive Downs South and Willunga domains) are owned by one landholder, with a property manager running these properties as a single operation. Cattle grazing on native pasture is conducted on the two properties.

The property manager and staff who operate the two properties live on Seloh Nolem in dwellings which would be located approximately 600 metres from the proposed infrastructure corridor between the Olive Downs South and Willunga domains. Noise and air quality impacts associated with the Project are predicted to comply with relevant criteria at these dwellings. Dwellings on the Vermont Park property are used temporarily for seasonal staff (e.g. during mustering). Pembroke has commenced negotiations with the owner of Vermont Park and Seloh Nolem regarding compensation for the impacts of the Project on the landholdings.

Part of the privately-owned Willunga property is located within the Willunga domain mining and infrastructure area. Cattle grazing on native pasture is conducted on Willunga. The Willunga property homestead is located on the eastern side of the Fitzroy Developmental Road, outside MLA 700034. Noise and air quality impacts associated with the Project are predicted to comply with relevant criteria at the dwelling. The Willunga property owner also owns other properties in the vicinity of the Project, including Cattle Camp Station to the north-east of the Willunga domain. Pembroke has entered into negotiations with the landholder regarding compensation for the impacts of the Project on the Willunga property.

A small part of the Old Bombandy is located within the Willunga domain mining area. The predominant land use is cattle grazing on native pasture with limited amount of pasture improvement with the establishment of Leucaena in some paddocks. Impacts to the Old Bombandy agricultural enterprise due to the Project are expected to be minimal, as the Project would only directly impact approximately 5% of the property and the homestead (which is occupied by a property manager) would be located approximately 5 km from the Willunga domain. Noise and air quality impacts associated with the Project are predicted to comply with relevant criteria at the dwelling. Pembroke has commenced negotiations with the owner of Old Bombandy regarding compensation for the impacts of the Project on the landholding.

A small part of the Whitehaven Coal owned Wynette property is located within MLA 700035. The Project rail spur and water pipeline would traverse the northern portion of the property. Cattle grazing on native pasture is conducted on Wynette. Whitehaven Coal purchased the property off Rio Tinto in 2018, and it is understood Whitehaven Coal intends to develop an open cut coal mine on the property, and within part of the adjacent Winchester Downs property, within MDL 183. There are no dwellings on the Wynette property. The Project rail spur and water pipeline have been designed to incorporate underpasses and fencing to control stock access. Stock and vehicles will be able to move under the rail spur in places between the southern part of the property and the Isaac River. Pembroke intends to compensate Whitehaven for the direct impacts to the property associated with the development of the Project.

Part of the Project rail spur and the western part of the Project water pipeline traverse the Winchester Downs property, within an existing road reserve. Cattle grazing on native pasture is conducted on Winchester Downs. Construction of the rail spur and pipeline within the road easement is not expected to have a significant impact on the existing agricultural productivity of the property or the health and wellbeing of the landholder. Notwithstanding, Pembroke intends to compensate the Winchester Downs landholder for the direct impacts to the property associated with the development of the Project.

Cattle grazing on native pasture is conducted on the Olive Downs and Moorvale properties. The alignment of the ETL corridor has been designed to minimise impact to the existing agricultural enterprises (e.g. by following existing road/easements and running parallel to the Moorvale South Project Mining Lease). Yurika (a State government owned organisation responsible for the construction of the ETL) will negotiate compensation arrangements associated with the construction of the ETL with the owners of the Olive Downs and Moorvale properties.

Other properties which are adjacent to the Project MLAs include (Figure 23-1):

- Meadowbrook and Coolibah, which are owned by BHP;
- Olive Downs (as previously discussed); and
- Leichhardt, which is privately owned.

The homestead on the Leichardt property is located approximately 5 km from the Project. Noise and air quality impacts associated with the Project are predicted to comply with relevant criteria at the dwelling. Pembroke will communicate with the property's owner prior to the Willunga domain being developed to identify and discuss any concerns regarding the MLA 700034 whose boundary is east of the Leichardt property.

The BHP-owned Meadowbrook and Coolibah properties are located beyond the Project MLAs and are not expected to experience any impacts to the existing cattle grazing agricultural practices.

b. Existing public infrastructure in the study area, including the infrastructure referred to in Section 5.5.2 of Appendix H, e.g. Eungella pipeline. Cross-reference other sections of the report, if appropriate.

Public infrastructure in the vicinity of the Project includes the local road network and the Eungella Pipeline network. Pembroke is in the process of establishing an agreement with the Isaac Regional Council for the maintenance and upgrade of sections of the local road network that would be impacted by the Project.

The Project would include the construction of a water supply pipeline that would connect to the Eungella Pipeline (Figure 23-1), which is owned and operated by SunWater. The Eungella Pipeline network (part of the Bowen Broken Rivers Scheme) supplies water from the Eungella Dam (located on the Broken River) to the towns of Collinsville, Glenden, Moranbah and Dysart, a number of coal mine, the Collinsville Power Station and several irrigated farms (Section 2.2.4 of the draft EIS).

Pembroke has formed an agreement with SunWater to connect to the Eungella Pipeline and for the provision of a water allocation for the Project. The connection to SunWater's regional water supply system, and the allocation of water to the Project will not affect existing supply arrangement for other users of the Eungella Pipeline.

c. Existing bores within the project area, referred to in Section 5.6.6 of Appendix H. Cross-reference other sections of the report, if appropriate.

A groundwater bore census was conducted as part of the Project Groundwater Assessment (Appendix D to the draft EIS [HydroSimulations, 2018]). The information collected in the groundwater bore census is presented in Section 6 of Appendix A of the Groundwater Assessment.

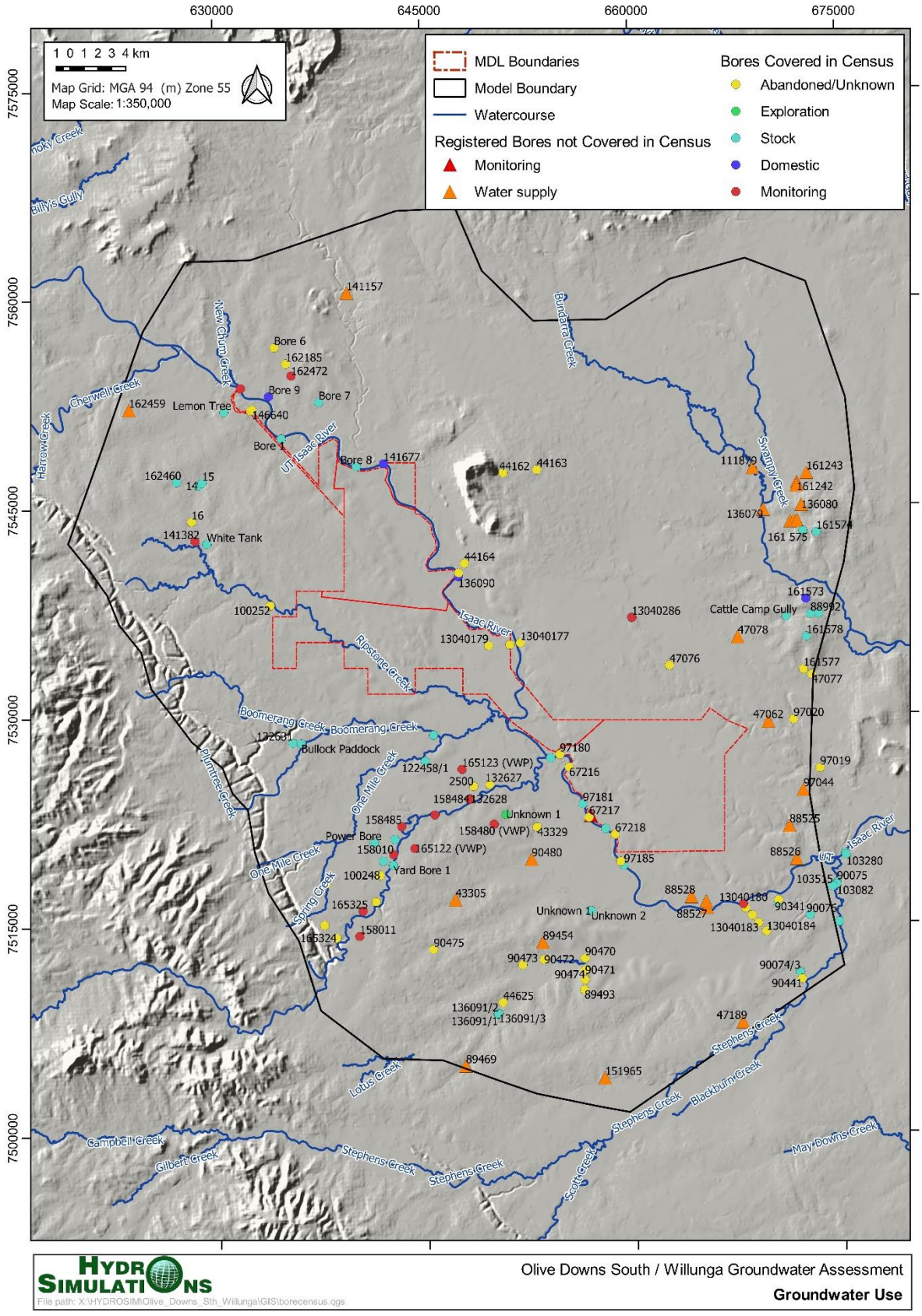
As described in Section 5.6.6 of the Social Impact Assessment, within the extensive area surveyed as part of the groundwater bore census, 49 bores were identified that were used for stock and domestic purposes and 6 are used for domestic water supply (Figure 23-2). Of these bores, 22 were equipped with a submersible pump with variable power sources (i.e. mains power, diesel motor or windmill). 25 bores were located near water storage tanks ranging in size from 20 kilolitres (kL) to 100 kL. Two bores were equipped with a float actuated switch to maintain tank water levels. There were limited details on abstraction volumes and yields, however some landholders reported maximum yields of around 1 to 2 litres per second (L/s) (Section 5.5 of the Groundwater Assessment).

Of the bores that were inspected, four were within 5 km of the Olive Downs South domain open cut pits. Three of these bores intersect the Isaac River alluvium, while one bore intersects the Permian coal measures at a depth of approximately 85 m (Section 5.5 of the Groundwater Assessment). Two of these bores are equipped with submersible pumps and are used for stock and domestic purposes. One of the bores intersecting the alluvium is not in use and not equipped with a pump (Section 5.5 of the Groundwater Assessment).

Seven of the inspected bores were within 5 km of the Willunga domain open cut pits, and all intersect the Isaac River alluvium. Three of these bores are equipped with submersible pumps (Section 5.5 of the Groundwater Assessment).

The Groundwater Assessment predicts that two of the privately-owned bores within the Isaac River alluvium and three bores within the Permian coal measures would experience a drawdown in groundwater level of more than 1 m (Section 7.2.1 of the Groundwater Assessment). The >1 m predicted groundwater drawdown at the five privately owned bores has the potential to impact groundwater supply from the bores. Pembroke would enter into a make-good agreement through consultation with the owners of these bores (e.g. resetting the pump set at an appropriate depth for water supply, accounting for the predicted groundwater drawdown), which will be detailed in the Water Management Plan being prepared for the Project. The Water Management Plan will describe the monitoring program that will be implemented to identify whether the Project is causing an impact on groundwater supply at these bores.

Figure 23-2
Groundwater Use



Source: HydroSimulations (2018).

d. the relevance of the information provided on mental health in the mining industry (Section 4.6.7 of Appendix H) e.g. what do the MCA study findings mean for the local study area? What are local organisations and other proponents in the local area currently doing to manage the mental health impacts of the mining industry?

A research report on the mental health of male mining workers published in 2014 noted qualitative research had found relationship and mental health difficulties amongst mining workers, primarily relating to long rosters, shift work, and (for non-resident workers) long absences from home. However, the researchers noted that speculation that miners may be at elevated risk of poor mental health outcomes was not well supported by empirical evidence (McPhedran and De Leo 2014). The findings of McPhedran and De Leo's research, based on analysis of data from the Household, Income, and Labour Dynamics in Australia (HILDA) survey, did not support the hypothesis that resources sector employment is associated with greater relationship/work-family stress, or with poorer mental and emotional health, relative to employment in other occupations. However, longer working hours were associated with measures of work-family stress.

Research by working on remote Australian mining and construction sites in South Australia and Western Australia during 2013-2015 found elevated levels of psychological distress in the remote mining and construction workforce, with workers aged 44 years or less, workers who had separated from their partner, and workers employed on compressed roster swings (2 weeks on/1 week off or 1 week on/1 week off) showing higher levels of distress (Bowers et al. 2018).

Australian Institute of Health and Welfare research indicates that 45% of Australians aged 16 to 85 will experience a common mental health disorder (such as depression, anxiety or a substance use disorder) in their lifetime. On the basis that mental illness is common, all employers including mining companies have a responsibility to ensure that workplaces support good mental health issues (AIHW, 2018).

The Mining Council of Australia (MCA) *Blueprint for Mental Health and Wellbeing* acknowledges that employers and industry can play a role in addressing mental health. The relevance of this blueprint to the local area, includes:

- the local workforce and communities are strongly linked to the mining industry, economically and socially;
- mental health is a key element of health and safety; and
- the workplace can play an important role in supporting the mental health and wellbeing of employees and therefore community wellbeing

Pembroke is committed to supporting the mental health and wellbeing of tis personnel, and will implement the following measures to ensure a mentally healthy workplace as noted in Section 6.4.7 of the SIA:

- developing personnel's skills to identify and respond to mental ill-health in the workplace;
- creating a culture that supports wellbeing, including programs to improve knowledge and understanding of mental health and peer support;
- encouraging the participation of Queensland Health staff in delivery of workforce health promotion strategies including those addressing mental health and reduced smoking, alcohol and other drug use;
- contracting an Employee Assistance Program provider to provide proactive support for mental health and family issues; and
- ensuring staff know that sick leave is available to attend to mental health or domestic violence issues.

With respect to other mining companies in the local area, BHP has a mental health programme[1] focussed on:

- building a strong mental health and wellbeing culture;
- enhancing the ability of management and other employees to identify and respond to mental health problems;
- preventing mental ill-health by addressing risk factors and giving people the skills to build resilience and positive mental health; and
- ensuring employees have access to resources and support when they return to work following illness.

These measures are similar in intent to those to which Pembroke has committed.

New Hope Group which is operating the Lenton Mine in the Isaac LGA has a peer support program which trains employees to assist workmates affected by personal and work challenges. This is the type of peer support initiative that Pembroke will implement for the Project.

Other mining companies in the Project region generally provide workforce access to Employee Assistance Programs and undertake a range of strategies promoting a healthy workplace.

As noted in SIA Section 4.9.5, mental health services in the project area are provided through the Moranbah District Mental Health Service, which also provides limited outreach services to other local towns. Their role includes community liaison and education. The Moranbah and Dysart Hospitals also play a role in supporting people with mental illness. Pembroke has committed to encouraging Queensland Health staff's participation in workforce health promotion strategies.

e. The number of police officers stationed at each police station identified in Table 4-42.

The Mackay Police Division's Western District includes the five Project study area towns plus Clermont and Glenden. There are 11 uniformed police officers in Moranbah, plus three Criminal Investigation Branch officers and two traffic policing officers serving the district. Middlemount and Dysart Police Stations are each staffed by two police officers, and Nebo by one officer.

Health and Community Wellbeing

1. Provide further information to understand the potential air and noise impacts on the health and wellbeing of local landholders, e.g. nuisance dust issues, sleep disturbance. Cross-reference other sections of the draft EIS that discuss unacceptable impacts on sensitive receptors, if relevant.

Air Quality

There are a number of existing dust sources in the vicinity of the Project that contribute to ambient air quality, including natural sources (e.g. wind erosion of non-vegetated areas, pollen and grass seeds) and anthropogenic sources (e.g. existing mines in the region, vehicle travel on unpaved roads and agricultural activities).

[1] ICCM. 2016. Improving employee mental health and wellbeing in the mining industry – Case Studies. Accessed at https://www.icmm.com/en-gb/case-studies/improving-employee-mental-health-and-wellbeing on 4 February 2019

Mining activities during the life of the Project have the potential to generate particulate matter (i.e. dust) emissions in the form of:

- Total Suspended Particulate (TSP) matter;
- Particulate matter with an equivalent aerodynamic diameter of 10 micrometres (µm) or less (PM_{10}) (a subset of TSP); and
- Particulate matter with an equivalent aerodynamic diameter of 2.5 µm or less ($PM_{2.5}$) (a subset of TSP and PM_{10}).

In Queensland, air quality is managed under the EP Act, the EP Regulation and the Environmental Protection (Air) Policy 2008 (EPP [Air]).

Table 23-2 summarises the air quality objectives in the EPP (Air) for protection of human health and wellbeing that are relevant to the Project. Section 4.5.2 of the Main Text of the draft EIS, and Appendix G of the draft EIS provide further information on the potential sources of particulate matter and relevant air quality criteria.

Table 23-2
Goals for Ambient Air Quality

Pollutant	Environmental Value	Averaging Period	Air Quality Objective/Criteria (µg/m³)	Number of Days of Exceedance Allowed per Year
$PM_{2.5}$	Health and wellbeing(1)	24 hour	25	N/A
		Annual	8	N/A
PM_{10}		24 hour	50(3)	5
TSP		Annual	90	N/A
Dust deposition	Amenity guideline(2)	Monthly	120 mg/m²/day	N/A

After: Appendix G.

Notes:

µg/m³ = micrograms per cubic metre. mg/m²/month = milligrams per square metre per month.

1 Air quality objective sourced from the EPP (Air).

2 As per DES' *Application requirements for activities with impacts to air* and *Model Mining Conditions* guidelines, not an air quality objective from the EPP (Air).

3 Not more than 5 days per year above the objective.

Air quality modelling conducted for various stages of the Project life has been used to identify the predicted impacts at nearby sensitive places (i.e. privately-owned dwellings) and inform the implementation of air quality management measures. General Project dust control measures that would be implemented for the Project include:

- watering of haul road surfaces and potential use of chemical suppressants;
- dust suppression systems on drill rigs;
- progressive rehabilitation of waste rock emplacements;
- water sprays on coal stockpiles, conveyor transfer points and the train load out bin; and
- enclosure of select coal crushing infrastructure.

Pembroke would also implement proactive and reactive dust control measures. These measures would include the use of weather forecasting and real-time measurement of dust levels and meteorological conditions to modify mining operations as required in order to achieve compliance with applicable air quality objectives at the nearest privately-owned receivers, thus protecting the health and wellbeing of the local landholders and air quality amenity at the dwellings.

Modifying mining operations could include the application of additional dust controls, an increase in the intensity of applied dust controls, reducing the intensity of particular operations or halting particular operations.

Dispersion modelling indicates modifications to operations would likely only be required during a small range of meteorological conditions that may occur during the early morning or late at night. These conditions occur infrequently and would therefore not materially affect mine scheduling (Appendix G of the draft EIS).

With the proposed dust management measures in place, including proactive and reactive dust control measures that are considered good or best practice, the air quality modelling predicts that the air quality objectives would be met at the privately-owned dwellings during the operation of the Project (Appendix G of the draft EIS). Given the flexibility and robustness of the proposed mitigation measures, this would be the case even with additional dust generating activities in the region (e.g. new or expanded mining operations). A detailed description of the predicted air quality impacts and proposed management measures are provided in Section 4.5 of the Main Text, and Appendix G of the draft EIS.

Noise

An acoustic model was developed by Renzo Tonin Ron Rumble as part of the Noise and Vibration Assessment (Appendix K of the draft EIS) to predict the potential noise impacts from the Project at the nearby sensitive receptors (i.e. privately-owned dwellings) associated with the operation of mobile fleet and fixed plant, and inform the implementation of noise management measures. The model simulates the components of the Project using noise source information (i.e. sound levels and locations) and considers meteorological effects, terrain and noise attenuation.

Relevant noise limits that have been adopted for the Project based on the Environmental Protection (Noise) Policy 2008 (EPP Noise) and other relevant guidelines are provided in Table 23-3. The adopted noise limits are aimed at protecting the qualities of the acoustic environment that are conducive to human health and wellbeing for individuals to sleep, study or learn, be involved in recreation, including relaxation and conversation and protecting the amenity of the community. Further detail on the adopted noise limits is provided in Section 4.9 of the Main Text, and Appendix K of the draft EIS.

Table 23-3
Noise Limits Adopted for the Project

Category	Time Period	Acoustic Quality Objectives
Operations	Day	35 dBA $L_{Aeq, adj, 15min}$
	Evening	35 dBA $L_{Aeq, adj, 15min}$
	Night	35 dBA $L_{Aeq, adj, 15min}$
Sleep disturbance	Night	52 dBA maxL_p
Low frequency	All periods	55 dBZ

After: Appendix K.
Day (7 am to 6 pm),
Evening (6 pm to 10 pm),
Night (10 pm to 7 am).
maxL_{pA} = maximum instantaneous noise level.
dBZ = Z-weighted decibels.

Potential noise impacts were assessed for Years 2027, 2043, 2066 and 2085. These scenarios were selected to represent a range of potential impacts over the life of the Project with reference to the location of the operations and the potential to generate noise in each year.

A number of iterative steps were undertaken to develop noise mitigation measures for the Project, including the following:

1. Preliminary noise modelling of scenarios representative of various stages of the Project (including stages when noise levels would be expected to be greatest at sensitive receptors) to identify the potential for noise exceedances.
2. Evaluation of various combinations of noise management and mitigation measures to assess the relative effectiveness of each measure.
3. Review of the effectiveness of the measures and assessment of their feasibility by Pembroke.
4. Adoption of management and mitigation measures to appreciably reduce noise emissions associated with the Project.

Noise mitigation measures that have been adopted for the Project include:

- implementation of sound suppression on certain mobile fleet;
- enclosure of parts of the overland conveyor where it is in close proximity to privately-owned dwellings;
- implementation of proactive and reactive noise control measures, including the use of weather forecasting and real-time measurement of meteorological conditions and noise levels to modify mining operations as required in order to achieve compliance with applicable noise limits at the nearest sensitive receptors.

With Pembroke's implementation of management measures described above, all sensitive receptors are predicted to comply with the relevant noise limits during the day, evening and night for all modelling cases throughout the life of the Project. As such, the health and wellbeing of the nearby landholders is not predicted to be impacted as a result of noise impacts associated with the Project. A detailed description of the predicted noise impacts and proposed management measures are provided in Section 4.9 of the Main Text, and Appendix K of the draft EIS.

2. Provide further information about the potential social consequences of contaminated land, particularly in relation to the potential impacts of inappropriate storage, handling and management of chemicals, explosives and waste, on the health and wellbeing of local landholders / land users. Describe the potential impacts and likelihood of occurrence.

A Preliminary Risk Assessment was conducted as part of the Project in accordance with Australian Standard/New Zealand Standard *(*AS/NZS) International Standards Organisation (ISO) 31000:2009 *Risk Management – Principles and Guidelines* (ISO 31000:2009) and International Electrotechnical Commission (IEC)/ISO 31010:2009 *Risk Management – Risk Assessment Techniques*. Other risk assessment standards and handbooks considered include:

- *Control of Risk Management Practices - Recognised Standard 02* prepared by the Queensland Department of Natural Resources and Mines;
- MDG1010 *Minerals Industry Safety and Health Risk Management Guideline* (New South Wales Department of Trade and Investment, 2011); and
- Handbook 203:2006 *Environmental Risk Management – Principles and Process* (HB 203:2006).

The objective of the Preliminary Risk Assessment (provided as Appendix O of the draft EIS) was to identify the on-site and off-site risks posed by the Project to people, their property and the environment and assess the identified risks using applicable qualitative criteria. This assessment considers hazardous materials used and stored on the Project site and hazards away from the Project.

The Preliminary Risk Assessment considered a number of incident types and scenarios, including incidents associated with use and storage of chemicals, explosives and wastes. Existing and proposed preventative and mitigating measures were identified for each scenario. The risk of each scenario was then assessed based on the probability and consequence of it occurring.

In addition to the mitigation and management measures (described below), it is noted that the Project site, within the Mining Leases, would be a restricted area that would not be able to be accessed by the public. Appropriate security measures (including fencing and signage) would be installed to restrict access and exposure to potentially contaminating activities. Staff and contractors that would have access to the site would be appropriately trained regarding potentially contaminating activities.

With the implementation of the preventative and mitigating measures, each scenario involving potentially contaminating activities to local landholders and land users was considered to be a low risk (Appendix O of the draft EIS). The incidents considered are predicted to have an “unlikely” or “rare” probability of occurring.

The following processes and measures would be implemented at the Project to reduce the risk of impacts on health, safety and the environment associated with the Project:

- Access to the Project site would be restricted to employees and contractors.
- Development and implementation of a Risk Management System.
- Hazardous substances (including, hydrocarbons, chemicals and explosives) would be transported, stored and handled in accordance with relevant legislation, standards and guidelines.
- The management of all chemicals would be conducted in accordance with the relevant safety data sheet.
- Training of vehicle and equipment operators would be undertaken to allow for safe and stable operation of the equipment and emergency response procedures would be implemented in the event of an incident.
- Hazardous wastes would be collected, stored and removed from site by licensed contractors.
- Regular inspections would be conducted to maintain the structural integrity of hazardous substance storage tanks and bunds.
- Spill control kits would be located at all chemical storage areas and within storage vehicles.
- Pembroke would liaise with relevant community emergency services and implement community engagement processes.
- The explosives magazines would be fenced, signed and maintained in accordance with AS 2187.1:1998.

Further to the mitigation and management measures described above, Pembroke would prepare an Emergency Response Procedure in consultation with emergency services (e.g. Queensland Police Service, Queensland Fire and Emergency Service). The Emergency Response Procedure would be implemented in the event of an incident to maintain the well-being of personnel, contractors and the public. Further information on the Emergency Response Procedure is included in Section 4.12 of the Main Text of the draft EIS.

3. Provide further information about the project's impacts on the health and wellbeing of directly-affected landholders and land workers, referred to in Section 5.7.1 of Appendix H. For example, impacts of land acquisition and land access on landholder's livelihood and mental health.

Given the Project would affect a significant portion of the Vermont Park and Willunga properties, Pembroke anticipates that it would effectively result in those entire properties no longer being able to sustain the existing agricultural enterprises conducted on them, upon commencement of the Project on those properties.

The owner of Vermont Park (and Seloh Nolem) does not live on the property, but operates the properties using an onsite manager. Pembroke has commenced negotiations with the owner of the properties and intends to compensate the owner for impacts to the entire Vermont Park property and the proportionate impact on Seloh Nolem. Impacts on the health and wellbeing of the Seloh Nolem property manager are not expected as Seloh Nolem would continue to operate as an agricultural enterprise in its own right. Casual labourers employed in seasonal and short-term work on Vermont Park are not expected to suffer impacts on their wellbeing or livelihoods as they are not wholly or substantially reliant on work at Vermont Park.

Pembroke has commenced negotiations with the owner of the Willunga property and options that would allow the landholder to continue their agricultural enterprise while the Project is operating are being considered (including options for land swaps and compensation). As described above, the Willunga homestead is located to the east of the Project, and noise and air quality impacts associated with the Project are predicted to comply with relevant criteria at the dwelling. The Willunga property owner also owns other properties in the vicinity of the Project, including Cattle Camp Station to the north-east of the Willunga domain. As such, the Project is not predicted to impact on the health or wellbeing of the Willunga property owner.

Impacts to the Old Bombandy agricultural enterprise due to the Project are expected to be minimal, as the Project would only directly impact approximately 5% of the property and the homestead (which is occupied by a property manager) would be located approximately 5 km from the Willunga domain. Noise and air quality impacts associated with the Project are predicted to comply with relevant criteria at the dwelling. Pembroke has commenced negotiations with the owner of Old Bombandy regarding compensation for the impacts of the Project on the landholding.

A small part of the Whitehaven Coal owned Wynette property is located within MLA 700035. The Project rail spur and water pipeline would traverse the northern portion of the property. Cattle grazing on native pasture is conducted on Wynette. Whitehaven Coal purchased the property off Rio Tinto in 2018, and it is understood Whitehaven Coal intends to develop an open cut coal mine on the property, and within part of the adjacent Winchester Downs property, within MDL 183. There are no dwellings on the Wynette property. Pembroke intends to compensate Whitehaven for the direct impacts to the property associated with the development of the Project.

Part of the Project rail spur and the western part of the Project water pipeline traverse the Winchester Downs property, within an existing road reserve. Cattle grazing on native pasture is conducted on Winchester Downs. Construction of the rail spur and pipeline within the road easement is not expected to have a significant impact on the existing agricultural productivity of the property or the health and wellbeing of the landholder, who does not live on the property. The homestead is occupied by the station manager.

The Winchester Downs homestead would be located approximately 10 km from the rail spur. At this distance, impacts on the health and wellbeing of the landholder or her employees are not expected due to the construction and operation of the rail spur.

The Winchester Downs homestead would be located approximately 700 m from the pipeline corridor. Some noise associated with the construction of the pipeline may be heard at the homestead, however the impacts are not considered to impact the health and wellbeing of the homestead occupant given they would be of a temporary nature and the construction works would be during daytime hours only.

Pembroke intends to compensate the Winchester Downs landholder for the direct impacts to the property associated with the development of the Project.

4. Provide further information about the social consequences of increased traffic on local roads. For example, impacts on commutes times, road safety and level of service.

The major road transport routes in the vicinity of the Project are the Peak Downs Highway, located approximately 15 km to the north-west of the Project, and Fitzroy Developmental Road, located to the east of the Project.

Direct access to the Project would be from Fitzroy Developmental Road for the Willunga Domain and access via a private road connecting to Annandale Road for the Olive Downs South Domain. Project traffic is anticipated to generally be limited to Peak Downs Highway, Fitzroy Developmental Road and Annandale Road.

The Peak Downs Highway and Fitzroy Developmental Road have experienced negative growth for various road sections over the past five to ten years which could be attributed to a slowdown in mining projects and the conclusion of construction activities associated with large project development (Appendix J of the draft EIS). Notwithstanding, the Road Transport Assessment adopted a conservative growth rate of 2% per annum (linear) has been adopted to inform the basis of future traffic forecasts, to reflect typical background traffic growth in the absence of major project developments.

The Road Transport Assessment (Appendix J of the draft EIS) assessed the potential impacts of Project traffic generation (including vehicle movements associated with the workforce travelling to and from site and construction and operational delivery movements) and identified the following:

- There is currently minimal traffic using Daunia Road and Annandale Road (the primary access route to the Project).
- Upgrades to parts of Daunia Road and Annandale Road, and the intersection of Daunia Road and the Peak Downs Highway are required to cater for Project traffic movements. As described in Section 16, Pembroke is currently in the process of negotiating an Infrastructure Agreement with the IRC which would define the extent of the staged external road infrastructure upgrades, timing and the associated costs. The upgrades would include lighting at the Peak Downs Highway intersection with Daunia Road, and at parts along Daunia Road and Annandale Road themselves.
- The forecast level of service of for the road network that would be used by the Project is predicted to be above the minimal operational requirement, and there would therefore be no significant impact to the road network (e.g. no significant impact to commute times) as a result of Project generated traffic.
- The accident history in the vicinity of the Project was representative of typical rural road networks and no extraordinary trends were identified. The Project is not predicted to result in any changes to the type and rate of accidents.
- Potential impacts to road pavements associated with Project generated traffic are considered to be insignificant.

Workforce Management

1. *Provide further information about the potential impacts of this project on workers mental health. Reference the MCA study described in the social baseline.*

There is potential for Project personnel to experience a positive increase in their circumstances, including stable employment, income security, workplace camaraderie and the sense of achievement associated with work, all of which would be positive for mental health. Financial security will also extend positive mental health benefits to workers' partners (Section 5.6.3 of the SIA).

The MCA Blueprint notes that the minerals industry is a significant employer in Australia and that the mental health needs of mining industry workers are '*likely, at the very least, to reflect those of the general community'*. As noted in the SIA (Section 5.6.4), submissions to the Queensland Government's recent inquiries into Fly-in, Fly-out (FIFO) work practices described mental health issues relating to mining industry work practices, and recent research by Curtin University[2] identified a higher risk of mental health risks for FIFO workers. The Project's workforce will include both local and commuting (FIFO or DIDO) personnel.

As described earlier in this section, Pembroke is committed to providing a mentally healthy workplace. Table 23-4 provides the MCA Blueprint principles and Pembroke's commitments which reflect the MCA principles.

2. Provide a summary of potential on-site health services to be provided for workers, including details on the process for confirming the level of on-site health service provision for the project if these details are not yet known.

Pembroke will require its principal and major construction contractors to describe in detail how they will manage work practices to minimise risks to personnel, and how they will promote a healthy workplace.

Pembroke will:

- establish or require its primary contractor to establish first response capabilities on site from the commencement of construction, to manage minor health issues on site, and employ suitably qualified Health and Safety professionals to develop health and wellbeing programs focused on the physical and mental health of the Projects workforce;
- develop a contract with local doctors to provide workplace health services including health promotion programs and access to a GP for employees living in WAVs;
- ensure Project personnel have access to an Employee Assistance Program for support with mental health issues and other medical issues; and
- undertake a risk analysis in consideration of the Projects status at the time which would be reviewed on a regular basis to ensure Pembroke's provision of service meets that of the Project requirements at any given stage. This process will be overseen by the Project health and safety professionals with guidance/assistance from external professionals.

[2] Curtin University. 2018. Impact of FIFO work arrangements on the mental health and wellbeing of FIFO workers. Accessed at https://www.mhc.wa.gov.au/media/2547/impact-of-fifo-work-arrangement-on-the-mental-health-and-wellbeing-of-fifo-workers-full-report.pdf on 4 February 2019

Table 23-4
Mental Health Principles and Commitments

MCA Principle	Pembroke Commitments
The minerals industry is committed to maximising and fostering employee mental health, wellbeing and safety.	Pembroke has committed to maximising and fostering employee mental health, wellbeing and safety, and to a suite of strategies which will support mental health, wellbeing and recovery from mental illness.
Mental health and wellbeing is a shared responsibility among all workplace stakeholders.	Pembroke will establish a healthy workforce policy which includes a focus on mental health.
Leadership and commitment is critical for the development and sustainability of a safe and mentally healthy workplace.	Pembroke has committed to: • developing an understanding of workplace health risks and protective factors, and implementation of evidence-based programs to mitigate risks; • ensuring staff know that sick leave is available to attend to mental health or domestic violence issues; • employing staff with paramedical or nursing qualifications to manage minor health issues on site, and develop health and wellbeing programs focused on physical and mental health; and • encouraging the participation of Queensland Health staff in delivery of workforce health promotion strategies addressing physical activity, healthy eating, mental health and reduced smoking, alcohol and other drug use.
Wellbeing strategies should focus on promoting mental health as well as preventing and responding effectively and early to mental ill-health in the workplace.	Pembroke has committed to: • developing personnel's skills to identify and respond to mental ill-health in the workplace, including staff awareness; • developing referral pathways between the workplace and health care providers; • contracting an Employee Assistance Program provider to provide proactive support for mental health and family issues; • promoting use of the Queensland Government's 13 HEALTH confidential phone service, Quitline and the Alcohol and Drug Information Service; and • promoting recovery through return to work after illness or injury.
The minerals industry is committed to building knowledge about mental health and mental ill-health.	Pembroke's implementation of evidence-based programs to mitigate risk and commitment to engender a culture that supports mental wellbeing will assist in building it knowledge and that of the workforce.

Editorial Suggestions

1. Reword or move the discussion in Section 5.8.3 (Social impacts and opportunities – Business and industry partnerships) of Appendix H to Section 6 (Social impact management plan) of Appendix H.

Pembroke commits to engaging with each of the key agents listed in Section 5.8.3 regarding business and supply networks prior to the commencement of the Project. This commitment to engage with business and industry groups is described in Section 6.3.3 of the Social Impact Management Plan. The engagement will include:

- liaison with key stakeholders to undertake supplier market analysis and build a Local, Regional and Indigenous Businesses register;
- inviting businesses to briefings and workshops to discuss tendering requirements and promote access to capability development;

- engagement with Indigenous businesses and facilitation of capacity building programs; and
- Project attendance (by invitation) at business and industry association meetings.

2. Review and update the residual impact ratings in Table 5-11 (Significance evaluation), particularly those that remain unchanged after mitigation.

The significance evaluation identified one adverse impact, classified as possible and minimal, which would not be changed by the mitigation strategies. This was in regard to the potential for the Project personnel's demand for housing purchase to contribute to incremental housing cost increases. This was rated as a possible minimal impact because:

- the personnel's needs for housing purchase will build over a period of years, with no unexpected 'shocks' to the housing market; and
- the availability of housing for purchase is likely to be maintained, in the context of existing residential land availability, market stimulus resulting from the Project, and Pembroke's commitments to support housing availability (Section 6.5.4 of the SIA) and settlement of new local workers (Section 6.5.5 of the SIA).

Regardless of mitigation strategies being implemented, the impact is not expected to decrease in likelihood from possible, or in consequence from minimal.