



APPENDIX L

SOCIAL IMPACT ASSESSMENT
REPORT



Holcim Salt Ash Sand Operations | State Significant Development

SOCIAL IMPACT ASSESSMENT

Prepared for Holcim (Australia) Pty Ltd | 31 October 2022



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Holcim Salt Ash Sand Operations

STATE SIGNIFICANT DEVELOPMENT | SOCIAL IMPACT ASSESSMENT

Prepared for Holcim (Australia) Pty Ltd
31 October 2022

PR135

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Certification Page

Lead author declaration

I certify that the social impact assessment (SIA) for the Holcim (Australia) Pty Ltd Salt Ash Sand Operations environmental impact statement (EIS) contains all information relevant to the SIA for the Project, and that the information is not false or misleading. My qualifications and experience are listed below.

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1. Bachelor of Science Hons. (Human Geography)
2. Community Development Diploma
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Experience:

I am trained in social science methodologies and have demonstrated SIA skills in government, private, and education settings. I have managed and authored SIAs for projects in New South Wales (NSW) and Queensland.

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Abbreviations

Abbreviation	Definition
ABS	Australian Bureau of Statistics
ACI	Australian Consolidated Industries
ACHAR	Aboriginal cultural heritage assessment report
AHD	Australian height datum
AMSL	Above mean sea level
BAM	Biodiversity Assessment Method
BDAR	Biodiversity development assessment report
CES	Community engagement strategy
CSP	Community strategic plan
DOD	Department of Defence
DPE	Department of Planning and Environment
EIS	Environmental impact statement
Element	Element Environment Pty Ltd
ENM	Excavated natural material
EPA	NSW Environment Protection Agency
EP&A Act	NSW Environmental Planning and Assessment Act 1979
GIA	Groundwater impact assessment
IRSD	Index of relative socio-economic disadvantage
LEP	Local Environmental Plan
LALC	Local Aboriginal Land Council
LGA	Local government area
LSPS	Local Strategic Planning Statement
NML	Noise management level
NSW	New South Wales
NVIA	Noise and vibration impact assessment
PCT	Plant community type
PFAS	Per- and poly-fluoroalkyl substances
PFOS	Perfluorooctane sulfonate
PO	Participant observation
PSC	Port Stephens Council
RAAF	Royal Australian Airforce
RAP	Registered Aboriginal Party
RDA	Regional Development Australia
RNP	Road Noise Policy (2011)
SEARs	Secretary's environmental assessment requirements
SEIFA	Socio economic indexes for areas
SIA	Social impact assessment
SSC	State suburbs
SSD	State significant development
TEC	Threatened ecological community
TIA	Traffic impact assessment
tpa	Tonnes per annum
TUP	Transport Urban Planning

Abbreviation	Definition
UCL	Urban Centres and Localities
VENM	Virgin excavated natural material
VLAMP	Voluntary land acquisition and mitigation policy

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CHAPTER 1

INTRODUCTION

1 INTRODUCTION

1.1 Purpose of the report

Holcim (Australia) Pty Ltd (Holcim) owns and operates the Salt Ash Sand Operations (the 'site' or the 'quarry'), a long-standing sand quarry at 8 Oakvale Drive, Salt Ash, New South Wales (Lot 4 DP 774726) that extracts, imports, processes and transports sand products for use in the production of industrial and construction materials, such as glass and concrete.

The quarry, which has been in operation since 1980, produces a variety of dry form and wet processed sand.

Holcim propose to meet part of the increased forecast demand in natural sand in the Hunter region and beyond by maximising the extraction of remaining sand resource from the quarry through a State significant development (SSD) application.

The proposed development involves the extraction and processing of up to 550,000 tonnes per annum (tpa) of sand at the site using both dry extraction and dredging techniques. Holcim also propose to continue importing up to 200,000 tpa of sand from their Tanilba Bay and Anna Bay operations, as well as other local extractive operations for processing at the site, resulting in a total of up to 750,000 tonnes of sand products processed and dispatched from the site per year (the 'project'). The project will operate for up to 30 years.

This Social Impact Assessment (SIA) has been prepared as part of a SSD application under Part 4, Division 4.7 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

This report has been prepared to address the Secretary's environmental assessment requirements (SEARs) (SSD-9099356) for the project, issued by NSW Department of Planning and Environment (DPE) on 23 December 2020. The SEARs nominated social impacts as being among the key issues that must be addressed via a SIA, prepared in accordance with the SIA guideline for state significant mining, petroleum production and extractive industry development (2017). The DPE has since released a new guideline. DPE's *Social Impact Assessment Guideline for State Significant Projects* (July 2021), hereafter the 'Guideline', will be applied.

The SEARs require that the SIA considers:

- how the development might affect people's way of life, community, access to and use of infrastructure, services and facilities, culture, health and wellbeing, surroundings, personal and property rights, decision-making systems, and fears and aspirations;
- the principles in Section 1.3 of the 2017 guideline; and
- the review questions in Appendix D of the 2017 guideline. Note that the review questions are in Appendix C of the Guideline.

It is noted that some of the terminology in the SEARs refers to the 2017 SIA Guideline. Some of this terminology is now outdated given the update of the Guideline. The full intent of the SEARs is addressed in this SIA irrespective of the different terminology.

1.2 Objectives of the social impact assessment

The SIA objectives are consistent with the Guideline, which outlines some mandatory requirements to be met by SIA practitioners in NSW. The Guideline provides a framework for identifying, evaluating and responding to social impacts. It provides guidance for stakeholder and community engagement, data collection, project refinement, and the monitoring and management of social impacts.

This SIA aims to:

- identify the social locality for the project;
- outline the SIA methodology applied for the study;
- describe the stakeholder and community engagement activities undertaken during the SIA, and the outcomes of these activities;
- outline the existing social baseline for the project; and
- identify, evaluate and respond to the predicted social impacts of the project.

1.3 Project description

This section describes the site and provides an overview of the project. Refer to Chapter 3 of the Environmental Impact Statement (EIS) for the detailed project description.

1.3.1 Project site

The proposed disturbance footprint of the project covers an area of approximately 35.4 ha and encompasses all areas to be disturbed by sand extraction (dry extraction and dredging) and processing operations (Figure 1.1).

Approximately 33 ha of the project's disturbance footprint have historically been disturbed, or are approved for disturbance, associated with existing development consents for the quarry.

1.3.2 Project overview

Sand from the site is currently extracted to 5 m Australian height datum (AHD) under the original 1980 and 1992 development consents. Significant sand resource remains below 5 m AHD.

Holcim is seeking SSD approval to extract and process an estimated minimum of 10 million tonnes of sand from the quarry at a rate of up to 550,000 tonnes per annum (tpa). Additionally, the continued importation of up to 200,000 tpa of sand from Anna Bay, Tanilba Bay, Cabbage Tree Road Quarry and other local extractive operations as required will continue for the project. This sand would be processed at the site and dispatched as per the existing operations. As such, the project will seek to process and dispatch up to 750,000 tpa of sand products from the quarry.

Given the existing operations, infrastructure and services at the site, there will be little work required to establish the project, with existing fixed and mobile plant and equipment continued to be used.

Sand may be extracted via a combination of dry and wet extraction by excavator and dredging operations to a maximum depth of 30 m below the water table.

The importation of virgin excavated natural material (VENM) and/or excavated natural material (ENM) by road will be required during the project on an as required basis to aid in batter stabilisation, ground stability and backfilling of the dredge pond to shape the final landform.

Figure 1.1
The site

HOLCIM SALT ASH SAND OPERATIONS
ENVIRONMENTAL IMPACT STATEMENT



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1.3.3 Existing operations

The quarry has been in operation since 1980 and was previously owned by Sibelco Pty Ltd. The quarry was recently acquired by Holcim as part of the Sibelco purchase in April 2020.

Initial development consent under the EP&A Act was granted to Australian Consolidated Industries (ACI) - Industrial Minerals Division Pty Ltd in 1980. The initial 1980 consent permitted the extraction and processing of sand within the western portion of Lot 6 DP 600870, which was sub-divided in 1988 to Lots 3 and 4 DP 774726.

A development consent was granted in 1992 permitting the expansion of sand extraction within the eastern portion of the site.

The existing operations at the site comprise:

- extraction of sand through dry excavation of the dune mass to a depth of 5 m AHD no greater than 30 m from the southern, eastern and northern lot boundaries;
- importation of sand via the road network from Anna Bay, Tanilba Bay and Cabbage Tree Road quarry operations for processing on-site;
- processing of sand products extracted on-site and received from off-site at the processing plant producing dry form and wet processed sand;
- haulage of product from the quarry to Oakvale Drive, Nelson Bay Road and the wider road network; and
- progressive rehabilitation of extraction areas.

The existing sand receipt, extraction, processing and dispatch activities at the site includes:

- extracting sand using a dozer to clear vegetation within the extraction area;
- topsoil from cleared areas is stripped using a dozer and stockpiled on site for later re-use in rehabilitation;
- sand is removed with a front-end loader which pushes into the exposed sand face. Sand material falls towards the front-end loader at the natural angle of repose;
- where sand is imported from the Anna Bay, Tanilba Bay and Cabbage Tree Road quarry operations, the sand is unloaded from trucks into stockpiles;
- the front-end loader then transfers the extracted or imported sand to the processing plant;
- sand is loaded into the in-feed plant, where a conveyor belt feeds the sand into a trommel screen for sizing;
- sand is then fed as a slurry into the primary feed hopper. The slurry from the feed pump is fed through trommel screens. Oversize material and organic material from the trommels are discharged via a chute onto a stockpile;
- product from the trommel screens is discharged into a bin before it is then processed through a series of spirals which separate fractions of heavy mineral sand from the Tanilba Bay, along with other lower grade sand material from the final product sands;
- the product sand from the spirals is pumped to the stockpile area via product cyclone towers; The overflow water is returned to the settlement pond via a series of underground drainage pipelines;
- all by-product sands are collected into one bin where they are then pumped to a by-product sand cyclone tower. The overflow water is returned to the settlement pond via a series of underground drainage pipelines;
- following stockpiling, the sand products are then loaded into trucks for dispatch off site to the customer; and
- where required, sand material is processed within a drying plant to further dry the material before being loaded into bulk bags and dispatched from site.

1.4 Legislative and social policy context

1.4.1 Legislation

The EP&A Act sets the legislative context for this SIA. The objects of the EP&A Act are to:

- promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the state's natural and other resources;
- facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment;
- promote the orderly and economic use and development of land;
- promote the delivery and maintenance of affordable housing;
- protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats;
- promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage);
- promote good design and amenity of the built environment;
- promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants;
- promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the state; and
- provide increased opportunity for community participation in environmental planning and assessment.

The SEARs (and therefore the Guideline) are issued under the provisions of the EP&A Act and set legislative requirements that this SIA must accommodate.

1.4.2 State guidelines

Social impact assessment guideline

As described above, the Guideline details how social impacts of state significant projects should be identified, evaluated, responded to and, if appropriate, monitored and managed in accordance with the EP&A Act.

The Guideline outlines some mandatory requirements to be met by SIA practitioners in NSW. It provides:

- a rigorous framework to identify, evaluate and respond to social impacts;
- guidance on meaningful, respectful and effective stakeholder and community;
- engagement on social impacts from project planning to post-approval;
- the means to obtain reliable, relevant information, insights and analysis for decision-makers; and
- advice on how the SIA can inform ongoing engagement, project refinement, monitoring, and adaptive management.

Community and stakeholder engagement guidelines

The *Undertaking Engagement Guidelines for State Significant Projects* (DPIE, 2021a) set out the requirements for effective engagement for state significant projects in NSW. The guidelines outline the actions that DPE will take in relation to such projects, they identify opportunities for the community to participate in, and they set out requirements for proponents.

These guidelines provide guidance to proponents on:

- planning their approach to engagement;
- undertaking engagement to inform the development of the proposal and contribute to better planning outcomes; and
- reporting back and demonstrating how engagement has shaped the project being assessed.

The project stakeholder and community engagement activities were undertaken in accordance with the guidelines (refer to Chapter 4).

1.4.3 Regional and local community plans and strategies

Regional plans which reflect the aspirations of the community have been developed by the NSW Government and local authority associated with the project. The regional and local plans outlined below are related to 'place-making' and improving the socio-economic circumstances of the respective populations. They each utilised input from a range of stakeholders and are, therefore, relevant to this SIA.

Hunter Regional Plan 2036

The *Hunter Regional Plan 2036* (NSW Department of Planning and Environment, 2016) was released by the NSW State Government in 2016 and aimed to guide future land use planning priorities and decisions in NSW over a 20-year period. It is not intended to be a step-by-step approach to all land use planning, but instead intends to guide subsequent and more detailed land use plans, development proposals and infrastructure funding decisions. The plan was developed following consultation on a Lower Hunter discussion paper produced in 2014, involving councils and other stakeholders.

The 'vision' of the plan is for the Hunter Region to be the "leading regional economy in Australia with a vibrant new metropolitan city at its heart" (NSW Department of Planning and Environment, 2016, p.8). The plan outlines four goals (and subsequent directions) to achieve its vision. The Hunter Development Corporation will deliver, coordinate and be accountable for achieving the vision and goals of the plan.

The goals are for the Hunter region to be/have:

1. the leading regional economy in Australia;
2. a biodiversity-rich natural environment;
3. thriving communities; and
4. greater housing choice and jobs.

Port Stephens Council Local Strategic Planning Statement

The PSC *Local Strategic Planning Statement* (LSPS) (Port Stephens Council, 2020) is the tool that gives local-level effect to State government regional plans by informing local statutory plan making and development controls. It also provides the link between the *Council Community Strategic Plan 2018-2028* (Port Stephens Council, 2018, see below) and land use planning.

This link is important as it establishes a means for visions and community priorities (determined by the community and conveyed to Port Stephens Council (PSC) during its community consultation activities) to be realised in planning practice. It also important for this SIA as it enables the social baseline and assessment of social impacts to be tailored to the visions and community priorities conveyed to and recognised by PSC. The relationship between the PSC LSPS, PSC *Council Community Strategic Plan 2018-2028* and the SIA baseline is identified in section 3.2.1.

Guided by PSC constituents, the LSPS identifies the following 12 priorities for PSC to implement:

1. support the growth of strategic centres and major employment areas;
2. make business growth easier;
3. support tourism development and attract events;
4. ensure suitable land supply;
5. increase diversity of housing choice;
6. plan infrastructure to support communities;
7. conserve biodiversity values and corridors;
8. improve resilience to hazards and climate change;
9. protect and preserve productive agricultural land;
10. create people friendly spaces in our local centres where people can come together;
11. integrate land use and transport planning; and
12. enhance inter-regional connections.

Port Stephens Council Community Strategic Plan 2018 – 2028

PSCs strategic plan (Port Stephens Council, 2018) is the primary corporate community strategy of the organisation. It was developed with input from residents, community groups, business and government representatives. The purpose of the plan is to:

- identify community aspirations and priorities over the next ten years;
- outline PSC's role in delivering these priorities;
- work with other governments and agencies to achieve our community's priorities;
- provide for community participation in decision making; and
- provide a basis of accountability and consistency in reporting.

The strategic plan establishes four focus areas for Port Stephens. Each focus area has a sub-set of 'key directions' which outline its priorities. In relation to each focus area, there are also a range of objectives and outcomes which guide practitioners in implementing the plan until 2028.

The four focus areas of the plan are:

1. our community - Port Stephens is a thriving and strong community respecting diversity and heritage;
2. our place - Port Stephens is a liveable place supporting local economic growth;
3. our environment - Port Stephens' environment is clean, green, protected and enhanced; and
4. our council – PSC leads, manages, and delivers valued community services in a responsible way.

This SIA recognises the community consultation efforts that PSC made in determining the community aspirations and priorities of their constituents. The SIA relies upon PSCs work as a key input into the SIA. The alignment of community aspirations and priorities with the social baseline is made clear in section 3.2.1 of this report.

1.5 Structure of this report

The structure of this report accords with Guideline. Once the social locality of the study is established (Chapter 2), the method for scoping and preparing the SIA is described (Chapter 3).

The approach to the SIA stakeholder and community engagement is described in Chapter 4, and the existing social baseline associated with the project is provided in Chapter 5.

An assessment of the identified social impacts is made in Chapter 6, and finally, the suggested social impact enhancement measures, mitigation measures, and residual impacts are described in Chapter 7. The SIA conclusion is also provided in Chapter 7.

The structure of this report also observes the 'review questions' contained in Appendix C of the Guideline. The review questions are essentially a checklist for the author to confirm this report is

compliant with the Guideline in terms of undertaking the SIA and preparing this report. A compliance matrix is in table 1.1 to identify where the review questions are addressed in this report.

Table 1.1 Compliance matrix

Review questions		Location in this report
General		
1	Does the lead author meet the qualification and experience requirements?	Certification page
2	Has the lead author provided a signed declaration?	Certification page
3	Would a reasonable person judge the SIA report to be impartial, transparent and suitably rigorous given the nature of the project?	Entire report
Project's social locality and social baseline		
4	Does the SIA report identify and describe all the different social groups that may be affected by the project?	Section 4.1
5	Does the SIA report identify and describe all the built or natural features that have value or importance for people, and explain why people value those features?	Section 5.11
6	Does the SIA report identify and describe historical, current, and expected social trends or social changes for people in the locality, including their experiences with this project and other major development projects?	Chapter 4 Chapter 5 Chapter 6
7	Does the social baseline study include appropriate justification for each element, and provide evidence that the elements reflect both relevant literature and the diversity of views and likely experiences?	Section 3.2.1 Chapter 5
8	Does the social baseline study demonstrate social-science research methods and explain any significant methodological or data limitations?	Section 3.2
Identification and description of social impacts		
9	Does the SIA report adequately describe likely social impacts from the perspectives of how people may experience them, and explain the research used to identify them? When undertaken as a part of SIA scoping and initial assessment, has the plan for the SIA report been detailed?	Chapter 6
10	Does the SIA report apply the precautionary principle to identifying social impacts, and consider how they may be experienced differently by different people and groups?	Table 6.1
11	Does the SIA report describe how the preliminary analysis influenced project design and EIS engagement strategy?	Section 6.1
Community engagement		
12	Were the extent and nature of engagement activities appropriate and sufficient to canvass all relevant views, including those of vulnerable or marginalised groups?	Section 4.2
13	How have the views, concerns and insights of affected and interested people influenced both the project design and each element of the SIA report?	Chapter 6 Chapter 7
Predicting and analysing social impacts		
14	Does the SIA report impartially focus on the most important social impacts to people at all stages of the project, without any omissions or misrepresentations?	Entire report
15	Does the SIA report analyse the distribution of both positive and negative social impacts, and identify who will benefit and who will lose from the project?	Table 7.2

Review questions		Location in this report
16	Does the SIA report identify its assumptions, and include sensitivity analysis and alternative scenarios? (including 'worst-case' and 'no project' scenarios where relevant)	Section 7.4.1
Evaluating significance		
17	Do the evaluations of significance of social impacts impartially represent how people in each identified social group can expect to experience the project, including any cumulative effects?	Chapter 6
18	Are the evaluations of significance disaggregated to consider the likely different experiences for different people or groups, especially vulnerable groups?	Chapter 6
19	Does the SIA report propose responses that are tangible, deliverable, likely to be durably effective, directly related to the respective impact(s) and adequately delegated and resourced?	Chapter 7
20	Does the SIA report demonstrate how people can be confident that social impacts will be monitored and reported in ways that are reliable, effective, and trustworthy?	Chapter 7
21	Does the SIA report demonstrate how the proponent will adaptively manage social impacts and respond to unanticipated events, breaches, grievances and non-compliance?	Chapter 7

CHAPTER 2

SOCIAL LOCALITY

2 SOCIAL LOCALITY

2.1 Regional context

As a major Australian east coast city, Newcastle is the capital city of the Hunter Region. The city has strong historical links to extractive industries but over the last two decades has experienced structural economic changes. Newcastle has diversified from its traditional extractive industry base to other economies including defence, education and service industries. The city has benefitted from an urban renewal program led by the NSW Government, with an approximately \$650 million investment to the city centre, strengthening connections between the city and waterfront, creating job opportunities, providing new housing, and delivering attractive public spaces connected to better transport (New South Wales Government, 2019). The Port of Newcastle, Newcastle Airport, and heavy rail links facilitate the transport of freight and passengers across the region.

Beyond Newcastle, the Hunter Region contains coastal and hinterland tourist destinations and is characterised by premium farming, wine and equine industries ensuring it has one of the strongest regional economies in the country (Deloitte Access Economics, 2013). Given its diversifying status, future growth and development of the Hunter Region will depend on number of factors including integration with Asia, changing settlement and migration patterns tied to the greater Sydney population, transitioning to a less carbon intensive economy, digital economic advances, and accessibility in terms of road, rail and freight connectivity (Deloitte Access Economics, 2013).

The prominent socio-economic characteristics associated with the region are identified by NSW DPE (2016). The Hunter economy accounted for 28% of the entire gross regional product in NSW during 2016. It contains a globally renowned thoroughbred centre and is the oldest wine making region in Australia. Tourism figures suggest it performs strongly compared to other NSW regions, with over 3.3 million domestic overnight tourists visiting the Hunter Region in 2016. This number accounted for almost 16% of all domestic overnight tourists that visited a destination in regional NSW.

In terms of its population, the region contained 732,400 residents in 2016, and this is expected to increase to 862,250 by 2036, when a quarter of the population will be aged over 65 years of age. Age and sex data (see Table 2.1) provides a contrast between each Hunter Region local government area (LGA) population and the NSW population during 2016.

Table 2.1 Age and sex comparison

Council area	Proportion of males	Proportion of females	Median age
Lake Macquarie	48.4	51.2	42
Cessnock	49.7	50.3	38
Singleton	50.9	49.1	36
Muswellbrook	51.3	48.7	35
Upper Hunter	49.4	50.6	41
Dungog	50.1	49.9	45
Maitland	48.8	51.2	36
Port Stephens	49.4	50.6	45
Newcastle	49.3	50.7	37
NSW	49.3	50.7	38

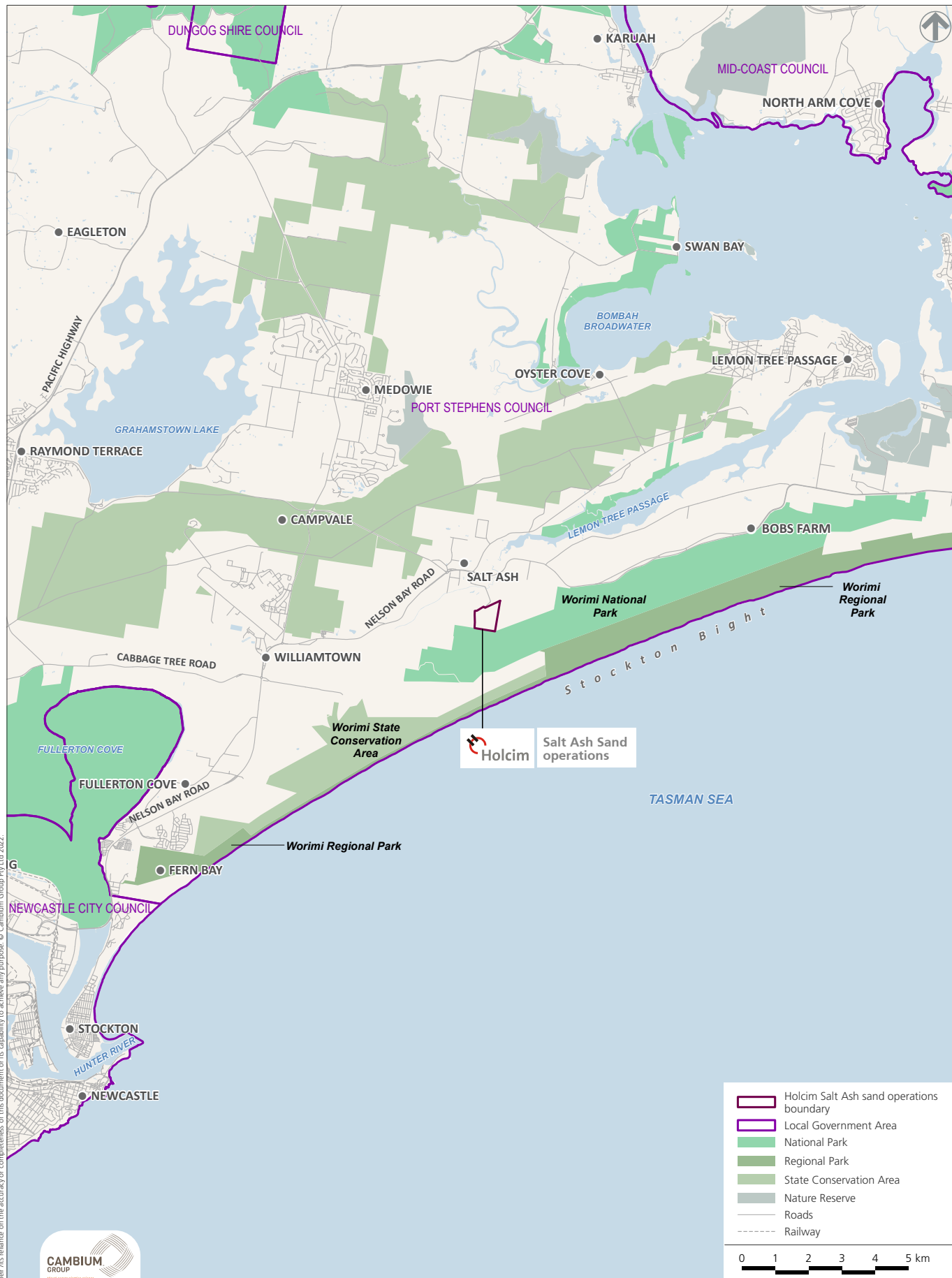
Employment in the Hunter region is marginally weaker than the NSW state average by exhibiting a higher proportion of unemployed people and a smaller proportion of people in full-time work,

despite having a larger proportion employed part-time. The employment figures for the region are unsurprising given buoyancy provided by mining activities. Coal mining was the industry that employed most people and accounted for 9% of the regional population during 2016. Other major industries of employment included hospitals (except psychiatric hospitals) (3.2%), aged care residential services (3.0%), supermarket and grocery stores (2.6%) and takeaway food services (2.4%). Smaller scale employment data is in Chapter 5 (existing social baseline).

Figure 2.1 shows the regional context of the project.

Figure 2.1
Regional context

HOLCIM SALT ASH SAND OPERATIONS
ENVIRONMENTAL IMPACT STATEMENT



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2.2 Holcim Salt Ash Sand operations and surrounding land use

The quarry is positioned within the rural residential area of Salt Ash, which comprises a mix of residential properties, commercial, agricultural, tourism and extractive industry operations (Figure 1.1). The main access for these properties is via Oakfield Road, David Drive and Oakvale Drive to and from Nelson Bay Road.

Residential properties are typically separated from the quarry by agricultural operations and Tilligerry Creek. To the south of Tilligerry Creek are large rural residential, with the closest receiver approximately 465 m northwest of the quarry. Two additional dwellings, inhabited by employees of the adjoining quarry operation are also located approximately 75 m and 430 m west of the project respectively.

Immediately to the south of the site are the Worimi Conservation Lands, owned and co-managed by the local Worimi Aboriginal community in partnership with NSW National Parks and Wildlife Service. This significant landscape is home to an extraordinary number of ancient cultural sites.

The Oakvale Wildlife Park is a prominent tourist attraction in the region and is located approximately 540 m north of the quarry. The quarry access route runs along the northern boundary to Oakvale Drive.

The environmental conservation areas to the south of the site extend along the Stockton Bight beach and dune system, which is predominantly utilised for recreational purposes including fishing, four-wheel driving, quad bike riding, hiking and horse riding.

2.2.1 The social locality

The social locality for the project is in Figure 2.2. It has been selected by considering the project features and their potential impact (both positive and negative) for people in Salt Ash, points of interest near to Salt Ash (including residences), and Port Stephens LGA more broadly. It recognises Salt Ash Public School and the project haulage route between the site and the Pacific Highway, running along Nelson Bay Road, Cabbage Tree Road and Tomago Road.

The social locality was developed by considering the range of factors in Table 2.2.

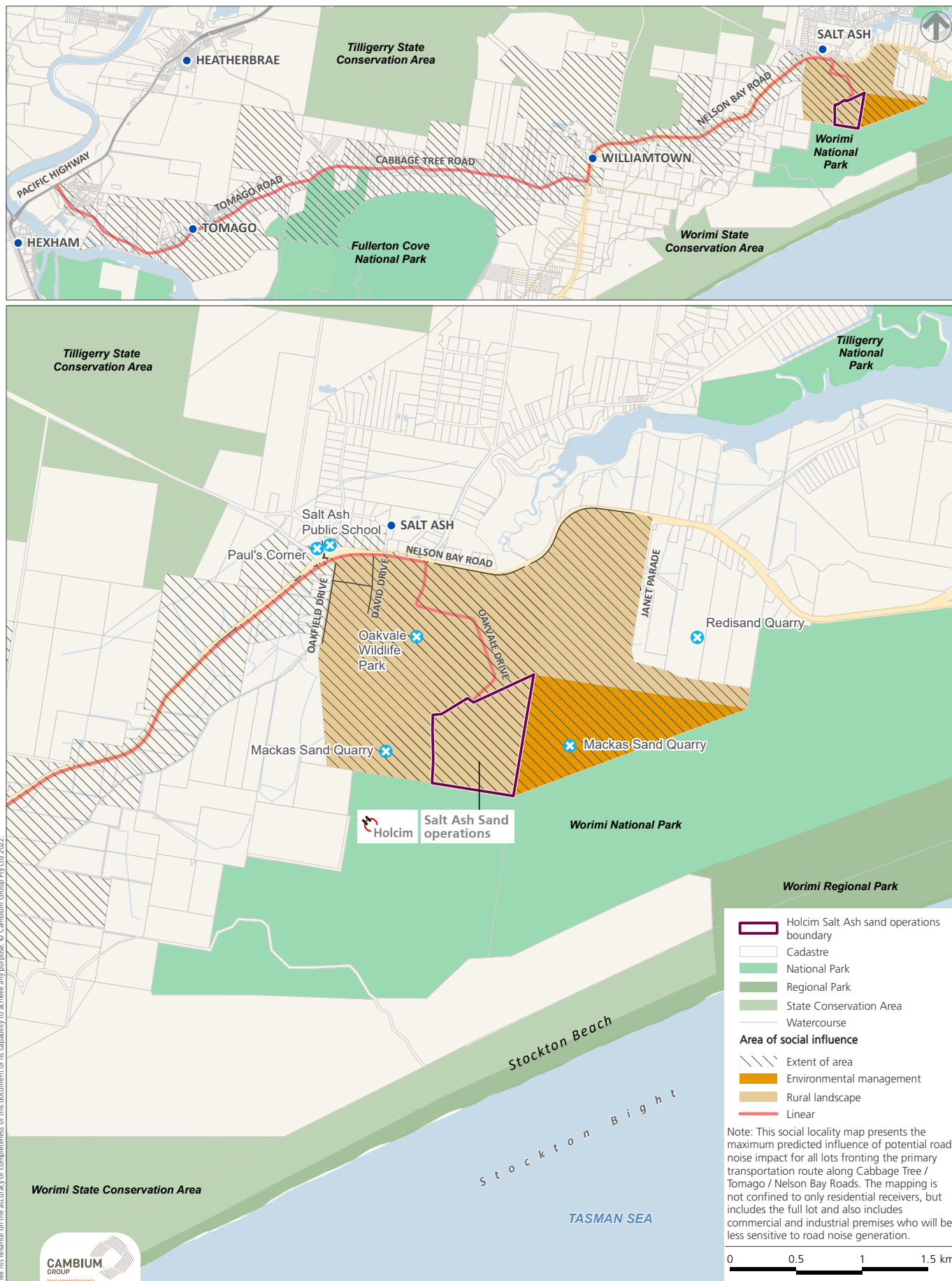
Table 2.2 Social locality development

Factors considered	Relationship to the social locality
Scale and nature	<p>The scale and nature of the project is not identical, but there are similarities with other sand quarries in terms of:</p> <ul style="list-style-type: none"> ▪ extraction methods; ▪ transport, including traffic volume; ▪ required workforce; and ▪ estimated lifespan of the quarry. <p>Comparative operational projects are:</p> <ul style="list-style-type: none"> ▪ Boral's Stockton Sand Quarry ▪ Redisand Quarry; ▪ Fullerton Cove Quarry; and ▪ Cabbage Tree Road Sand Quarry.
Who may be affected	<p>The project has a connection to the people of Salt Ash and residents who live along the haul roads in the suburbs of Williamtown and Tomago. The project workforce is locally based. The residences of the majority of permanent staff are located within 15 km of the site. All of the permanent team are based within 35 km of the site. Holcim 'buy local' and procure the following services:</p> <ul style="list-style-type: none"> ▪ trades/contractors/maintenance staff – based in Tomago, Foster, and Central Coast, all located to the south of the site and representing the 'industrial hub' in the Newcastle area; ▪ services – from the Newcastle area; and

Factors considered	Relationship to the social locality
	<ul style="list-style-type: none"> ▪ drivers (inbound sand and tankers) - from Tomago. <p>The project is in a rural residential area comprising a mixture of residential, commercial, agricultural, tourism and extractive industry activities.</p> <p>The closest receiver is approximately 465 m to the north-west of the site.</p> <p>Figure 2.3 shows the location of sensitive receivers.</p>
Vulnerable or marginalised people may be affected	<p>The SIA recognises that Aboriginal people in the social locality are a marginalised group. A number of attempts to engage with Worimi Local Aboriginal Land Council (LALC) representatives for the purposes of the SIA were unsuccessful, so some assumptions have influenced the social locality development. The LALC did, however, participate in the project's Aboriginal cultural heritage assessment associated with the EIS. Furthermore, Holcim also has a positive relationship with the Worimi people and has initiated some partnerships with the intent of delivering positive social impacts. Details of these partnerships are in Chapter 6 and Chapter 7.</p> <p>A local resident was identified as a vulnerable person, having been in cancer remission for over five years.</p>
Built or natural features	<p>The project falls within the North Coast bioregion that runs up the east coast of NSW from Newcastle to the Queensland border, and is characterised by the sequence from coastal sand barrier, through low foothills and ranges, to the steep slopes and gorges of the escarpment, with rainfall increasing inland along this transect.</p> <p>The site is located at an elevation of approximately 10 m above mean sea level (AMSL). Topography is generally consistent but rises gradually in an easterly direction away from the coast.</p> <p>The site is accessed via Oakvale Drive and shares its southern boundary with the Worimi Regional Park.</p> <p>The area is semi-rural, underdeveloped but does contain a range of built features such as the Oakvale Wildlife Park, Paul's Corner and the Salt Ash Public School.</p>
Relevant social, cultural, and demographic trends, and other change processes	<p>According to the latest census data (ABS, 2021), the Port Stephens LGA population was 75,276 on the 2021 census enumeration night. It is projected to reach 93,658 by 2041 (NSW Government, 2021).</p> <p>The Aboriginal and Torres Strait Islander population is estimated to be 4,885, making up 6.5% of the population.</p>
History	<p>The Worimi group are the original inhabitants of the region and consist of the Grewerigal, Gamipinigal and Maiagal people. This is evidenced by the presence of occupational sites and artifacts such as scar trees and shell middens (Port Stephens Australia, 2022).</p> <p>Sailing on the "Endeavour", Captain James Cook sighted the entrance to Port Stephens on 11 May 1770. Non-Indigenous people first entered in 1791 by the British ship "Salamander" from the Third Fleet. The region was developed as a source of timber and coal for Sydney and surrounding areas and is renowned for coal mining, electricity generation, horse breeding, tourism and wine production.</p>

Figure 2.2
Social Locality

HOLCIM SALT ASH SAND OPERATIONS
ENVIRONMENTAL IMPACT STATEMENT



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Note: This social locality map presents the maximum predicted influence of potential road noise impact for all lots fronting the primary transportation route along Cabbage Tree / Tomago / Nelson Bay Roads. The mapping is not confined to only residential receivers, but includes the full lot and also includes commercial and industrial premises who will be less sensitive to road noise generation.

0 0.5 1 1.5 km



Figure 2.3 Sensitive receivers

(source: Muller Acoustic Consulting, 2022)

CHAPTER 3

METHODOLOGY

3 METHODOLOGY

In accordance with the SEARs, the methods described below enabled the collection of data to address the social impact categories defined in the Guideline (refer Appendix A). While this chapter describes the SIA methodology, it does not identify which social impact category each method is designed to address. This link is made clear in Chapter 6 and summarised in Table 6.1.

3.1 Scoping methodology (Phase 1)

The methods applied to scope the SIA are described below.

3.1.1 Scoping meeting with project team and DPE

The project team met regularly during scoping to identify and discuss potential project enhancements and refinements in response to predicted social impacts.

After receiving the SEARs on 23 December 2020, routine meetings with DPE were held to discuss matters relating to the project. Refer to Chapter 4 of the EIS for further detail on project consultation. With specific reference to the SIA, email correspondence presenting the proposed consultation program was submitted to DPE on 14 September 2021 and it was deemed adequate by the relevant DPE staff.

3.1.2 Literature review

Literature was reviewed to scope potential social impacts predicted to arise from other major developments near the project. Focus was placed on SIA's and consultation reports produced for comparable projects in the area, for example:

- Environmental Assessment Sand Extraction Operations from Lots 218 and 220, Salt Ash (Macka's Sand) (Umwelt, 2009);
- Fullerton Cove Sand Quarry Modification to Project Approval (GHD, 2015);
- Social Impact Assessment for Proposed Bobs Farm Sand Mine (Tattersall Lander, 2018); and
- Nelson Bay Road Upgrade – Williamtown to Bobs Farm (Transport for NSW, 2021).

The sand quarry development of a type most similar and closest to the project is the Macka's Sand development at Salt Ash. The environmental assessment (Umwelt, 2009) for this development did not identify vulnerable or marginalised groups. However, the Worimi people featured prominently in the report as the owners of the site. As proponents of the development, the Worimi people intended to use revenue from the operation to fund the development of the nearby Murrook Cultural Centre.

In another nearby and similar sand quarry development, nil vulnerable or marginalised groups were explicitly identified in the Fullerton Cove Sand Quarry environmental assessment (GHD, 2015)

Public and internal documentation associated with the project was also reviewed for background information and the scoping of social impacts. For example, the complaints record of the existing operations was reviewed.

3.1.3 Project introduction letter

A project introduction letter inviting community feedback about the project was distributed to approximately 125 properties (residences and businesses) in the social locality (refer to Figure

2.2) during early July 2020. The letter provided an overview of Holcim and the existing sand quarry, preliminary details of the project (including contact details), and a feedback request. The letter was hand delivered and doorknock conversations were held to collect community feedback.

The letter also contained a link to an online community survey (see section 3.1.6).

3.1.4 Scoping tool

Scoping of the SIA was undertaken prior to July 2021 when the Guideline was released. Subsequently, a version of the scoping tool in use prior to the publication of the Guideline was adopted to scope the SIA. This version of the scoping tool enabled an evaluation of predicted negative social impacts only. The process involved:

1. using early engagement results as inputs to the scoping tool, considering each social impact matter in the Guideline and predicting how likely it would be that the project would impact it (note that characteristics of potential impacts including extent, duration, severity and sensitivity were considered at this initial step and entered into the scoping tool, reproduced in Appendix B)
2. for each matter, considering and assessing the material characteristics of any likely impact;
3. for each matter, considering stakeholder/community opinions and sentiment towards the project;
4. for each matter, determining whether a social impact will arise from the project, and then developing a rationale for the decision;
5. for each matter, determining the level of assessment (and engagement) required in the Phase 1 SIA, and selecting from the following list the most appropriate SIA type:
 - desktop – another specialist study or section of the EIS will provide the information and analysis needed to predict, evaluate and develop a response to the social impact, including relevant primary and secondary research, qualitative and quantitative data, and appropriate engagement with potentially affected people, to establish a baseline and support predictions. If this is the case, the SIA component of the EIS only needs to review the data and findings from the other sources through a SIA lens and cross-reference and integrate them into the overall social baseline and assessment.
 - standard – most information and analysis needed to predict, evaluate and develop a response to the social impact will be provided by another specialist study or section of the EIS, but it will need to be supplemented with further evidence gathering and analysis to fill any gaps and obtain a complete picture from a SIA perspective.
 - comprehensive – only limited or no information and analysis will be provided by another specialist study or section of the EIS. If so, the author/s of the SIA component of the EIS will need to undertake the evidence gathering and analysis needed to predict, evaluate and develop a response to the social impact; and
6. considering each matter and its associated level of assessment (determined by the scoping tool) in the context of the social impact categories in the draft 2017 version of the guideline.

In Phase 2 SIA, the scoping tool results were adapted to the current Guideline. The level of assessment for each social impact identified in the scoping phase is identified in Table 6.1.

3.1.5 Semi-structured interviews

Interviews were conducted in a semi-structured format using a list of predetermined questions. This format provided a flexible structure which allowed the interviewer to create and ask questions about situations as they emerged, and the interviewee to digress and express views freely (Viela, 2018).

The work of Bradshaw and Stratford (2005) regarding qualitative research design and rigour, was helpful in designing the semi-structured interview methodology. The authors provide guidance in relation to participant selection and sampling. Their work explains that in qualitative research, the number of people we interview, communities we observe, or texts we read, is less important than the quality of who or what we involve in our research, and how we conduct that research. Their work emphasises that ‘purposive’ sampling is typical in this type of research, and that the sample is not intended to be representative given the emphasis is usually on the analysis of meanings. These principles were applied to the SIA interviews.

The implementation of the method involved:

1. developing the pre-determined interview questions, designed to explore the social matters identified in the scoping tool;
2. sending an interview invitation letter to the participant. The letter explained the purpose of the interview, the intention to record it, and provided some frequently asked questions. It explained that consent was required, and sought to obtain it in a “free, prior and informed” (Vanclay, 2015, p. 6) fashion;
3. obtaining participant consent;
4. arranging an interview date;
5. conducting and recording the interview;
6. drafting and conducting a qualitative analysis of the interview transcript; and
7. extracting transcript content for use in the SIA.

The semi-structured interview method was also applied in Phase 2 of the SIA.

3.1.6 Community value survey

An online community values survey was conducted during the SIA Phase 1. The survey aimed to:

- identify the demographic and contact details of the participants;
- determine what participants valued about Salt Ash and its surrounds; and
- identify how participants felt about the existing quarry and the project.

Recruitment of survey participants was via distribution of a project introduction letter containing a weblink to the online survey. A total of 125 properties in the nearest residential area were targeted, as well as businesses at Paul’s Corner in Salt Ash. The project introduction letter was hand delivered via a doorknock (or street mailbox delivery if no householder was available at the property).

3.1.7 Social locality development

A social locality is the geographical social footprint of a project where a population may experience (positive and negative) project related impacts. A social locality is not exclusively contained in a project boundary. The Guideline explains that a ‘social locality’ does not have a prescribed meaning or refer to a fixed, pre-defined geographic boundary. This concept is further defined by Vanclay & Esteves (2011) who argue that relationships in and between scales will affect what people understand as impacts. In other words, people may not perceive social impacts created by a project to be those felt exclusively in or immediately adjacent to the project boundary, or at a time when the site is operating. Instead, it is possible for impacts to be felt at locations outside the project boundary and at any time of day (particularly in the event of long-distance haulage routes or complex supply chains).

The above observations were adopted for the project. Care was taken to determine the social locality comprising the area in the project boundary, but also the areas external to the project

boundary where social impacts may arise. The development of the social locality considered factors including but not limited to:

- supply chains;
- transport of goods;
- materials and equipment;
- movement of workers (drive-in-drive-out/fly-in-fly-out working arrangements);
- natural features and recreational values;
- ancillary infrastructure; and
- reputation of other industrial operations in the area.

Both primary and secondary data was collected and analysed in developing the social locality. The specific methods adopted were:

1. a workshop with key project personnel familiar with the existing operations on site;
2. an analysis of complaints received by the quarry operator;
3. a semi-structured interview with two Council representatives; and
4. a literature review of previous studies relevant to the project.

Feedback from DPE SIA staff also influenced the refinement of the social locality in SIA phase 2, whereby it was expanded to include the Salt Ash School and a larger number of properties on the proposed haulage routes.

Results of the scoping activities which assisted the development of the social locality are in table 2.2.

3.2 SIA methodology (Phase 2)

3.2.1 Existing social baseline

An analysis of the existing population was undertaken to establish the social baseline. Secondary data was obtained from the most reliable sources available, primarily being the 2021 Australian Census of Population and Housing.

Census data is available at a number of scales (or Census geographies). Data at the suburb scale (State Suburbs [SSC] Census geography) was selected for the baseline as it provides the most adequate coverage of the social locality. Datasets for the following suburbs were adopted:

- Salt Ash (because the project site is located there); and
- Williamtown and Tomago, because the haulage routes of Nelson Bay Road, Cabbage Tree Road and Tomago Road transect these suburbs before joining the Pacific Highway.

Where available and relevant, comparative data at the NSW state level was obtained and formed part of the baseline for comparison purposes.

A wide range of social indicators were considered prior to conducting the statistical analysis and developing the baseline. The selection of social indicators was made based on those contained in the PSC *Community Strategic Plan 2018-2028* (Port Stephens Council, 2018). The strategic plan is PSC's primary corporate community strategy, developed with community input. It was therefore logical to use complimentary indicators in the baseline. This selection method provided confidence that the social indicators represented the health and wellbeing values, and interests of the communities (Vanclay, 2015) surrounding the project. Each social indicator's relevance to

the four focus areas¹ contained in Council's plan, and its relevance to the social impact categories in the Guideline, is outlined in Table 3.1.

Table 3.1 Community Strategic Plan focus areas and social indicators

Focus Area listed in the <i>PSC Community Strategic Plan 2022-2032</i>	Relevant social indicator contained in the baseline	Relevant social impact categories
Community:	Community profile	Way of life
	Population projections	Community
C1 Community wellbeing – improve wellbeing for a diverse community supported by services and facilities	Family composition	Accessibility
	Indigenous population	Culture
	Place of birth	Health and wellbeing
C2 Recognised - traditions and lifestyles - Our community supports the richness of its heritage and culture	Multiculturalism	Livelihoods
	Education, employment and training	
	Educational status	
Place:	Employment by industry	Way of life
	Weekly income; individual and household	Community
P1 Strong economy, vibrant local businesses, active investment - Our community has an adaptable, sustainable and diverse economy	Council satisfaction survey (2021)	Accessibility
	Road safety statistics	Health and wellbeing
P2 Infrastructure and facilities - Our community's infrastructure and facilities are safe, convenient, reliable and environmentally sustainable	SEIFA	Surroundings
		Livelihoods
P3 Thriving and safe place to live - Our community supports a healthy, happy and safe place		
Council:	Council satisfaction survey (2021)	Health and wellbeing
	Election participation rates	Livelihoods
L1 Governance - Our Council's leadership is based on trust and values of Respect, Integrity, Teamwork, Excellence and Safety		Decision-making systems
L2 Financial management - Our Council is financially sustainable to meet community needs		
L3 Communication and engagement - Our community understands Council's services and can influence outcomes that affect them		

3.2.2 Existing social infrastructure

The *Spatial Services NSW Point of Interest* web service was searched to determine the existing social infrastructure near the project site. The web service allows users to search for and identify the location of features that people may want to see on a map, know about or visit. Point of interest features are maintained within the Spatial Services Digital Topographic Database. The features are listed under the following categories:

- community;

¹ The 'Environment' focus area is not addressed in the SIA baseline, as a baseline consisting of environmental indicators is contained in the EIS.

- education;
- medical;
- recreation;
- transportation;
- utility;
- hydrography;
- physiography; and
- place.

The categories (and the associated features) most relevant to the SIA were selected and used to identify existing social infrastructure relevant to the project.

3.2.3 SIA methods

A range of methods were selected for the SIA. Each method was adopted to address one or more of the matters determined by the Guideline scoping tool, to require further social impact investigations. The selection process involved:

1. populating the scoping tool with the relevant information;
2. determining the level of assessment prescribed by the scoping tool;
3. selecting a method or a combination of methods to satisfy the level of assessment, bearing in mind:
 - a. the specific social impact category to which the assessment related;
 - b. the availability of existing data (if any) held by the project team; and
 - c. feasibility of the methods (e.g. time, cost, reliability).

The methods adopted for the study are outlined below (excluding the semi-structured interview methodology which was implemented in SIA Phase 2 and described in section 3.1.5) The social impact categories to which each method relates are identified in Chapter 6.

Participant observation

Participant observation (PO) is a conventional method used in the social sciences. It is “considered a staple in anthropological studies, especially in ethnographic studies, and has been used as a data collection method for over a century” (Kawulich, 2005, p. 25). The method provides a researcher with a means to collect data about cultural phenomena and the social settings in which they arise. In practice, this involves the researcher either openly or covertly examining the daily life of people under study, by “observing things that happen, listening to what is said, and questioning people, over some length of time” (Becker & Geer, 1957, p. 28).

In her thorough analysis its characteristics, Pearsall (1965) explained that PO is at once a role, a means of getting data, and a methodology for understanding human behaviour in natural contexts. Explanations of these three aspects of the method (Figure 3.1) are offered below:

- role: PO implies the roles of a participant and an observer being present in a social setting. On the observer's side, the role is temporary and to a degree ‘unnatural’. He [sic] may choose from a limited number of forms along a continuum from that of complete observer to that of complete participant” (Pearsall, 1965, p1). Gold (in Kawulich, 2005) nominates four roles that exist on this continuum (see Figure 3.1), which specify the degree to which the researcher involves himself/herself in participation in the culture under study:
 1. at one extreme is the *complete participant*, who is a member of the group being studied and who conceals his/her researcher role from the group to avoid disrupting normal activity. The disadvantages of this role are that the researcher may lack objectivity, the group

members may feel distrustful of the researcher when the research role is revealed, and the ethics of the situation are questionable, since the group members are being deceived.

2. in the *participant as observer* role, the researcher is a member of the group being studied, and the group is aware of the research activity. In this role, the researcher is a participant in the group who is observing others and who is interested more in observing than in participating, as his/her participation is a given, since he/she is a member of the group. This role also has disadvantages, in that there is a trade-off between the depth of the data revealed to the researcher and the level of confidentiality provided to the group for the information they provide.
 3. the *observer as participant* role enables the researcher to participate in the group activities as desired, yet the main role of the researcher in this scenario is to collect data, and the group being studied is aware of the researcher's observation activities. In this role, the researcher is an observer who is not a member of the group and who is interested in participating as a means for conducting better observation and, hence, generating more complete understanding of the group's activities. While the researcher may have access to many different people in this situation from whom he/she may obtain information, the group members control the level of information given.
 4. the opposite extreme role from the complete participant is the *complete observer*, in which the researcher is completely hidden from view while observing or when the researcher is in plain sight in a public setting, yet the public being studied is unaware of being observed. In either case, the observation in this role is unobtrusive and unknown to participants.
- means of gathering data: once a role outlined above is selected and the researcher is 'immersed' in the social setting, the researcher can record his/her observations about the person or group being studied. With a "reasonable vantage point, the right tools, and tables for documentation researchers can begin to collect, compare and count the presence, movement and features of individuals, groups and populations in defined spaces".
 - methodology for understanding human behaviour in natural contexts: In its purest methodological form, PO is the process of "establishing rapport within a community and learning to act in such a way as to blend into the community so that its members will act naturally, then removing oneself from the setting or community to immerse oneself in the data to understand what is going on and be able to write about it" (Kawulich, 2005, p. 24). As described above however, the degree to which a researcher intends to 'blend in' is dependent on the role he/she assumes for the activity. Whatever the case, when implemented successfully, the method will yield data from which the researcher will be able to analyse the human behaviour of interest, and ultimately arrive at a conclusion about the SIA research question(s).

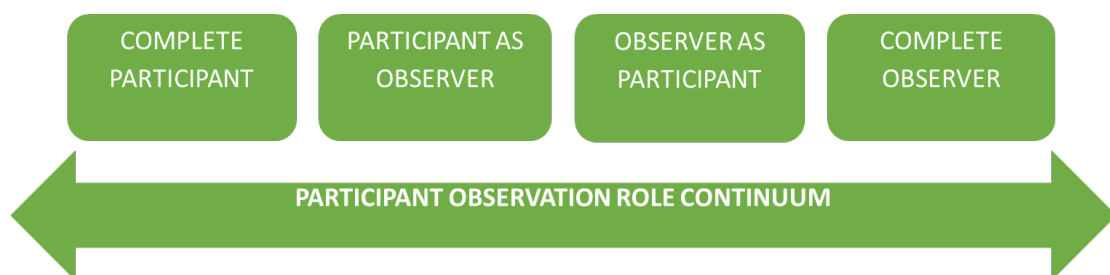


Figure 3.1 Participant observation role continuum

Below it is explained how the methodology was applied in the context of the project.

Application of PO to the project

Element staff used the PO exercises (12 November 2020 and 24 March 2021) to identify and understand the type of road users in the social locality in three time periods:

- 8:30 am – 9:30 am (school drop-off);
- 12 pm to 1 pm; and
- 2:30 pm – 3:30 pm (school pick-up).

Insignificant light vehicle traffic was observed along Oakvale Drive during the day, with heavy vehicles dominating the flow and passing the observer at approximate intervals of 2-3 minutes. No pedestrians were noted in this zone with light vehicles becoming prominent in the afternoon and attributed to residents and people visiting the Oakvale Wildlife Park. Heavy vehicle traffic was considered a risk to road users in this section of the social locality and correlates with community sentiment.

Traffic survey

A traffic survey was conducted in late 2021 to investigate the potential for social impacts for people residing on the project haulage routes. The survey sought to determine:

- if residents were disturbed by traffic at their residences, particularly by heavy vehicles;
- the nature of any identified disturbances;
- the frequency and severity of any identified disturbances; and
- what disturbances could be attributed to sand quarry vehicles operating on the local road network.

Due to COVID-19 social distancing protocols, the survey was first conducted via telephone using phone numbers that are publicly available and accessible on the internet. The survey was supplemented by an in-person doorknock of residential properties.

Properties on one of the project haulage routes below were targeted for the survey:

- **Newcastle supply contracts (approximately 6% of supply contracts)** – trucks exit the site via Oakvale Drive and travel south-west along Nelson Bay Road towards Kooragang Island and Newcastle via Cormorant Road and Tourle Street.
- **Sydney, Central Coast and Hunter Valley supply contracts (approximately 90% of supply contracts)** – trucks exit the site via Oakvale Drive and travel southwest along Nelson Bay Road to the intersection with Cabbage Tree Road, before proceeding west along Cabbage Tree Road and Tomago Road, and then left onto the Pacific Highway and M1 south towards Sydney via Hexham. Trucks may also proceed via the New England Highway and/or Hunter Valley Expressway to the Hunter Valley and beyond. Trucks may also take an alternate route and exit the site via Oakvale Drive and travel southwest along Nelson Bay Road to the intersection with Richardson Road, before proceeding northwest along Richardson Road to Raymond Terrace, and then south onto the Pacific Highway and M1 south towards Sydney via Hexham.
- **North Coast supply contracts (approximately 3% of supply contracts)** – trucks exit the site via Oakvale Drive and travel south along Nelson Bay Road to the intersection with Richardson Road, before proceeding northwest along Richardson Road, north along Medowie Road, and then right onto the Pacific Highway northbound.

The haulage route for Port Stephens supply contracts was not a focus of the survey because it accounts for approximately 1% of supply contracts. On very rare occasions, trucks exit the site via Oakvale Drive and travel east along Nelson Bay Road towards Port Stephens. Properties on the route were considered less susceptible to social impacts and therefore less relevant to the traffic survey.

3.2.4 Data limitations

Recruitment of participants to the study was a challenge. The community information session was facilitated virtually due to COVID-19 considerations and was only attended by two stakeholders.

Refer to section 4.2.4 for more detail on the level of effort implemented to recruit attendees. Although the session was adequate, there is a possibility that face-to-face interviews may have yielded more thorough feedback about the project from participants.

An additional limitation of the SIA relates to consultation with the Aboriginal community. Aboriginal people were not readily identified in engagement methods such as doorknocking, nor did any identified Aboriginal persons participate in the community sessions despite an invitation being distributed widely in hard copy across the social locality. Furthermore, multiple meeting and feedback requests sent by the project team to the Worimi LALC did not yield a response from the organisation. Notwithstanding this scenario, Holcim does have a positive relationship with the Worimi people and has initiated some partnerships with the intent of delivering positive social impacts. Details of these partnerships are in Chapter 6 and Chapter 7.

CHAPTER 4

STAKEHOLDER ENGAGEMENT

4 STAKEHOLDER ENGAGEMENT

4.1 Stakeholder identification

A stakeholder is a group, individual or organisation that is interested in, affected by, or has the capacity to influence a project (Brereton, 2005). Figure 4.1 contains a general list of people and organisations that are likely to be stakeholders in most projects. This list was valuable for providing a starting point for the project stakeholder analysis. There will, however, always be locally specific groups and circumstances that influence the local cultural context (Vanclay, 2015).

The locally specific stakeholders are known to Holcim courtesy of its long-term local presence and relationships derived from the quarry. As part of scoping the SIA, a high-level stakeholder analysis was undertaken first by leveraging the knowledge held by Holcim staff in attendance at the scoping meeting.

Following the meeting, a desktop analysis of information provided by the project team and online sources was completed to identify other stakeholders potentially interested in the project. Semi-structured interview participants also nominated some project stakeholders known to them. The project stakeholder list is in the stakeholder analysis (see section 4.3).

Residents	<ul style="list-style-type: none">• In the affected area• Immediate neighbours
People in host communities	<ul style="list-style-type: none">• Those that relocate as a result of a planned resettlement or through their own migration• People in communities near where construction workers or other in-migrants will be located
Other communities	<ul style="list-style-type: none">• More distant residents whose livelihoods may be affected as a result of the project• Communities near associated works such as irrigation channels, quarries, roads, railways, and transmission line corridors
Project employees	<ul style="list-style-type: none">• Quarry workers and their families
Indigenous people	<ul style="list-style-type: none">• Non-resident Indigenous or other land-connected peoples who may have spiritual attachment to the land/river
Non-government organisations (NGOs)	<ul style="list-style-type: none">• Local, national and international NGOs (for example, conservationists) interested in ecological or heritage values that may be influenced by a project
Other stakeholders	<ul style="list-style-type: none">• Developer and associated contractors, regulatory agencies, local regional and national governments, funding or development agencies

Figure 4.1 Stakeholders likely to be involved with extractive industry projects (Vanclay; 2015)

4.2 Stakeholder engagement methods

4.2.1 Community hotline and email address

The community hotline and email address were established for the EIS and provided a means for stakeholders to contact the project team. The lead EIS author's contact details were included in all communications material distributed for the project.

It was acknowledged in SIA Phase 1 that not all project stakeholders may have had access to an internet connection and/or a device to access internet services. For this reason, a doorknock of residences closest to the site and distribution of a hard copy project introduction letter (refer to section 3.1.3) was the initial stakeholder engagement methodology implemented.

4.2.2 Project website

The project webpage (<https://www.holcim.com.au/salt-ash-sand-quarry>) was established at the start of the SIA Phase 1 and updated as the project progressed through the EIS. The webpage is the main source of information for the project.

Information on the webpage includes an overview of the existing operations, including aspects such as environmental and social responsibility initiatives. This section illustrates the project's development consent history and license agreements. It also contains a description of the environmental impact statement planning process, under which the SIA is being conducted.

4.2.3 Project update

During SIA Phase 2 (February 2021), a project update was developed and distributed to the social locality. The project update:

- described the project background;
- provided a site illustration and EIS progress update;
- described the next steps for the planning application;
- contained an invitation to register for the community information session (see section 4.2.4); and
- contained contact details for future correspondence and the community session registration.

The project update was distributed to all residential and business properties in the Salt Ash post code, and to post office boxes in the Tilligerry and Tanilba local post offices. This was the second piece of written project correspondence widely distributed in the social locality (refer section 3.1.3 for details of the first written correspondence).

4.2.4 Community information session

During SIA Phase 2 (late March 2021) a project community information session was held. Due to COVID-19 social distancing requirements applicable at the time, a teleconference session was held as an alternative to a face-to-face session.

Six individuals responded to the invitation and registered for the session. To maximise participation at the session, phone calls were made to individual project stakeholders encouraging their attendance and again inviting their feedback. Two of the six individuals that registered for the session attended. In the days following the session, unsuccessful attempts were made to reschedule the session for the four individuals that originally registered but did not attend.

Feedback obtained from the community information session participants is in Chapter 6.

4.2.5 Stakeholder meetings

The following stakeholders were identified and invited to a meeting with the SIA lead and/or Holcim staff during both the SIA Phase 1 and SIA Phase 2:

- the Honourable Kate Washington Member of NSW Parliament (MP).
- CEO Worimi Local Aboriginal Land.
- Port Stephens Council.
- Mr Bruce MacKenzie (including Macka's Australian Black Angus Beef).
- Oakvale Wildlife Park.
- Hellfire Paintball.
- Salt Ash Primary School.
- Paul's corner businesses.

Stakeholders that accepted the meeting invitation were the Salt Ash Primary School, Port Stephens Council, Kate Washington MP, Mr Bruce MacKenzie, and Oakvale Wildlife Park.

Feedback obtained from the meeting participants is in Chapter 6.

4.2.6 Summary of stakeholder engagement activities

A summary of the SIA stakeholder engagement activities completed in SIA Phase 1 and SIA Phase 2 is in Figure 4.2.



Figure 4.2 Stakeholder engagement activities summary

4.3 Stakeholder analysis

Results of the project stakeholder analysis conducted in SIA Phase 1 are in Table 4.1. Note this table identifies stakeholders considered for the SIA but excludes regulatory agencies that were consulted separately for the EIS. The issues of interest, and engagement tools catering for each stakeholder group is shown. The predicted level of involvement and interest is also show for each stakeholder group.

Table 4.1 Stakeholder analysis

Stakeholders	Issues of interest	Engagement tools implemented	Level of involvement / engagement	Level of interest
Road users Key road (Oakvale Drive) and haulage route road users Pedestrians Cyclists	Road safety Travel delays Road condition and maintenance	Project website Community information session Online survey Stakeholder correspondence	Inform / consult	High
Government authorities (excluding emergency services) The Honourable Kate Washington MP PSC	Road safety Biodiversity impacts Community investment	Semi-structured interviews Project website Online survey Stakeholder correspondence	Inform Consult Involve Collaborate	Moderate
Property owners / residents Residents of Oakvale Drive and along the haulage routes Tomaree Ratepayers Association Vulnerable stakeholders	Road safety Road condition Aesthetic impact to area Light impacts at night Biodiversity impacts	Doorknock interviews Community information session Online survey Stakeholder correspondence	Inform Consult Involve Collaborate	High
Aboriginal groups and stakeholder Worimi People Worimi Conservation Lands	Invited on multiple occasions, but did not participate in engagement or consultation activities			
Local businesses Pauls corner businesses Oakvale Wildlife Park Macka's Sand Macka's Australian Black Angus Beef	Road safety Road condition Impact to business operations	Stakeholder meetings Semi-structured interview	Inform Consult Involve Collaborate	High

Stakeholders	Issues of interest	Engagement tools implemented	Level of involvement / engagement	Level of interest
Port Stephens Koala Sanctuary				
Other Salt Ash Primary School Busy Bee's childcare centre	Road safety Pedestrian safety	Semi-structured interview Community information session Online survey Stakeholder correspondence	Inform / consult	High

CHAPTER 5

EXISTING SOCIAL BASELINE

5 EXISTING SOCIAL BASELINE

This chapter contains the social baseline developed for the project. The baseline is the nominated set of social indicators for communities potentially affected by the project. It provides a point of comparison; it can be used as reference data against which to measure the impacts of the project as it develops, and/or to determine the adequacy or otherwise of existing facilities (Vanclay, 2015).

The social baseline has been developed using Census data for the suburbs of Salt Ash, Williamtown and Tomago (refer section 3.2 for the baseline development methodology). The suburbs are collectively hereafter referred to as the 'study area', only in Chapter 5.

5.1 Population

The 2021 census shows that the study area has a residential population of 2134, which decreased marginally from the 2016 census. The 2021 census determined the population characteristics in Table 5.1.

Table 5.1 Population characteristics

	Salt Ash		Williamtown		Tomago	
Median Age	46		56		60	
Median weekly income	\$1,461		\$889		\$788	
People	Male	Female	Male	Female	Male	Female
	52.8%	47.2%	48.8%	51.2%	36.7%	6.7%

According to the ABS (2021), the local area's population has been reasonably stable for the past five years.

Salt Ash is the host suburb of the project and as shown in Table 5.1, its population has a comparatively younger median age. This is potentially favourable for the working population residing there, who may find employment, supplier or other business opportunities derived from the project if it proceeds.

5.2 Population projections

To anticipate the projected population of the study area, data was sourced from the Australian Bureau of Statistics (ABS) census from 2006, 2011, 2016 and 2021. It is important to note that the data has in-built inaccuracies across the various census years, as the suburb boundaries have changed slightly. This is most evident for the year 2006 - 2011, leading to inaccuracies in the comparability of the datasets and the projected populations.

Aside from these limitations, the Census data illustrates that for the study period (2006 – 2016) the population has increased by approximately 25%. The largest increase was in Tomago which increased by 185%, or 175 people between 2006 and 2011. Williamtown has seen the smallest change in population with just a 7% increase over this period.

For the wider region of Port Stephens, the PSC has calculated an increasing population between 2016 and 2021 of approximately 6%. This may be attributed to the region's reputation as a coastal retirement option among Australia's aging population (McPake, 2017), and it indicates there will be ongoing demand for sand required for residential and other construction needs.

5.3 Indigenous population

The Worimi people are the traditional custodians of the land which the study area now sits. Before contact with settlers, their people extended from Port Stephens in the south to Forster/Tuncurry in the north and as far west as Gloucester.

The area of Newcastle was traditionally inhabited by the Awabakal people. Their traditional territory spread from Wollombi in the south, to the Lower Hunter River near Newcastle and Northern Lake Macquarie.

According to the 2021 Census data, the Aboriginal and Torres Strait Islander population of the study area is 135 individuals (ABS, 2021).

The LALC operational in this region is the Worimi LALC. The vision of the Worimi LALC is to improve, protect, and foster the best interests of its members and all Aboriginal persons within the council's area. The Worimi LALC operates the Murrook Cultural Centre located just 4 kilometres (km) east of the project. The purpose of the centre is to gather, sustain, protect and teach Aboriginal cultural to all people with an emphasis on Worimi culture.

If it proceeds, there is an opportunity for the project to support Aboriginal cultural awareness among Holcim staff, the management of Aboriginal cultural heritage artefacts under the guidance of Worimi representatives, and the revegetation of native landscapes in partnership with Worimi people. Details are provided in final chapters of this report.

5.4 Place of birth

Of the populations in Salt Ash, Williamtown and Tomago, approximately 80% of residents were born in Australia. The remaining residents are from countries such as England, Scotland and Germany.

Salt Ash has the highest population of residents born in Australia at 84.7%. From the 2021 Census data, the proportion of Australian residents that are born overseas (first generation) or have a parent born overseas (second generation) is 51.5%.

The top five most reported ancestries in the 2021 Census followed previous trends and included English (33.0%), Australian (29.9%), Irish (9.5%), Scottish (8.6%) and Chinese (5.5%).

Regional and farming communities in NSW commonly have lower levels of culturally diverse people (Forrest, 2017). This may be due to a lack of services to immigrants and first-generation families such as jobs that will accommodate people whose first language is not English, or it may be that immigrants seek communities where their ethnic identity is already represented.

Despite being less culturally diverse, engagement activities adopted by Holcim (and this SIA) must respond to the possibility that languages other than English are spoken by local residents. To offset potential project communication barriers, doorknocking (see Chapter 3) was an engagement method adopted for the SIA.

5.5 Employment

The local workforce engages with a variety of industries and professions. This is likely because residents are within a 30-minute drive to the centre of Newcastle (refer Figure 2.1) which offers a broad range of job opportunities. The most common occupation is technicians and trades, followed by machinery operators and drivers, service workers, labourers and managers. If the project proceeds, employment opportunities would potentially be created in these common occupation categories. Examples might include trades, machinery operators, and drivers.

There are distinctions in the type or employment of the three suburbs in focus. Williamstown is home to Newcastle Airport which has a Royal Australian Air Force (RAAF) presence, and as a result, a small proportion of its residents currently serve in the Australian Defence Force. Tomago has the smallest population (269) of the three suburbs applicable to the baseline. The Tomago workforce is dominated by heavy industry with most of the workforce engaged as either technicians, labourers or machine operators. The community of Salt Ash is mostly employed as trade workers, service workers and managers.

5.6 Status of industry

The Newcastle region has had an economy of industrial based manufacturing and shipping since 1915 (Kear, 2018). Beginning in 1911, large scale steel manufacturing and associated industry rapidly developed around the Port of Newcastle driven by the first world war. By the 1980's global demand for steel produced in Newcastle collapsed as competition with Asian producers increased and profitability for one of the regions key economic utilities fell. The closure of Newcastle's steelworks in 1999 was labelled as Australia's largest deindustrialisation event at the time (Atteridge, 2021).

The 1996 Census shows that 18.6% of the Newcastle population were employed in mining, manufacturing and infrastructure (ABS, 1996) compared to 2019 data which shows that the same jobs account for just 6.7% of employment (ABS, 2019).

Today, the main industries applicable to the baseline suburbs are road and freight (15.7% in the suburb of Tomago), defence (39.1% in the suburb of Williamstown), healthcare (10% in the suburb of Tomago) and some iron smelting and steel manufacturing that still takes place. Industry of employment was underreported in the suburb of Salt Ash, with just 16.4% of respondents to the 2016 Census submitting their employment.

The Port Stephens LGA employs 27,346 people in a range of sectors and has an annual economic output of \$13.8 billion (Australian Bureau of Statistics, 2019). Of this economic output, 27% is generated within the study area (Port Stephens Council, 2021). It is derived from Newcastle Airport, the RAAF base, aluminium smelting, water treatment facilities as well as the economic output of sand quarries along Stockton Bight, making the study region an economic hub for Port Stephens.

Residents in Salt Ash, Williamstown and Tomago account for approximately 3.3% of the population for the Port Stephens LGA. Location and access to transport infrastructure create a strong competitive advantage for Port Stephens and the three suburbs. These transport networks support a manufacturing sector at Tomago which includes metals manufacturing, heavy engineering and light industrial activities.

In May 2020, the NSW Government announced Williamstown as NSW's fifth Special Activation Precinct (SAP), which will fast-track planning and prioritise investment to further stimulate economic activity and development (Port Stephens Council, 2022). The SAP and planned upgrade of Nelson Bay Road are two examples of future major projects in the region which will maintain the strong construction industry demand for fine-grade sand that the project would yield.

5.7 Income

The median weekly household income for the three suburbs is \$1046 (Figure 5.1).

Figure 5.1 highlights the variance in household income rates between the suburbs. Median personal income is more uniform; Salt Ash measured at \$610 per week, Williamstown at \$607 per week and Tomago at \$561 per week.

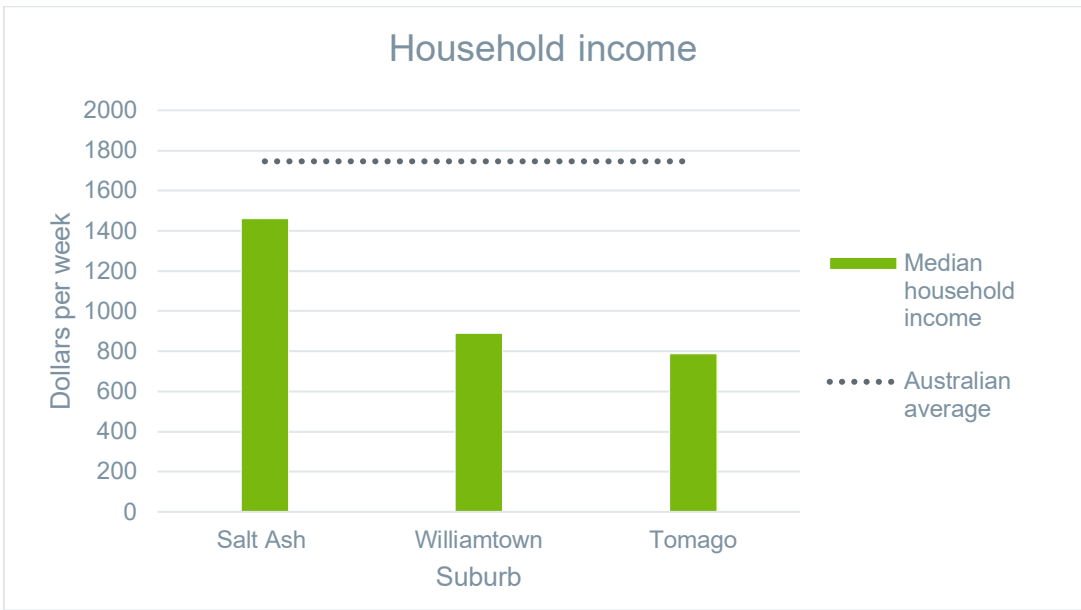


Figure 5.1 Median weekly household income

5.8 Housing

Two themes emerge from an analysis of housing across the three suburbs. Salt Ash and Williamtown comprise predominately standalone dwellings or dwellings that share walls (semi-detached, terrace house or townhouse (ABS, 2021). However, Tomago is comprised of separate houses or dwellings described as 'other'.

The composition of homes is also significantly different across these three suburbs as outlined by Figure 5.2.

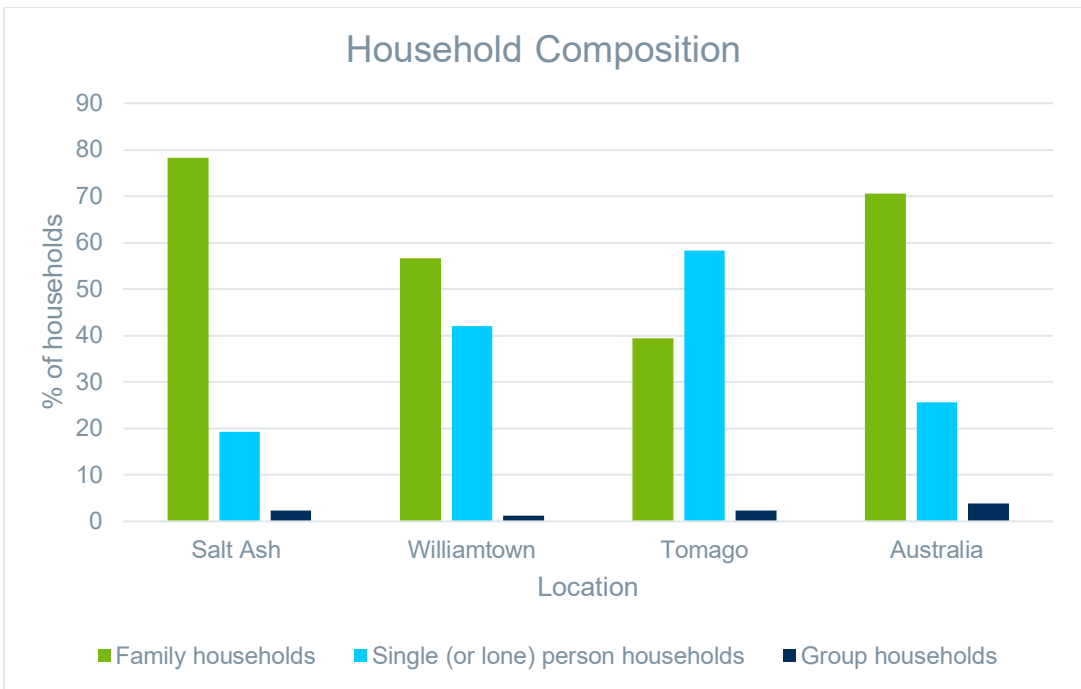


Figure 5.2 Household composition

There are 501 family households, 266 single person households and 17 group households distributed unevenly across the suburbs. Most properties in Salt Ash contain families. This distribution parallels the average household composition found across Australia.

Williamstown has a similar number of family and lone person households with 57% and 42% respectively. This is likely accounted for by employees of the airport and RAAF base who live alone or travel frequently for work.

Tomago has an inverse to the norm with more single person households (58%) than family households (40%) which may indicate people living for short periods of time near the smelting and industrial work areas.

5.9 Education

There is one school in the area surrounding the project. Salt Ash Public School (see Figure 2.2) is a primary education facility located at the corner of Cecilia Close and Salt Ash Avenue. Salt Ash also has one childcare centre (Busy Bees) on Nelson Bay Road, approximately 400m east of Paul's Corner.

Outside the suburbs of Williamstown, Tomago and Salt Ash there are a number of schools located within a 10-minute drive for residents. Wirreandra and Medowie Public Schools are located north of Newcastle Airport, while Beresford and Thornton Public Schools are located to the west of Tomago.

There are many options for parents with young children, including Medowie Gumnut Preschool, Uniting Early Learning Medowie, Bright Start Early Learning Heatherbrae and Samaritans Woodberry Early Learning Centre.

The 2021 Census established that there is generally an equal split between people attending primary, secondary and tertiary education institutions. Tomago deviates from this trend because none of its census respondents attended tertiary institutions.

5.10 Socio economic index

Socio Economic Indexes for Areas (SEIFA) is a suite of indexes that have been created by the ABS from social and economic Census information (ABS, 2016). Each index ranks geographic areas across Australia in terms of their relative socio-economic advantage and disadvantage.

It should be noted that the areas studied for the IRSD are only approximate to the boundaries as set by the ABS.

The Index of Relative Socioeconomic Disadvantage (IRSD) is a general socio-economic index that summarises a range of information about the economic and social conditions of people and households within the Port Stephens LGA. This index includes only measures of relative disadvantage; a low SEIFA score indicates relatively greater disadvantage in general. For example, an area could have a low score if there are (among other things) many households with low income, many people with no qualifications, or many people in low skill occupations. Conversely, a high SEIFA score indicates relative advantage in general.

The SEIFA score for the study area in 2016 was 893 (Table 5.2), which ranks in the first quintile and can be described as a disadvantaged area when considering access to material and social resources, and the ability to participate in society. If it proceeds, the project may influence economic opportunity in the social locality and potentially improve socio-economic advantage reflected in SEIFA scores.

Table 5.2 The index of relative socioeconomic disadvantage

IRSD	Salt Ash	Williamstown	Tomago	Study area
Score	961	891	827	893
Quintile	2	1	1	1
Percentile	29	13	6	16

5.11 Existing social infrastructure

Social infrastructure refers to facilities and services that enhance the social capacity of communities and may include infrastructure related to health, housing, youth, aged care, leisure, community safety facilities and road safety (Franks, 2012).

The social infrastructure in the social locality will provide a reference point against which social impacts may be measured if the project proceeds. Such impacts can take the form of a decrease in the quantity, diversity, or capacity of the existing social infrastructure, courtesy of demand from an expanded workforce.

Conversely, an influx of staff and their families, or changes to the footprint of a project may stimulate new social attributes of the communities, bolster organisational capacities, and contribute to the supply of services.

The following key social infrastructure was identified, which underpin the social wellbeing of the population:

- Newcastle Airport;
- RAAF base;
- Stockton Beach;
- Port Stephens Church of Christ Salt Ash;
- Salt Ash Community Hall;
- Worimi State Conservation Area;
- Worimi Regional Park;
- Murrook Educational Centre;
- Salt Ash Public School; and
- Oakvale Wildlife Park.

5.12 Liveability and community values

PSC conducted a liveability index in September 2020 that included over 3,900 participants. The study was designed to understand what people value about a place and how places are performing. The study involved the broader community of the Port Stephens LGA as well as the local area of Salt Ash. Salt Ash was the only community within the study area that was involved in the liveability index. The community of Williamstown and Tomago were not the focus.

From the community of Salt Ash, 202 people contributed to the study. The broader area of Port Stephens scored a 66/100. The area defined as Salt Ash for this study scored 43/100.

The research found inadequacies in the following attributes were likely to have led to this low score:

- walking/jogging/bike paths that connect housing to communal amenity;
- general condition of public open space;
- spaces suitable for specific activities or special interests;
- evidence of recent public investment;
- protection of the natural environment;

- local businesses that provide for daily needs; and
- sense of neighbourhood safety.

The liveability score also investigated aspects that the community value. Elements of nature such as views, topography and water systems rank highest within Salt Ash, with 64% of people considering this an important feature of their area. Also ranking highly within Salt Ash is locally owned businesses with 61% of respondents noting this as a significant feature of the suburb that they value. Other areas of interest for the respondents include the condition of public spaces, sense of safety within the local neighbourhood and having amenities that supply the community with their daily needs.

The SIA and other specialist studies prepared for the EIS will respond to the liveability aspects that the community values, for example road safety via the participant observation method (refer section 3.2.3), and water systems via the Groundwater Impact Assessment (GIA) in the EIS.

CHAPTER 6

ASSESSMENT OF SOCIAL
IMPACTS

6 ASSESSMENT OF SOCIAL IMPACTS

The aim of this chapter is to:

1. present a summary of the SIA Phase 1 (scoping) findings and the social matters that were identified for further investigation in the SIA; and
2. present the findings of the Phase 2 SIA and undertake the further assessment of those matters referred to above.

6.1 SIA Phase 1 assessment

The SIA Phase 1 identified a range of potential positive and negative project impacts for further investigation in the SIA Phase 2. Table 6.1 lists these impacts and the methods selected to investigate them. Note the terminology used for the levels of assessment in Table 6.1 is consistent with the terminology used in the 2017 version of the Guideline, which was applicable at the time of scoping the SIA.

Table 6.1 Social impacts for investigation in the SIA

Social impact category (and predicted impact to people)	Level of assessment (adapted from scoping tool)	Aspect outline	Assessment methodology
Positive impacts			
Community	Desktop	The project has donated sand to the Oakvale Wildlife Park in the past, to maintain the animal enclosures. The most recent donation occurred in 2020. This contribution reduces operating costs and enables the organisation to reallocate budget to other key functions. Holcim propose to continue this donation as required to assist in maintaining ecotourism and education in the Port Stephens area. Holcim will continue to receive community requests for sand and consider them on a case-by-case basis.	Semi-structured interviews with stakeholders in the social locality.
Community	Desktop	Holcim allocate staff one workday in a calendar year to volunteer in the community. In the past this has taken the form of staff members contributing to dune care and rehabilitation and assisting the community to rebuild fencing after the bushfires. Volunteering is undertaken on an ad-hoc / when required basis to contribute positively to the community. Some examples of other local volunteering activities include the clean-up of illegal dumping at nearby sand dunes (i.e. organising removal of illegal dumping of rubbish, cars, boats), working with Council and Police to prevent illegal dumping activities, and revegetation tree planting near to the site, with the Worimi group.	Review of the volunteering policy in conjunction with semi-structured interviews with stakeholders in the social locality.
Surroundings	Desktop	As part of the project, clearing native vegetation is required for sand extraction and much of this can occur under existing consents. Prior to clearing, Holcim propose to invite Oakvale Wildlife Park representatives to come on site and identify	Semi-structured interviews with stakeholders in the social locality.

Social impact category (and predicted impact to people)	Level of assessment (adapted from scoping tool)	Aspect outline	Assessment methodology
		any branches / leaves (in the proposed clearing area) suitable for their Koala program. This endeavour will assist the facility in managing this endangered species.	
Surroundings	Desktop	Holcim's management are considering financial donations to the Port Stephens Koala Sanctuary to assist them in managing the facility and looking after this endangered species. Holcim will consider in kind donations from time to time such as donations of material for events or emergency works.	Semi-structured interviews with stakeholders in the social locality.
Livelihoods	Desktop	Holcim promote a "buy local" policy to promote the development of local businesses and operations in the Port Stephens area. Currently, the provision of fuel to site, electricians, truck drivers, food catering, cleaners and maintenance team are sourced locally from within the community.	Semi-structured interviews with stakeholders in the social locality.
Livelihoods	Desktop	Holcim pursue commercial opportunities for Aboriginal people. These initiatives take the form of partnerships with local businesses that are owned by Aboriginal people, or are managed by or employ Aboriginal people. Examples include tree planting/landcare partnerships and other employment/income generating activities.	Review of the Aboriginal employment policy in conjunction with semi-structured interviews with stakeholders in the social locality.
Negative impacts			
Way of life	Desktop	The proposed increase in production and transportation has the potential to increase noise levels experienced at the Oakvale Wildlife Park and Salt Ash residences to the south of Nelson Bay Road. Previous studies also raised noise/vibration from trucks as an issue.	Noise and Vibration Impact Assessment (NVIA) in conjunction with stakeholder interviews and doorknocking
Access	Standard	The project will transport additional sand products both east and west along Nelson Bay Road and beyond via the same transportation routes as existing operations. Future and cumulative quarry traffic may contribute to impacts on the condition of the road network, and the potential for quarry traffic non-compliance with weight and hours of operation conditions.	Traffic Impact Assessment (TIA) in conjunction with stakeholder interviews and doorknocking
Heritage	Desktop	The presence of numerous recorded sites on and near the quarry demonstrate that the local landscape was used by Aboriginal people in the past and that material traces of this landscape use have survived in the form of Aboriginal objects and archaeological deposits.	Aboriginal Cultural Heritage Assessment Report (ACHAR)
Community	Standard	Mental health of residents in the area has been influenced by Per- and poly-fluoroalkyl substances (PFAS) and Perfluorooctane sulfonate (PFOS) contamination originating at the Williamtown RAAF base. The proposed dredging operation has a logical	GIA in conjunction with stakeholder meetings and doorknocking

Social impact category (and predicted impact to people)	Level of assessment (adapted from scoping tool)	Aspect outline	Assessment methodology
		connection to groundwater, and this may generate adverse perceptions to the affected individuals.	
Community	Standard	Sand haulage along local roads (Oakvale Drive) presents a potential safety risk to road users. Previous studies of nearby quarries have also raised speeding trucks on Oakvale Drive and members of the public accessing site without authority as safety issues.	TIA in conjunction with doorknocking
Surroundings	Desktop	The project requires the clearing of 1.75 ha of native vegetation, not currently approved via historical development consent, which has the potential to contain threatened flora species or their habitat and suitable habitat for threatened fauna species. The native vegetation communities may also meet the classification of a Threatened Ecological Community (TEC) and require biodiversity offsetting.	Biodiversity Development Assessment Report (BDAR) in conjunction with stakeholder interviews

6.2 SIA Phase 2 assessment

In this section, the SIA Phase 2 assessment assumes the project will implement no mitigation or enhancement measures. However, a range of these measures are proposed for implementation. The measures are identified in Chapter 7 and have the effect of reducing the non-enhanced positive or unmitigated negative social impact significance of the impacts identified in this chapter.

The evaluation of the predicted social impacts is made according to technical supplement associated with the Guideline. For each predicted impact in Table 6.1, the evaluation considers the impact likelihood and magnitude. Social impact categories from the Guideline that are omitted from the discussion below are considered immaterial to the SIA.

6.2.1 Assessment of non-enhanced positive impacts

Community

Sand donations

Holcim has donated sand to the Oakvale Wildlife Park in the past, to ensure the park has sufficient material to maintain the animal enclosures. The most recent donation occurred around 2 years ago, and Holcim management staff are considering whether this venture can be continued. Though this donation, the wildlife park budget that would have been spent on sand and transporting it to the park can be reallocated to other key operational functions in the business.

The project is expected to positively influence community cohesion by assisting the park to continue providing ecotourism and education services in the social locality. Without enhancement, it is predicted that the project would have a medium positive impact significance (likely, with a minor magnitude) for community cohesion in the social locality if it receives planning approval.

Volunteering

As part of the employment package at Holcim, all staff are allocated one day per calendar year to volunteer in the community.

Some examples of local volunteering activities include the clean-up of illegal dumping at nearby sand dunes (i.e. organising removal of illegal dumping of rubbish, cars, boats), and working with Council and Police to prevent illegal dumping activities. Holcim staff have also dedicated time to revegetation tree planting near the site, in collaboration with the Worimi group.

The project is expected to positively influence community cohesion by strengthening community resilience to unexpected events (floods, and bushfires) in the social locality. Without enhancement, it is predicted that the project would have a medium positive impact significance (likely, with a minor magnitude) for community resilience in the social locality if it receives planning approval.

Surroundings

Vegetation donation

Holcim propose to clear 1.75 hectares (ha) of native vegetation within the development footprint to establish and extract sand from the dredge pond. This area was identified in the BDAR (Appendix E of the EIS) as Koala habitat and its removal is in addition to 17.55 ha vegetation previously consented for clearing under the established development consent boundaries (1980 and 1992).

There is the potential for three or four suitable Koala food trees to be present in development footprint, and Holcim propose to offer to donate the leaves of felled species to the Oakvale Wildlife Park and Port Stephens Koala Sanctuary to help feed this species. The donation of Eucalypt species leaves to feed Koala's at the wildlife park is not proposed to offset the loss of habitat, but it is a better outcome than mulching or disposing of this material to landfill.

In addition to the Koala food tree donations, Holcim is involved in the following initiatives designed to positively influence native vegetation surrounding the project (these positive outcomes would cease should the project not proceed):

- Holcim has worked with the Worimi group and attended revegetation training and trials. Holcim has provided access to site from time to time for Worimi people to view cultural material (at an agreed time for safety reasons).
- Holcim undertakes tree planting at one of its satellite sites that produces sand, imported by the Salt Ash operation. This occurs on an annual basis. The Worimi group are also involved in periodic (e.g. 6 monthly) weed control activities at nearby sites. Over the last 12 months Holcim has been strengthening its relationship with the Worimi group, by relying on its representatives to undertake vegetation conservation activities at a nearby sand location.
- Holcim has a relationship with the Salt Ash Public School. Holcim staff collect seeds which are provided to the school, School students learn about propagation and grow the seedlings, Holcim then purchase the seedlings from the school, and Worimi people manage the planting program. Holcim also provides seed stock to Tanibla Bay, and the same process is repeated with the local conservation group there.

Considering these aspects of the project, it is expected to positively influence access to and the use of natural resources by organisations managing the endangered Koala species in the social locality. Without enhancement, it is predicted that the project would have a low positive impact significance (possible, with a minimal magnitude) if it receives planning approval.

Financial donations

Holcim's management are considering financial and in-kind donations to the Port Stephens Koala Sanctuary to assist them in managing the facility and looking after this endangered species. Financial and in-kind donations are considered on a case-by-case basis by Holcim management staff.

With financial donations, in conjunction with making Koala food trees available to the Port Stephens Koala Sanctuary, the project is expected to positively influence the operation of organisations managing this species in the social locality. Without enhancement, it is predicted that the project would have a medium positive impact significance (possible, with a minor magnitude) if it receives planning approval.

Livelihoods

Buy local policy

Holcim promote a “buy local” policy in the community, to promote the development of local businesses and operations in the Port Stephens area.

By continuing to source local suppliers to service the operation, the local economy benefits through trade and the development of important skills and services. Without enhancement, it is predicted that the project would have a high positive impact significance on the local economy within the social locality (likely, with a moderate magnitude) if it receives planning approval.

Aboriginal employment and training

At the corporate level, Holcim developed its ‘social procurement spend’ target which aims to increase the value of Holcim contracts awarded to Aboriginal suppliers each year. Social procurement contracts to the value of \$9.75m were awarded by Holcim across its Australia and New Zealand businesses in 2021. Alongside this social procurement objective, Holcim developed its Reflect Reconciliation Action Plan (RRAP) to establish and maintain sustainable and mutually beneficial relationships with Aboriginal and Torres Strait Islander people (Holcim, 2022).

As part of the RRAP process, Aboriginal employment targets were set to promote the development of Aboriginal people in the communities associated with Holcim projects, and to contribute to the national agreement on closing the gap (Commonwealth of Australia, 2022). Within the context of Salt Ash operations, these initiatives take the form of partnerships with local businesses that are owned, run, or employ Aboriginal people.

Holcim have an existing relationship with the Worimi group, and Elders of the group have conducted cultural awareness training on site in the past. The Worimi group have been cultural advisers and assisted with training and procedures for unexpected finds at a nearby dune operation that feeds the Salt Ash site.

Considering the RRAP, in conjunction with direct First People’s employment or involvement in the supply chain, the proponent can potentially contribute to improving social outcomes for Aboriginal and Torres Strait Islander people. Without enhancement, it is predicted that the project would have a medium positive impact significance (unlikely, with a moderate magnitude) for closing the gap initiatives in the social locality if it receives planning approval.

6.3 Assessment of unmitigated negative impacts

Way of life

Acoustic (noise) and vibration impacts

Stakeholder responses to the survey and door knocks conveyed noise and vibration impacts as an issue in the social locality. These issues were also discussed in the community information session.

Residents of Nelson Bay Road and Medowie Road stated that heavy vehicle movements along local roads create noise and vibration impacts that shake their homes (a scenario corroborated by Nelson Bay Road upgrade consultation results [see Transport for NSW, 2021]). Additionally,

a resident of Cabbage Tree Road perceives the movement of empty trucks on local roads to be louder than fully loaded heavy vehicles. The owner of the Oakvale Wildlife Park confirmed that colorbond fencing had been erected along the facility's northern boundary to reduce vehicle noise. Additionally, this stakeholder reiterated the point made by the Cabbage Tree Road resident, confirming that unloaded trucks make the most noise when they travel over potholes and their trailers vibrate.

In contrast to these respondents, one resident of Cabbage Tree Road nominated noise from RAAF aircraft to be the dominant source of noise. It is likely that the proximity of receivers to the various noise and vibration sources in the area determines which operation is likely to be the most intrusive for the resident. These responses point to cumulative noise impacts in the area, which could be influenced by the project.

The NVIA assessed the potential construction, operational and road noise emissions associated with the project on identified receivers. Refer to Table 2 of the NVIA (Appendix G of the EIS).

Considering the above information, project-related unmitigated noise impacts to people in the social locality are predicted to be of high significance (likely and moderate magnitude). Refer to section 7.3 for mitigation of negative social impacts.

Access

Impacts to existing transport infrastructure

Survey, doorknock and interview respondents have all noted the current heavy vehicle volume on the road network and raised concern that additional vehicles could negatively impact the condition of the road surface. The owner of the Oakvale Wildlife Park noted that vehicle noise is generated by heavy vehicles hitting potholes and confirmed that in places the road condition is poor.

A Stage 5 Road Safety Audit (Appendix H of the EIS) was commissioned for the main transport routes used by project heavy vehicles including:

- Oakvale Drive, Salt Ash;
- Nelson Bay Road between Oakvale Drive, Salt Ash and Cabbage Tree Road, Williamtown; and
- Cabbage Tree Road/Tomago Road between Williamtown and Tomago.

The audit also included access intersections at Anna Bay (Nelson Bay Road/Horse Trail), Tanilba Bay (Lemon Tree Passage Road/Oyster Cove Road) and Cabbage Tree Quarry (Cabbage Tree Road/Quarry Access Road).

The audit established that:

- ongoing maintenance is required to line marking, delineating, and signage in Nelson Bay Road;
- ongoing maintenance is needed to pavement in Cabbage Tree Road / Tomago Road; and
- ongoing maintenance to line marking, delineation and signage is needed in Cabbage Tree Road / Tomago Road.

While the road safety audit made ongoing maintenance recommendations, it did not reference the road condition (potholes) described by stakeholders. Holcim does, however, make local infrastructure contributions to PSC for road maintenance and the levy is calculated by attributing a financial rate to the annual production of sand.

While maintenance and upkeep of public infrastructure is not Holcim's responsibility, the perceived cumulative impact truck movements have to the road network in the area is important to the community. Without mitigation, the movement of sand trucks to and from the project could

negatively influence public infrastructure and community access to it. This unmitigated impact is predicted to be of high significance (likely and moderate magnitude). Refer to section 7.3 for the proposed mitigation and management measures.

Heritage

Impacts to Aboriginal cultural heritage

The expansion of sand extraction operations has the potential to impact Aboriginal culture, with specific reference to connection to country and land. An ACHAR was commissioned to assess potential impacts on Aboriginal cultural heritage values and objects that may be present on site (refer to Appendix K of the EIS).

To consult the Worimi people and determine how the Aboriginal community perceives the project, meeting invitations were offered to a representative of the Worimi LALC during March and May 2021. The invitations were not accepted by the LALC. Subsequently, the assessment of cultural aspects relied upon the ACHAR, consultation with nine Registered Aboriginal Parties (RAPs) including one RAP from the Worimi group, and Holcim's advice about the interface and partnerships it has established with the Worimi people.

As mentioned earlier in Chapter 6, Holcim seeks to foster Aboriginal cultural heritage in its existing relationship with the Worimi people. This is achieved via cultural awareness training conducted on-site by Worimi Elders, and the development of unexpected finds procedures, led by Worimi Elders in cultural advisor capacities.

The Aboriginal community was consulted by engaging known organisations and placing an advertisement in the *Port Stephens News*. Nine Aboriginal stakeholders were recorded as RAPs and participated in this process.

The ACHAR identified 10 sites within the study area, namely:

- two sites to be destroyed by quarrying activities;
- one site preserved from quarrying activities;
- one site partially impacted by proposed works;
- four sites not impacted by proposed works; and
- two sites totally impacted by proposed works.

Two sites were identified outside the project study area.

The presence of Aboriginal sites in the study area shows that without mitigation measures in place during operation, there is the potential for negative cultural heritage and therefore social impacts to the Aboriginal community. This unmitigated impact is predicted to be of high significance (likely and moderate magnitude). Refer to Chapter 7 for the proposed mitigation and management measures.

Community

Associating dredging operations to PFAS contamination

In September 2017, the NSW Environmental Protection Authority (EPA) informed the public that PFAS / PFOS contaminants had migrated from the Williamstown RAAF Base and were present in surface water, groundwater and fish around the RAAF base and airport (Taylor & Cosenza, 2016). Based on this assessment, the local community in a defined area (see Figure 6.1) was advised to avoid:

- drinking bore water;
- eating fish caught in the nearby area; and
- consuming eggs from backyard chickens that had consumed bore water.

The management and monitoring of this contamination is described in the Williamstown Management Area, which was developed by the EPA (EPA, 2022) following:

- data and monitoring undertaken by the Australian Department of Defence (DOD);
- increased knowledge of surface and groundwater in the area; and
- modelling the potential future movement of contaminants.

The area comprises the following three zones (EPA, 2022):

- primary management zone - this area has significantly higher levels of PFAS detected and therefore, the strongest advice applies;
- secondary management zone - some detected levels of PFAS; and
- broad management zone - topography and hydrology of the area means PFAS detections could occur now and into the future.

The Williamstown Management Area – Salt Ash is in Figure 6.2 and shows that the project site is outside all management zones. The areas within the secondary and broader management zones are advised to follow precautionary advice (EPA, 2022):

- avoid the use of groundwater, bore water or surface water;
- avoid swallowing groundwater or surface water when bathing, showering, swimming, and paddling. Groundwater and surface water should not be used for swimming or paddling pools; and
- avoid eating home grown produce (slaughtered meat, eggs, milk, poultry, fruit and vegetables).



Figure 6.1 Port Stephens area advised to limit locally sourced food and water consumption

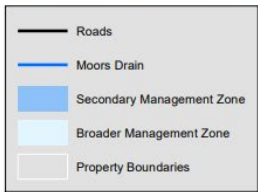
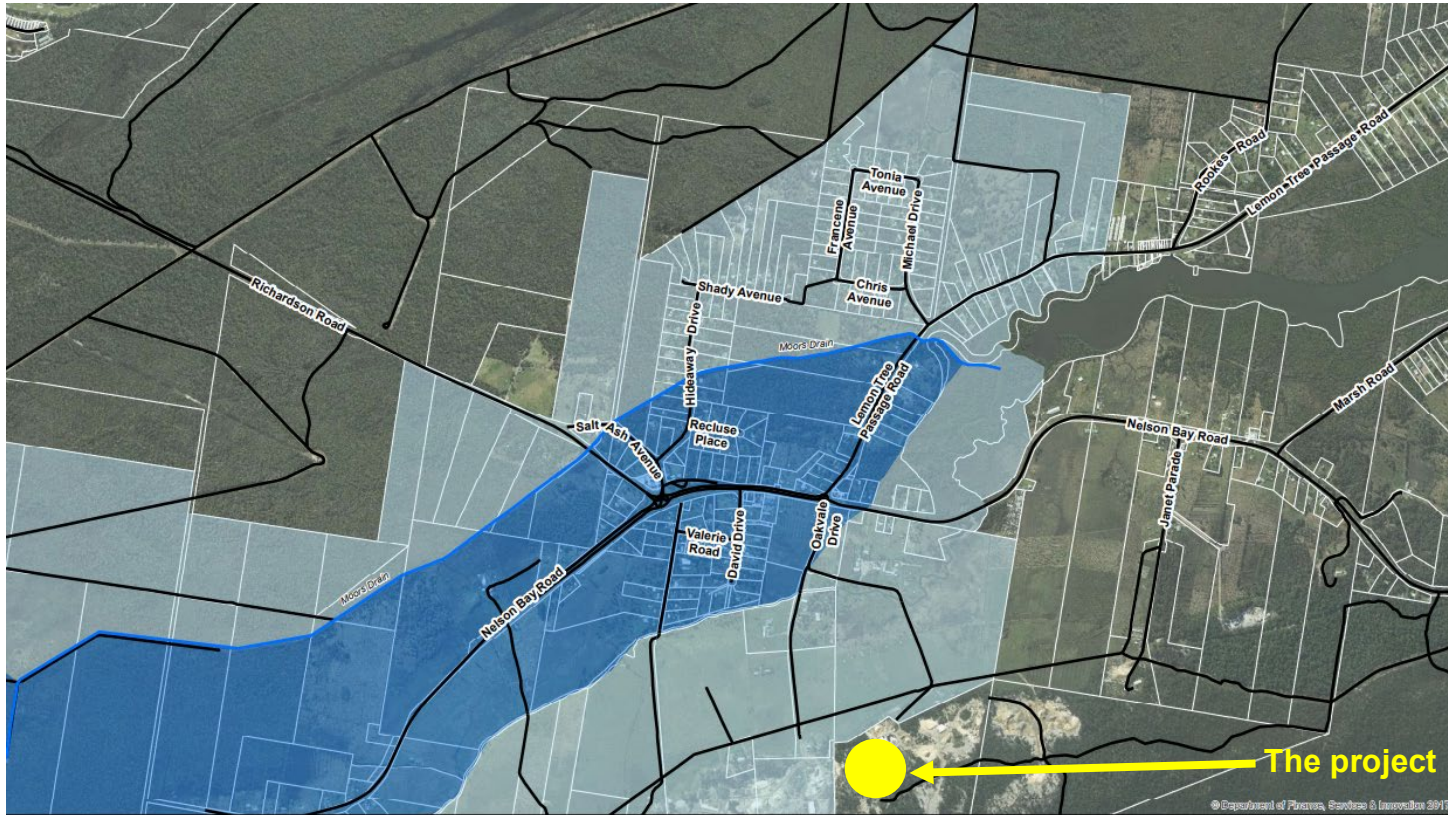
Community anxiety is based on the potential health risks associated with the contamination and that the DOD and other governmental organisations such as the EPA and PSC did not work effectively together to disseminate important information and notify the community about contamination levels and extents (Taylor & Cosenza, 2016).

Residential doorknocking results show that mental health has been influenced by PFAS contamination and that a correlation has been drawn between dredging operations and potential

to interfere with contaminated groundwater or surface water. One resident of Valerie Road is a cancer survivor and noted that families have been separated by stress caused by PFAS contamination. The resident raised concern that the project could exacerbate this stress. A second resident of Valerie Road perceives a discrepancy in operational procedures between the public and private sector, whereby the Council will not excavate in or near creeks in contaminated areas, but sand mines continue to excavate material.

Hydrominex Geoscience Consulting has been appointed to undertake a Groundwater Impact Assessment (GIA) to investigate potential impacts of the project on groundwater and PFAS / PFOS contamination in the study area (refer to Appendix D of the EIS).

The perception that an approved project would introduce PFAS / PFOS contaminated groundwater to the study area could impact community mental health. Without mitigation measures in place during operation, there is the potential for the community to experience negative social impacts derived from the project. This unmitigated impact is predicted to be of high significance (possible and major magnitude). Refer to section 7.3 for the proposed mitigation and management measures.



Williamstown Management Area: Salt Ash

Map Created: 19/12/2017

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EPA and its employees disclaim liability for any act done on the
information in the map and any consequences of such acts or omissions.

Base Imagery: Heammap 17 November 2017

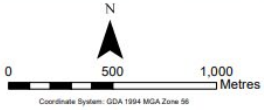


Figure 6.2 Williamstown Management Area – Salt Ash

Sand truck impacts to road safety on local roads

The survey and doorknock results illustrate that heavy vehicle movements to and from site is considered a key safety impact for the community. This perspective was presented by a survey respondent who confirmed there are concerns for public safety (especially children) when people are entering and exiting the Oakvale Wildlife Park. This risk is likely to be enhanced with increased traffic volumes along a road that is already considered to be in poor condition. During the residential doorknock exercise, one respondent of Cabbage Tree Road added that sand trucks have been known to make turns in contravention of road rules, which has led her to fear for the safety of visiting family members. Additionally, this stakeholder desires the diligent management of haulage hours according to the development consent, and the appropriate management of driver behaviour.

Results of the PO exercise did not support the prospect of the project creating pedestrian safety issues on Oakvale Drive. Despite observing a large volume of heavy vehicles and occasional light vehicle traffic related to the nearby quarries using the road, only three groups of pedestrians (on separate occasions) were observed during the times that observations were recorded. The safety of the pedestrians was in no way influenced by quarry vehicles.

Transport Urban Planning (TUP) was appointed to assess the cumulative impact of additional trucks on the adjacent road network, including principal and quarry intersections. Refer to Appendix H of the EIS. The assessment found that cumulatively, during construction and operation, the project is not expected to significantly impact road performance. No mitigation is proposed as part of the traffic impact assessment (TIA), and the study did not evaluate the potential social impacts that project traffic might yield in the social locality.

Notwithstanding the PO and TIA findings, the community perceives that the movement of sand trucks in the area could negatively influence public road safety. Without mitigation, the potential for reduced road safety conditions could influence community perception of the operation. This unmitigated impact is predicted to be of medium significance (possible and moderate magnitude). Refer to section 7.3 for the proposed mitigation and management measures.

Surroundings

Native vegetation loss

As part of the project, native vegetation clearing is proposed in addition to what was approved under the historical development consents. The vegetated areas have the potential to contain TECs, threatened flora species and habitat for threatened fauna species. The loss of native flora could adversely impact the community through lost ecosystem services and reduced aesthetic value and amenity in the social locality. Biodiversity impacts were raised by two residents of Oakvale Drive who stated that quarry operations in the area take the sand resource and destroy valuable habitat without giving back to the community.

To assess biodiversity related impacts, a BDAR was commissioned for the project (refer to Appendix E of the EIS). This assessment found that in addition to vegetation clearance approved under historical development consents (17.44 ha), 1.75 ha native vegetation (defined by the Biodiversity Assessment Method [BAM]) will be lost. Biodiversity offsets are required for this impact, with 45 ecosystem credits being recommended for clearing of TEC.

A Rehabilitation Strategy (Appendix O of the EIS) is proposed to progressively reinstate habitat during and following the project. Without mitigation, there is still the potential that the quarry could continue to impact the aesthetic value and amenity of the social locality by not enhancing the environment and contributing to the semi-rural nature of the area. This unmitigated impact is predicted to be of medium significance (possible with moderate magnitude). Refer to section 7.3 for the proposed mitigation and management measures.

Native fauna habitat loss

Native vegetation loss, described above, could impact habitat available for native or threatened fauna in the social locality. The specialist has recommended that in addition to the recommended ecosystem credits, 244 species credits (defined by the BAM) are required to offset biodiversity loss.

The loss of Koala habitat is a key theme for the area, highlighted by an article published in the Guardian on 27 October 2020 illustrating the community campaigned against the approval of a rock quarry in the Port Stephens area. The rock quarry expansion proposed clearing 52 ha of Koala habitat (Cox, 2020). During an interview with Ms. Kate Washington (Member for Port Stephens) on 19 July 2021, the loss of Koala habitat resulting from the dredge pond operation was queried.

Community concerns about native fauna habitat loss and impacts to the Koala are balanced by the following results of the project BDAR:

- the area to be impacted by the project is not known to contain a resident Koala population;
- the area disturbed consists predominately of moderate to good condition vegetation, which occurs within and immediately adjacent to an operational quarry; and
- the project is unlikely to result in a decrease in the Koala population of the Port Stephens LGA due to the lack of feed trees present within the subject area and the fact that any local population is unlikely to depend on the resources within the subject area for survival.

A Rehabilitation Strategy has been recommended for the project, but without mitigation there is still the potential for the project to impact animal presence in the social locality and reduce the aesthetic value and amenity of the area. This unmitigated impact is predicted to be of medium significance (possible with moderate magnitude). Refer to section 7.3 for the proposed mitigation and management measures.

CHAPTER 7

SOCIAL IMPACT ENHANCEMENT,
MITIGATION AND RESIDUAL
IMPACTS

7 SOCIAL IMPACT ENHANCEMENT, MITIGATION AND RESIDUAL IMPACTS

This final chapter identifies enhancements of some of the positive social impacts and mitigation measures for the negative social impacts identified in Chapter 6. The impacts are then re-evaluated, and residual impacts are predicted. The residual impacts are the predicted outcomes of the project's SIA.

7.1 Project refinements

Throughout the project design process, potential negative social impacts were identified and targeted as refinement opportunities by the project team. Table 7.1 identifies the social impacts and the project refinement adopted by the project team.

Table 7.1 Project refinements

Predicted social impact	Project design refinement
Native vegetation and fauna habitat loss (surroundings), potentially causing amenity and aesthetic impacts for people.	Design and footprint was refined to reduce clearing of, and retain, native vegetation and potential habitat of identified threatened fauna species. Design and footprint was refined to retain mature native vegetation along the northern boundary of the quarry. This vegetation currently provides visual screening for residents to the north of the quarry and thoroughfare motorists of Nelson Bay Road.
The expansion of sand extraction operations has the potential to impact Aboriginal culture (heritage), potentially causing disconnection to country for Aboriginal people.	Design and footprint was refined to retain and protect areas at the site with the potential to yield Aboriginal archaeological deposits.

7.2 Enhancement of positive social impacts

Livelihoods

Aboriginal employment and partnerships

As described in Chapter 6, Holcim's RRAP is designed to establish sustainable and mutually beneficial relationships with Aboriginal and Torres Strait Islander people, including the achievement of Aboriginal employment targets (Holcim, 2022).

Throughout the course of the EIS, a relationship between Holcim and the Worimi people has been maintained via cultural awareness training conducted on-site by Worimi Elders, and the development of unexpected finds procedures, led by Worimi Elders in cultural advisor capacities. External to the project, Holcim and the Worimi people are cooperating in other environmental and cultural heritage initiatives (refer to section 6.2.1).

There is an opportunity to enhance the project's potential positive impacts to Aboriginal employment and partnerships. This opportunity would involve replicating the initiatives already established at Holcim's satellite sites. Such a scenario would create a minor enhancement of the predicted positive project impact, increasing its likelihood to 'possible'.

7.3 Mitigation of negative impacts

Way of life

Acoustic (noise) and vibration impacts

The NVIA results (Appendix G of the EIS) demonstrate that operational noise emissions satisfy relevant project noise trigger levels (PNTL) at all assessed receivers, for all meteorological conditions throughout all stages of the project. Sleep disturbance is not anticipated because emissions from transient noise events are predicted to remain below EPA maximum noise trigger levels.

The predictive modelling results show that:

- noise levels are expected to comply with the revised Voluntary Land Acquisition and Mitigation Policy (VLAMP) criteria and hence mitigation and/or acquisition rights are not applicable to the project;
- noise generated by construction activities are predicted to satisfy the relevant noise management levels (NML) at all receivers during standard construction hours. Refer to Table 38 of the NVIA (Appendix G of the EIS); and
- road traffic generated by the project are predicted to meet the requirements of the Road Noise Policy (RNP) 2011.

While this specialist study shows that the project is compliant with relevant legislation, policies and guidelines, the implementation of a complaints handling procedure (including temporary noise monitoring responding to noise disturbance where necessary) is recommended to foster a positive relationship with the community and specifically Salt Ash residents. This can be achieved by developing and implementing a project communications and engagement plan (CE plan) which contains the procedure and enables the release of noise monitoring results to the public (upon request). It should nominate a specific Holcim employee to liaise directly with and resolve noise related complaints.

Other recommended noise mitigation measures which would be useful to respond to potential noise impacts are a:

- heavy vehicle driver induction course, focussing on driving behaviours which minimising noise impacts for residents; and
- noise management plan responding to the NVIA.

If the mitigation measures recommended in the NVIA and SIA are applied, then the project's noise impacts would be forecast as being of medium significance (likely and of minor magnitude).

Access

Impacts to existing infrastructure

The TIA shows that road upgrades and interventions are not required as part of the project. This finding was confirmed by the Road Safety Audit that recommended ongoing maintenance for certain roads within the haulage routes. However, there is a community perception that poor road conditions in the local area are being exacerbated by heavy vehicles associated with the many sand quarries in the region. This perception is evident in the Nelson Bay Road upgrade community consultation report (Transport for NSW, 2021).

While Holcim contribute to the local infrastructure fund (road levy) described in section 6.2.2 of the TIA, managing community perception of the project impact to the road network is important. The following recommendations are proposed to effectively manage and mitigate this impact:

- emphasise positive and safe driving behaviours to drivers during the driver induction course; and
- develop a project Traffic Management Plan that seeks to respond to or minimise negative impacts to public road infrastructure.

If the mitigation measures are applied, then the project's impact to existing infrastructure is forecast to be of medium significance (possible and of moderate magnitude).

Heritage

Impacts to Aboriginal cultural heritage

Based on the results of the ACHAR, the specialist made the following recommendations:

- the methodology presented in section 12.2 of the ACHAR (Appendix K of the EIS) should be implemented to protect retained surface sites.
- sites to be partially or fully impacted should be subject to artefact collection (section 12.3 of the ACHAR).
- an unexpected finds procedure should be developed to manage artefacts identified during ground disturbing works.
- a procedure should be developed to manage the discovery of human remains during construction and operation of the project.

In addition to the management measures in the ACHAR, it is recommended that Holcim seek to establish an educational partnership with the Salt Ash Public School, whereby students are provided safe site access to visit and learn about the Aboriginal culture on the site.

If the mitigation measures recommended in ACHAR and SIA are applied, then the project's impact to existing infrastructure will be forecast as medium (likely and of minor magnitude).

Community

Associating dredging operations to PFAS contamination

Analyses from wells on the quarry site, undertaken as part of the GIA, show that PFOS compounds are not present (Appendix D of the EIS). Sampling associated with monitoring at the RAAF Airbase shows that PFAS compounds are discharging into Tilligerry Creek from the north side, but are not present to the south, where the project is located. Sediments surrounding Tilligerry Creek have lower hydraulic conductivity (permeability) than the sand units and the gradient is towards the creek.

The model has shown minimal change to the groundwater environment between the site and Tilligerry Creek to the north. Consequently, the risk of influencing movement of the groundwater "plume" containing PFOS is considered low.

In addition to the groundwater related recommendations in Chapter 8 of the GIA, the following SIA related management measures are recommended for the project under a CE plan:

- develop a plain-English PFAS/PFOS fact sheet which summarises the GIA results into easily discernible information for any concerned members of the public;
- nominate a specific Holcim employee to liaise with the public regarding PFAS and PFOS enquiries; and
- make groundwater monitoring results available on the project website and to the public upon request.

If the mitigation measures recommended in the GIA, EIS and SIA are applied, then the project's influence on PFAS contamination anxiety among residents would be forecast as low (unlikely and of minor magnitude).

Sand truck impacts to road safety on local roads

The TIA found that cumulatively and during construction, the project is not expected to impact road users. The road safety audit requires road maintenance activities be undertaken but no reference was made to poor road condition. No mitigation is proposed for the project.

In contrast to the specialist report findings, there is still community perception that the movement of heavy vehicles reduces the road pavement quality and road safety. This community perception could create stress for road users. To manage this aspect from an SIA perspective, the following mitigation measures are proposed:

- nominate a specific Holcim employee to liaise directly with and resolve road safety related correspondence submitted by members of the public;
- provide correspondence on the project website confirming that road levy contributions are made to the Council for upkeep of the roads network;
- emphasise positive and safe driving behaviours to drivers during the driver induction course; and
- develop a project Traffic Management Plan that fosters traffic safety.

If the recommended mitigation measures are applied, then the project's perceived road safety impacts will be forecast as low (unlikely and of minor magnitude).

Surroundings

Native vegetation loss

As part of the BDAR, biodiversity offsets and a rehabilitation strategy are proposed to mitigate the loss of native vegetation to the project expansion. The environmental sensitivities and community attachment to the semi-rural nature of the social locality are recognised. However, no social mitigation is recommended in addition to offsetting biodiversity loss associated with vegetation clearance. Registered stakeholders will be notified of the EIS exhibition and encouraged to review the EIS and BDAR and submit correspondence regarding project adequacy.

Native fauna habitat loss

As part of the BDAR, biodiversity offsets and a rehabilitation strategy are proposed to mitigate the loss of fauna habitat to the project expansion. Consistent with the recommendation above, registered stakeholders should be notified of the EIS exhibition, encouraged to review the EIS and BDAR, and submit correspondence regarding project adequacy.

7.4 Social impact summary

7.4.1 Impact of not proceeding with the project

Should the project not receive planning approval and proceed, there are potential project-related positive social impacts that would cease or not be developed.

Holcim has previously donated sand to the Oakvale Wildlife Park to assist with the maintenance of animal enclosures, and Koala food tree donations to the Port Stephens Koala sanctuary. Potential future donations of these kinds would not be realised if the project does not proceed.

Holcim's staff volunteering efforts would also cease, such as the clean-up of illegal dumping at nearby sand dunes (i.e. organising removal of illegal dumping of rubbish, cars, boats), and working with Council and Police to prevent illegal dumping activities.

Holcim's seed collection and propagation initiative with the Salt Ash Public School would also be put at risk if the project does not proceed. Holcim staff collect seeds which are provided to the

school. School students learn about propagation and grow the seedlings. Holcim then purchases the seedlings from the school, and Worimi people manage the planting program. Holcim also provides seed stock to Tanibla Bay, and the same process is repeated with the local conservation group there. This program would be unlikely to continue.

From a socio-economic perspective, local businesses and suppliers that are beneficiaries of Holcim's 'buy local' policy would potentially be negatively affected if the project does not proceed. Some business revenue would likely decrease, and although to a minor degree, there is the possibility that this influence on local businesses could flow-on to the wages of employees. There are potential social implications for families in this scenario, whereby families in the social locality (which have incomes lower than the Australian average – refer section 5.7) have less expendable income for social or recreational activities.

There are other initiatives in the Port Stephens area that could be jeopardised if the project does not proceed. For example, Holcim undertakes tree planting at one of its satellite sites that produces sand, imported by the Salt Ash operation. This occurs on an annual basis. The Worimi group are also involved in periodic (e.g. 6 monthly) weed control activities at nearby sites. Over the last 12 months Holcim has been strengthening its relationship with the Worimi group, by relying on its representatives to undertake vegetation conservation activities at a nearby sand location.

Lastly, the Hunter Regional Plan 2036 (Environment, 2016) predicts substantial growth in the form of residential, commercial and health related development. Fine sand is an integral component of the construction materials (concrete etc) required to achieve this expansion. Holcim are well placed to contribute to regional growth by maximising sand extraction to meet the rising demand for construction materials.

In terms of weight and volume, more sand products are quarried and transported to construction sites than any other type of resource material. Extractive sand sources need to be located as close as possible to the point of usage because the value to weight ratio is very low, making transport costs to the market highly sensitive (Element 2020). The location of the project is strategic for the proponent to leverage business opportunities in Hunter region.

Refer to section 2.8.1 of the EIS for a detailed description of the project need and desirability.

7.5 Impacts of proceeding with the project

Table 7.2 describes the predicted social impacts of the project. Note the table excludes the current project commitments and positive social initiatives outlined in section 7.4, which would only be maintained should the project be granted planning approval.

Table 7.2 Social impact summary

Impact to people	Social impact category	Affected parties	Likelihood and magnitude of impact	Impact significance rating (non-enhanced/unmitigated)	Project aspect	Enhancement / mitigation measures		Likelihood and magnitude of impact	Residual impact significance
						- From EIS technical studies	- From SIA		
Predicted positive impacts									
Sand donations	Community	Businesses and community	Likely / minor magnitude	Medium	Construction and operation	N/A	None suggested	Likely / minor magnitude	Medium
Volunteering	Community	Businesses, community and residents	Likely / minor magnitude	Medium	Operation	N/A	None Suggested	Likely / minor magnitude	Medium
Vegetation donation	Surroundings	Business and community	Possible / minimal magnitude	Low	Operation	N/A	None Suggested	Possible / minimal magnitude	Low
Financial donations	Surroundings	Community	Possible / minimal magnitude	Medium	Operation	N/A	None Suggested	Possible / minimal magnitude	Medium
Buy local policy	Livelihoods	Community and local business	Likely / moderate magnitude	High	Construction and operation	N/A	None Suggested	Likely / moderate magnitude	High
Aboriginal employment	Livelihoods	Aboriginal community	Unlikely / moderate magnitude	Medium	Construction and operation	N/A	Applying the initiatives established at Holcim's satellite sites to the project	Possible / moderate magnitude	Medium

Impact to people	Social impact category	Affected parties	Likelihood and magnitude of impact	Impact significance rating (non-enhanced/unmitigated)	Project aspect	Enhancement / mitigation measures		Likelihood and magnitude of impact	Residual impact significance
						- From EIS technical studies	- From SIA		
Predicted negative impacts									
Acoustic (noise) and vibration impacts	Way of life	Community and residents	Likely / moderate magnitude	High	Construction and operation	N/A	<ul style="list-style-type: none"> ▪ CE Plan containing complaints handling procedure ▪ Temporary noise monitoring to respond to any disturbance notifications ▪ Nominate a specific Holcim employee to liaise directly with and resolve noise related complaints ▪ Driver induction course 	Likely / minor magnitude	Medium
Existing infrastructure impacts	Access	Local resident road users	Likely / moderate magnitude	High	Construction and operation	N/A	<ul style="list-style-type: none"> ▪ Driver induction course ▪ Develop noise Management Plan 	Possible / moderate	Medium

Impact to people	Social impact category	Affected parties	Likelihood and magnitude of impact	Impact significance rating (non-enhanced/unmitigated)	Project aspect	Enhancement / mitigation measures		Likelihood and magnitude of impact	Residual impact significance	
						- From EIS technical studies	- From SIA			
Aboriginal heritage	Heritage	Aboriginal community	Likely / moderate magnitude	High	Construction and operation	<ul style="list-style-type: none"> ▪ Methodology in Section 12.2 of the ACHAR should be implemented to protect retained surface sites ▪ Impacted sites should be subject to artefact collection ▪ Develop unexpected finds procedure ▪ Develop procedure to manage the discovery of human remains 	<ul style="list-style-type: none"> ▪ Holcim seek to establish an Aboriginal cultural heritage educational partnership with the Salt Ash Public School 	responding to NVIA	Likely / minor magnitude	Medium
PFAS contamination	Community	Vulnerable resident and wider community	Possible / major magnitude	High	Construction and operation	<ul style="list-style-type: none"> ▪ Develop groundwater monitoring plan ▪ Manage 'fines' separately to groundwater, and in lined ponds 	<ul style="list-style-type: none"> ▪ Develop a fact sheet which summarises the GIA results into easily discernible information 		Unlikely / minor magnitude	Low

Impact to people	Social impact category	Affected parties	Likelihood and magnitude of impact	Impact significance rating (non-enhanced/unmitigated)	Project aspect	Enhancement / mitigation measures		Likelihood and magnitude of impact	Residual impact significance
						- From EIS technical studies	- From SIA		
							<ul style="list-style-type: none"> ▪ Nominate a Holcim employee to liaise with the public (or have collateral available) regarding PFAS and PFOS enquiries ▪ Make groundwater monitoring results available on the project website and to the public upon request 		
Road safety impacts	Community	Community	Possible / moderate magnitude	Medium	Construction and operation	N/A	<ul style="list-style-type: none"> ▪ Nominate a specific Holcim employee to resolve road safety matters ▪ Provide information on the project website confirming Holcim makes road levy contributions 	Unlikely / minor	Low

Impact to people	Social impact category	Affected parties	Likelihood and magnitude of impact	Impact significance rating (non-enhanced/unmitigated)	Project aspect	Enhancement / mitigation measures		Likelihood and magnitude of impact	Residual impact significance
						- From EIS technical studies	- From SIA		
							<ul style="list-style-type: none"> ▪ Drivers induction course ▪ Develop a project Traffic Management Plan that fosters traffic safety 		
Native vegetation loss	Surroundings	Community	Possible / moderate magnitude	Medium	Construction and operation	<ul style="list-style-type: none"> ▪ Implement biodiversity offsets and vegetation rehabilitation actions in the related strategy 	None suggested	Possible / moderate magnitude	Medium
Fauna habitat loss	Surroundings	Community	Possible / moderate magnitude	Medium	Construction and operation		None suggested	Possible / moderate magnitude	Medium

7.6 Impact monitoring and management

The practical arrangements for monitoring and managing social impacts can be integrated into the overarching environmental management systems.

Environmental management plans applicable to both the construction and operation of the project will be developed and provide a framework for social impact management and monitoring. The management plans would provide a mechanism to manage social issues identified by the SIA and nominated in Table 7.2 relating to:

- groundwater monitoring;
- protection of significant Aboriginal cultural sites;
- project related traffic; and
- noise and vibration generated by the project.

In addition to the environmental management plans, the CE plan recommended for the project will provide a program for the ongoing analysis of social risks and opportunities arising from the project, including timing and frequency of reviews. This will include a regular analysis of complaints to see if there are any emerging issues relating to the project, formal and informal feedback from the community, ongoing attempts to enhance community initiatives with the Worimi LALC and Salt Ash Public School.

7.7 SIA conclusion

7.7.1 Predicted positive social impacts

The project is predicted to yield a range of positive social outcomes in the following social impact categories:

- Community: impacts of a medium significance stemming from donations (material and in-kind) made by Holcim to business organisations, Salt Ash Primary School, residents and the wider community in the social locality;
- Surroundings: positive impacts to business and community groups, derived from the project's other donations. These include financial donations (medium significance) to community organisations considered by Holcim on a case-by-case basis, and the donations of Koala food trees (low significance) to the Port Stephens Koala Sanctuary; and
- Livelihoods: impacts of high significance related to Holcim's "buy local" policy which would benefit local businesses, and impacts of medium significance for Worimi group which has been a cultural advisor and assisted with unexpected finds training and procedures at a nearby dune operation that feeds the quarry.

7.7.2 Predicted negative social impacts

The SIA has identified a range of predicted negative project-related social impacts for people in the social locality including:

- Way of life: medium significance noise impacts to residents in the social locality;
- Access: impacts of a medium significance for road users, specifically relating the movement of heavy vehicles, impacts to road condition, and compliance with road rules;
- Heritage: low significance impacts to Aboriginal culture associated with the potential interference with Aboriginal artefacts in the project area, and subsequent disconnection to country;

- Community: two issues (PFAS / PFOS contamination and road safety) of a low impact significance would potentially have a negative influence on mental health and anxiety among the population in the social locality; and
- Surroundings: impacts of a medium significance for the general community (both road users and residents) in terms of reduced aesthetic value and amenity created by vegetation loss.

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APPENDIX A

SOCIAL IMPACT CATEGORIES

Linear projects

Linear projects such as rail lines, roadways or utility services are typically narrow but long, like that illustrated in **Figure 7**. Analysis should consider the broader area as well as key precincts or areas that will experience a higher level of impact. Surveys of people in a wider region may inform an understanding of their ways of life and livelihoods (e.g. travel times and employment) and present a broad representation across a larger social locality.

4.3 Categorising impacts

Use the following categories to identify likely social impacts:

- **way of life**, including how people live, how they get around, how they work, how they play, and how they interact each day
- **community**, including composition, cohesion, character, how the community functions, resilience, and people's sense of place
- **accessibility**, including how people access and use infrastructure, services and facilities, whether provided by a public, private, or not-for-profit organisation
- **culture**, both Aboriginal and non-Aboriginal, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings
- **health and wellbeing**, including physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health
- **surroundings**, including ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity

- **livelihoods**, including people's capacity to sustain themselves through employment or business
- **decision-making systems**, including the extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

Some projects may have impacts in all these categories, but others may only have a few. For example, an influx of workers could affect both 'way of life' and 'community'. Neatly categorising impacts is not as important as identifying and assessing them. The categories simply provide prompts to consider possible social impacts.

Consider how benefits and impacts are distributed differently between different social groups, and each group's capacity to respond to these. This includes impacts on Aboriginal communities, with consideration of livelihood and wellbeing of Aboriginal communities as well as cultural impacts.

Depending on the project, it may be necessary to consider and assess reasonable and justified fears and concerns held by the community in relation to any of the above categories. The focus should be on their logical basis, not merely their number.

When assessing the nature and scale of social impacts, consider the project's:

- location, including whether it will be densely or sparsely populated, or whether it will be contained within one council boundary or several
- layout and design (e.g. whether it will be linear or contained within a discrete site)
- social locality
- proposed construction and operation methods, and expected duration of each method
- local and regional context including dependency on or proximity to other State significant projects or other forms of industry.

APPENDIX B

SCOPING WORKSHEET

Social impact assessment (SIA) scoping worksheet for:		0				Date:									
Scoping results from EIS Worksheet					Is there a social impact?		What information will be required to assess the social impact?								
Social and environmental matters <i>Click on a matter below for brief description, or refer to full glossary</i>		Outline of impact <i>(Auto fill from EIS worksheet)</i>		Is a material effect on the matter expected? <i>(Auto fill from EIS worksheet)</i>		Is there community or other stakeholder concerns regarding the impact or activity? <i>(Auto fill from EIS worksheet)</i>		With regard to the matter expected to be impacted, will there be a social impact? <i>Select this cell for brief description, or click link above for further detail</i>		Are impacts on the matter expected to require a non-SIA specialist study? <i>(Auto fill from EIS worksheet, then manually enter non-SIA report type)</i>		Will the non-SIA specialist study address the social impact? <i>Click on link above for further detail on potential classifications</i> <i>(Select from list)</i>		Level of assessment for the social impact in the SIA <i>Click on link above for further detail on potential classifications</i> <i>(Auto fills)</i>	
								Yes/No <i>(Select from list)</i>	If yes, outline the social impact <i>(Manual entry, if not already covered in column D)</i> If no, outline why <i>(Manual entry)</i>						
What does the proposal mean for people?	AMENITY	acoustic	The proposed increase in production and transportation has the potential to increase noise levels experienced at Oakvale Wildlife Park and residences within Salt Ash to the south of Nelson Bay Road. Previous studies also raised noise/vibration from trucks as an issue.	Yes	No	Yes		Yes - noise assess	Yes - fully	Desktop SIA					
		visual	The entrance to the quarry is partially visible from sensitive receivers at the end of Oakfield Drive and Janet Parade. Despite this, the project would be consistent with the existing operations at the site and not result in an alteration to existing views from surrounding areas. As such, the project would not result in new or additional visual impacts to sensitive receivers	Yes	No	No		No		No SIA required					
	ACCESS	road and rail network	The project will transport additional sand products both east and west along Nelson Bay Road and beyond via the same transportation routes as existing operations. Future and cumulative quarry traffic may contribute to impacts on the condition of the road network, and the potential for quarry traffic non-compliance with weight and hours of operation conditions	Yes	Yes	Yes		Yes - TTA	Yes - in part	Standard SIA					
	HERITAGE	Aboriginal cultural	The presence of numerous recorded sites on and near the quarry demonstrate that the local landscape was used by Aboriginal people in the past and that material traces of this landscape use have survived in the form of Aboriginal objects and archaeological deposit.	Yes	No	Yes		Yes - ACHAR	Yes - fully	Desktop SIA					
	COMMUNITY	health	Mental health of residents in the area has been influenced by PFAS contamination originating at the Williamtown RAAF base. The proposed dredging operation has a logical connection to groundwater and this may generate adverse perceptions to the affected individuals.	Yes	Yes	Yes		Yes - GIA	Yes - in part	Standard SIA					
		safety	Sand haulage along local roads (in particular Oakvale Drive) presents a potential safety risk to road users. Previous studies on nearby quarries have also raised speeding trucks on Oakvale Drive and members of the public accessing site without authority as safety issues.	Yes	Yes	Yes		Yes - TIA	Yes - in part	Standard SIA					
What does the proposal mean for the natural environment?	BIODIVERSITY	native vegetation	The project requires the clearing of native vegetation, not currently approved via historical development consent, which has the potential to contain threatened flora species or their habitat and suitable habitat for threatened fauna species. The native vegetation communities may also meet the classification of a Threatened Ecological Community (TEC) and may require biodiversity offsetting.	Yes	Yes	Yes		Yes - BDAR	Yes - fully	Desktop SIA					
		native fauna	The project requires the clearing of native vegetation, not currently approved via historical development consent, which has the potential to contain threatened flora species or their habitat and suitable habitat for threatened fauna species. The native vegetation communities may also meet the classification of a Threatened Ecological Community (TEC) and may require biodiversity offsetting.	Yes	Yes	Yes		Yes - BDAR	Yes - fully	Desktop SIA					

APPENDIX C

DEFINING SOCIAL IMPACT
MAGNITUDE AND LIKELIHOOD

Magnitude level	Meaning
Transformational	Substantial change experienced in community wellbeing, livelihood, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/improvement to something that people value highly, either lasting for an indefinite time, or affecting many people in a widespread area.
Moderate	Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minor	Mild deterioration/improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change experienced by people in the locality.

Likelihood level	Meaning
Almost certain	Definite or almost definitely expected (e.g. has happened on similar projects)
Likely	High probability
Possible	Medium probability
Unlikely	Low probability
Very unlikely	Improbable or remote probability

		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



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