CHAPTER 12

Social

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12 Social Impact Assessment

Completion of the Six Mile Creek (Lake Macdonald) Dam Safety Upgrade will generate social effects, both directly through construction activities and indirectly through the broader social value which the Project provides.

Social impact assessment (SIA) is a process for the identification, analysis, assessment, management and monitoring of the potential social impacts of a project, both positive and negative.

Potential social effects associated with the Project are an issue of community concern and are required to be addressed by the Impact Assessment Report (IAR) to a level in accordance with the scale and extent of the potential impacts of the Project.

The Social Assessment element of the IAR considers issues including:

- Community and stakeholder engagement
- Workforce management
- Housing and accommodation
- Local business and industry procurements health and community wellbeing.

12.1 Background

Lake Macdonald was established with the completion of Six Mile Creek Dam in 1965. In 1979 the dam was raised to create the current storage. The lake is located approximately 4 km from Cooroy. The lake was established to provide potable water supply to the region, as well as recreation. It is assumed the land was previously used for dairy farming as this was prominent in the area at the time. Ownership of the dam was transferred to Seqwater from Noosa Shire Council on 1 July 2008.

This chapter assesses the social impacts associated with the Project during the construction and operation phases. This social assessment was completed between January 2018 and October 2018 and informed through stakeholder and community engagement.

A study area for the SIA was defined with reference to the Project Description (Chapter 2) and the extent of potential direct and indirect effects which Project construction and operation might have upon surrounding individuals and communities. Geographies published by the Australian Bureau of Statistics (ABS) have drawn upon to define applicable study areas.

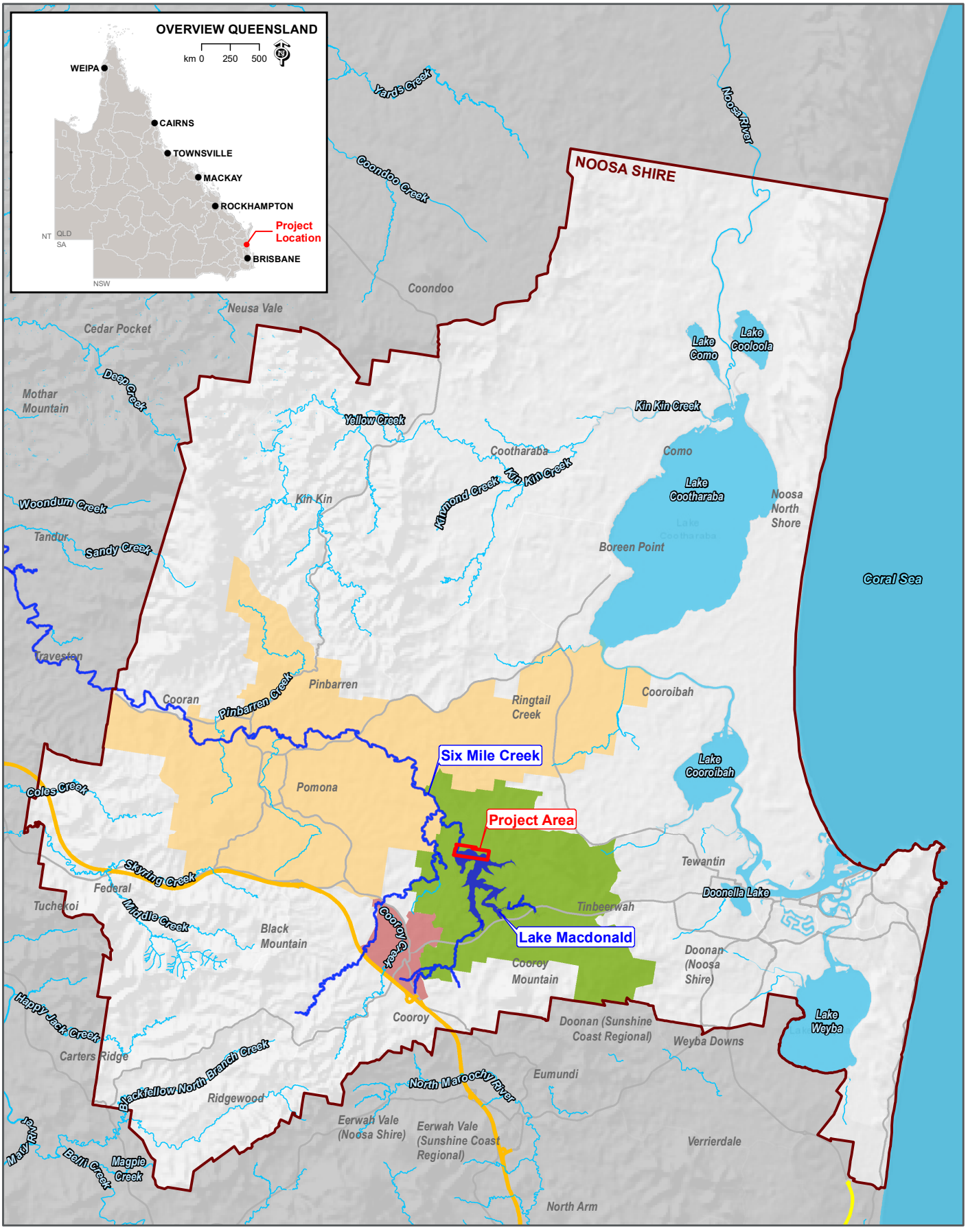
The local study area comprises those areas likely to experience direct effects due to Project activities. There are three distinct areas as shown in Figure 12-1, which would experience Project effects:

- **Local study area one** – The area directly surrounding Lake Macdonald as defined by the ABS ‘state suburbs’ of Lake Macdonald and Tinbeerwah
- **Local study area two** – The nearby township of Cooroy as defined by the ABS ‘urban centre locality’ of Cooroy
- **Local study area three** – Residents who live directly downstream (within 15 km) of the Dam as defined by the ABS ‘urban centre locality’ of Cooran along with the ‘state suburbs’ of Pinbarren, Pomona and Ringtail Creek.

The Project is also likely to generate some effects in the broader region such as employment and opportunities for businesses. The regional study area is defined as the Local Government Area (LGA) of Noosa.

FIGURE 12-1: LOCAL AND REGIONAL STUDY AREAS FOR THE SOCIAL IMPACT ASSESSMENT

Six Mile Creek Dam Safety Upgrade Project



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seqwater WATER FOR LIFE

LEGEND

- Bruce Highway
- Sunshine Motorway
- Secondary Road
- Watercourse
- Six Mile Creek and Upper Tributary
- Lake Macdonald
- Project Area
- Regional Study Area (Noosa Shire)
- Social Study Area 1 (Lake Macdonald & Tinbeerwah state suburbs)
- Social Study Area 2 (Cooroy UCL)
- Social Study area 3 (Cooran UCL & Pinbarren, Pomona & Ringtail Creek state suburbs)

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12.2 Methodology

In accordance with accepted social impact assessment standards, the methodology adopted to complete the assessment for the Project accords with the Social Impact Assessment Guideline issued by the Queensland Department of State Development, Manufacturing, Infrastructure and Planning (2018), as depicted in Figure 12-2.

The methodology also aligns with international practice such as that outlined in Social Impact Assessment: Guidance for assessing and managing the social impacts of projects produced by the International Association of Impact Assessment (IAIA) (Vanclay, 2015).

As per Figure 12-2, community and stakeholder engagement is a core element of the SIA across all phases. A full description of the engagement undertaken to inform the SIA is provided in section 12.4.

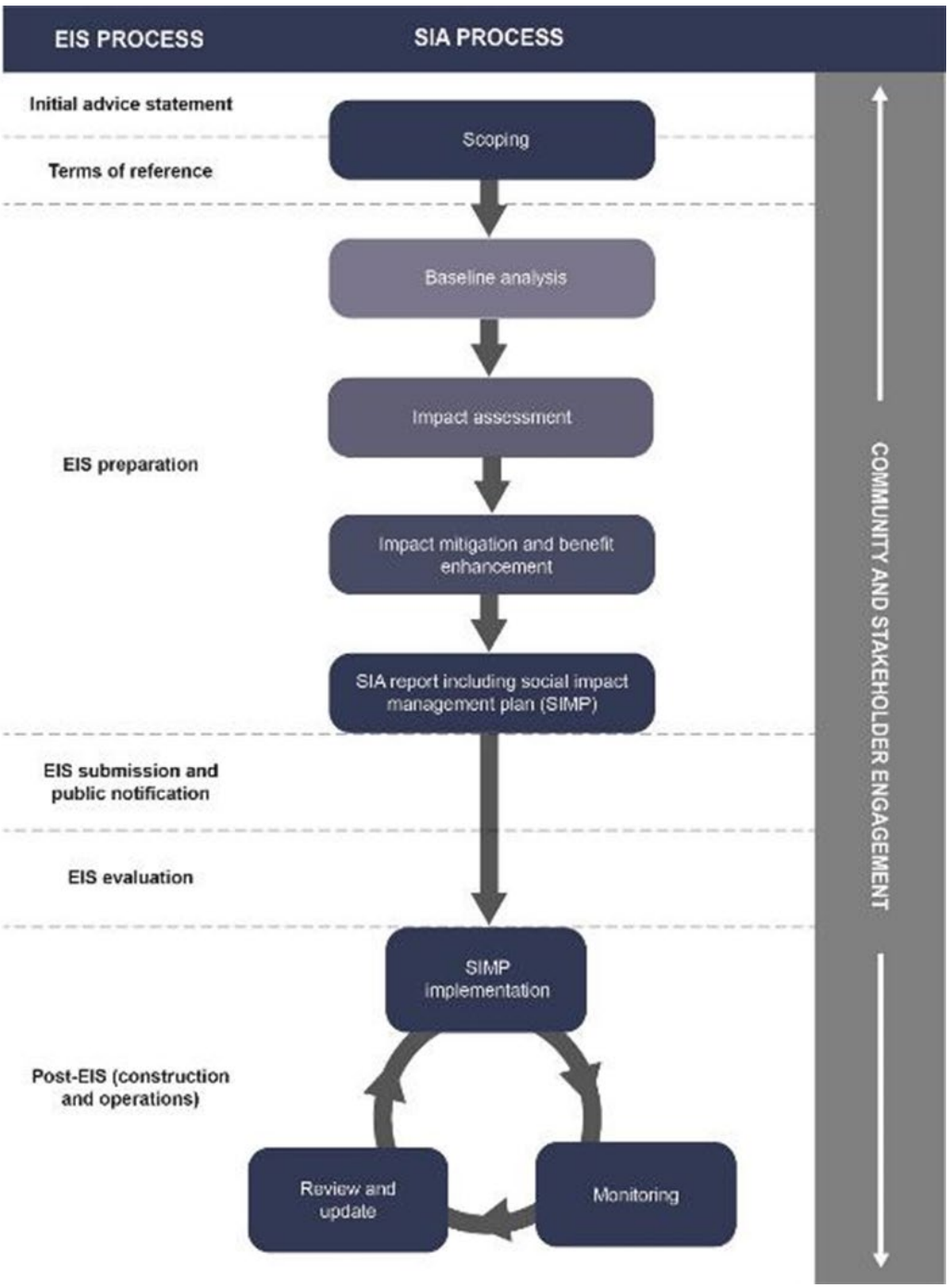


Figure 12-2: Social Impact Assessment process as provided in the Social Impact Assessment Guideline (2018)

12.2.1 Scoping of Social Risks and Benefits

The objectives of the SIA scoping phase were to:

- Build an understanding of potential socio-economic impacts, who might be affected, their relevant interests, values and aspirations and how they may be best engaged to inform the SIA
- Identify any potentially affected built or natural features which have social value or importance including key social infrastructure
- Identify any relevant social trends or social change processes being experienced by potentially affected communities.

As outlined in the Social Impact Assessment Guideline (2018), scoping of socio-economic impacts should be informed by direct engagement with potential stakeholders. A defined engagement process was undertaken as part of the SIA scoping phase. A SIA Scoping Interview (provided as Appendix N) was undertaken with representatives from local government, community groups, members of the Lake Macdonald Community Reference Group and local businesses and residents. Refer to section 12.4 for a full description of those engaged as part of the SIA scoping phase including participants and the feedback provided.

12.2.2 Social Baseline Analysis

The social baseline concisely documents relevant social, economic and land use characteristics within the study area. Quantitative information derived through ABS Census data and other secondary sources of information is complemented by primary information obtained through a comprehensive community and stakeholder engagement program as outlined in section 12.4.

The suite of socio-economic indicators which comprise the baseline were determined with reference to the credible impact pathways and social risks and benefits identified in the scoping phase. They include demographic and housing characteristics including future growth projections, economic and business activity and an analysis of social infrastructure and community health and safety. The objective is to define those baseline indicators that are relevant to the ongoing measurement and monitoring of impacts attributable to the Project.

12.2.3 Identification and Assessment of Socio-economic Impacts

Potential socio-economic impact pathways were identified through the detailed analysis of all aspects of the Project, stepping through each potential causal factor and how it may manifest in an impact (or benefit) on socio-economic conditions in study area communities.

Review of other studies being completed as part of the IAR further informed identification of potential socio-economic impacts and benefits. Relevant associated specialist assessments include Hydrology, Noise and Vibration, Transport and Traffic and Cultural Heritage. Any direct or indirect effects upon socio-economic or land use conditions were identified and defined with reference to:

- Land use and property
- Way of life (how people live, work, play, and interact)
- Community (including cohesion and sense of place)
- Environment (including amenity, aesthetics, and access)
- Economy (including effects on businesses and economic opportunity)
- Wellbeing and health (physical and mental).

The significance of each impact was assessed based on duration, extent, sensitivity (vulnerability to change and capacity to adapt), severity, and level of community concern or support. The level of pre-mitigated significance of each identified impact is assigned as being Low, Medium or High through application of the social risk matrix (Figure 12-3) and assessment of the predicted likelihood and social consequence of the impact.

RISK MATRIX						
		Consequence				
		Insignificant	Minor	Moderate	Major	Severe
Likelihood	Almost Certain	Medium				High
	Likely					
	Possible					
	Unlikely					
	Rare	Low				
Legend		Local, small-scale, easily reversible change on social characteristics or values of the communities of interest or communities can easily adapt or cope with change.	Short-term recoverable changes to social characteristics and values of the communities of interest or community have substantial capacity to adapt or cope with change.	Medium-term recoverable changes to social characteristics and values of the communities of interest or community has some capacity to adapt or cope with change.	Long-term recoverable changes to social characteristics and values of the communities of interest or community have limited capacity to adapt or cope with change.	Irreversible recoverable changes to social characteristics and values of the communities of interest or community has no capacity to adapt or cope with change.

Figure 12-3: Social risk matrix

For impacts assessed as having a significance of 'moderate' or higher, mitigation and enhancement measures were derived. Mitigation and enhancement measures must meet the requirement of being credible, affordable and commensurate with the predicted level of impact. Stakeholder and community engagement helped inform mitigation and enhancement measures along with further direction provided by the Project proponent.

The significance of impact was further assessed following the assumed effective implementation of mitigation and enhancement measures.

12.2.4 Social Impact Management Plan

The final element of the SIA as shown in Figure 12-2 is the completion of a Social Impact Management Plan, however this has not been completed for this Project as the IAR process does not require a SIMP.

12.3 Social Baseline Analysis

The purpose of the social baseline is to provide an insight into the history, settlement pattern and associated cultural and social values of an area and define the socioeconomic indicators, which may be used for ongoing monitoring and evaluation. The social baseline data is provided in Table 12-1.

Table 12-1: Social baseline data

INDICATOR	LOCAL STUDY AREA 1	LOCAL STUDY AREA 2	LOCAL STUDY AREA 3	NOOSA LGA	QUEENSLAND
Population					
Population 2016	2,337	2,897	4,404	53,630	4,853,048
Population Growth 2011-2016	-2.3%	+7.0%	+7.9%	Na	+10.7%
Population by 2036**	Na	Na	Na	61,940	6,763,153
Population Projections % between 2016 and 2036	Na	Na	Na	0.8%	1.7%
Age					
Population by Age 0-14	17.8%	18.1	17.1%	16.5%	19.7%
Population by Age 15-24	7.8%	10.0%	8.2%	9.2%	13.4%
Population by Age 25-44	17.7%	20.1%	19.4%	20.0%	27.5%
Population by Age 45-64	34.4%	26.9%	35.6%	30.9%	24.7%
Population by Age 65+	22.6%	24.9%	19.9%	23.3%	14.7%
Median Age June 2016	49.5	46.0	47.0	47.8	37
Median Age Projections by 2036	Na	Na	Na	50.6	39.9
Gender demographic					
Male by Age 0-14	52.4%	51.1%	56.4%	51.7%	51.3%
Female by Age 0-14	48.0%	48.1%	43.7%	48.3%	48.7%
Male by Age 15-24	50.8%	50.5%	58.7%	51.9%	50.6%
Female by Age 15-24	48.8%	47.8%	45.6%	48.2%	49.4%
Male by Age 25-44	48.5%	46.1%	52.3%	47.9%	49.0%
Female by Age 25-44	52.8%	55.6%	49.9%	52.1%	47.5%
Male by Age 45-64	47.1%	45.6%	45.1%	46.4%	48.9%
Female by Age 45-64	52.5%	57.4%	55.4%	53.7%	51.1%
Male by Age 65+	52.5%	43.9%	57.5%	48.8%	47.2%
Female by Age 65+	46.4%	55.5%	44.0%	51.2%	52.8%

INDICATOR	LOCAL STUDY AREA 1	LOCAL STUDY AREA 2	LOCAL STUDY AREA 3	NOOSA LGA	QUEENSLAND
Cultural					
Aboriginal and/or Torres Strait Islander peoples	1.8%	3.2%	1.5%	1.5%	4.0%
Country of birth (born overseas)	23.7%	20.7%	24.1%	21.6%	21.6%
Speaks language other than English	6.4%	4.7%	4.2%	5.3%	12.0%
Family and Household Composition					
Couple Families with Children	38.9%	33.0%	39.8%	34.5%	42.5%
Couple Families with no Children	51.5%	42.7%	44.2%	49.2%	39.4%
One Parent Families	9.2%	23.5%	15.4%	15.4%	16.5%
Lone Person Households	15.0%	28.6%	24.4%	24.6%	23.5%
Dwelling Structure					
Separate House	99.7%	87.4%	98.7%	79.3%	76.6%
Semi-detached	0.0%	3.1%	0.2%	12.1%	10.6%
Apartment	0.0%	8.1%	0.2%	7.2%	11.3%
Other (caravan, house boat, cabin etc.)	0.4%	1.0%	0.6%	0.7%	0.2%
Total Dwellings	417	1,196	1613	20,143	1,656,831
Tenure					
Fully Owned	47.3%	39.5%	38.1%	39.1%	28.5%
Being Purchased	38.1%	30.4%	44.6%	31.4%	33.7%
Rented	13.3%	26.4%	15.5%	25.3%	34.2%
Vulnerability					
Persons with a profound or severe disability	4.7%	8.6%	5.0%	5.2%	5.2%
Voluntary work	22.3%	20.2%	22.2%	21.0%	18.8%

INDICATOR	LOCAL STUDY AREA 1	LOCAL STUDY AREA 2	LOCAL STUDY AREA 3	NOOSA LGA	QUEENSLAND
The Index of Relative Socio-Economic Disadvantage (2011)	1014	1,014	1014	1014	1008
Education					
Portion of Population Completed Year 12	20.3%	13.7%	12.5%	15.1%	16.5%
Portion of Population Attained Tertiary Qualification	13.3%	10.0%	15.5%	17.9%	18.3%
Crime					
Offences Against Person (/per 100,000 persons)	Na	Na	Na	454	699
Offences Against Property (/per 100,000 persons)	Na	Na	Na	2,871	4,691
Other Offences (/per 100,000 persons)	Na	Na	Na	3,654	4,753
Economic					
Unemployment Rate	7.1%	7.5%	8.3%	6.7%	7.6%
% of Population in Labour Force	45.4%	42.1%	45.7%	52.7%	52.2%
Full-Time	50.9%	47.0%	50.7%	49.3%	57.7%
Part-Time	37.8%	40.6%	35.5%	39.2%	29.9%
Median Family Income ($/weekly)	1480	1,254	1300	1,403	1,402
Median Individual Income ($/weekly)	601	538	529	595	660
Median Rent ($/weekly)	401	335	346	380	350
Median Housing Loan Repayment ($/monthly)	1723	1,647	1487	1,733	1,733
Method of Travel					
Car	69.3%	70.9%	72.5%	68.4%	69.4%
Worked at Home	13.8%	6.3%	7.7%	10.4%	5.3%

INDICATOR	LOCAL STUDY AREA 1	LOCAL STUDY AREA 2	LOCAL STUDY AREA 3	NOOSA LGA	QUEENSLAND
Walked Only	<1.0%	4.8%	3.1%	3.0%	3.3%
Bus	1.2%	1.8%	0.8%	1.5%	3.0%
Truck	2.0%	<1.0%	1.8%	<1.0%	0.9%
Public Transport (Census day)	1.9%	2.0%	0.6%	2.3%	7.1%
Car (Census day)	68.6%	72.2%	71.0%	69.3%	71.3%

12.3.1 Social Context

Cooroy takes its name from Cooroy Mountain, which is 4 km to the south-east of the current township of Cooroy. The original spelling, 'Coorooey' meant possum in the language of the Gubbi Gubbi people, who were the original inhabitants of the area. The surrounding area supported thick rainforest stands of high value timber trees such as Kauri Pine (*Agathis robusta*). It was these trees that drew European setters to the area and led to the establishment of a railway station at Cooroy and connection to Yandina and the north coast line.

The township of Cooroy grew throughout the 1900's, supported by the key industries of timber and dairy production. Both industries have declined over time with the Butter Factory closing in 1975 and the Cooroy sawmill in 2000. A Cooroy based business that has endured is the Wimmers beverage company. Established in 1910, Wimmers is one of the oldest family operated business in Queensland and in 2015, it established a new factory on Lake Macdonald Drive.

Home to many families who have lived in Cooroy for generations, there is an apparent sense of connection and pride in the history and heritage of the town. There is an active arts community and residents value the environmental attributes of the area.

Much of the area surrounding Cooroy now supports horticulture and cattle farming, along with rural residential allotments. Cooroy itself is a community of almost 3,000 residents, providing a range of retail, educational, health and commercial services.

Located approximately 6 km from the town of Cooroy, the Six Mile Creek Dam, from which Lake Macdonald is formed, was originally constructed in 1965 to provide water storage and supply to the Noosa region. The land inundated to create Lake Macdonald had been used for dairy production. With the creation of the lake, adjoining properties were increasingly sub-divided into rural residential blocks. Taking advantage of the appealing environment, residential houses were established around the lake and throughout the surrounding area. Today, there are 240 private properties adjoining the lake and more than 2,000 people living in the area surrounding the lake.

Figure 12-4: Maple Street, Cooroy.

Figure 12-5: Six Mile Creek Dam, Lake Macdonald, and surrounds

Lake Macdonald is a focal point for the surrounding community, providing a range of recreational and leisure opportunities for residents and visitors alike. The Noosa Botanic Gardens is located on the north-west bank of the lake and is a popular location for local residents and day visitors to enjoy views of the lake and facilities including an amphitheatre, picnic areas and walks. It is also a popular wedding venue and there is a bush chapel for hire. Located across the lake and still in the north-west corner is Camp Cooroora, which is an outdoor recreation and camping and caravan facility operated by Scouts Queensland. Camp Cooroora is used by local scout and girl guide groups along with local school groups.

Lake Macdonald itself is used for a variety of recreational activities including rowing, fishing and non-motorised boating. There is an active rowing club who pay a nominal rent to keep a storage area for boats. Lake Macdonald hosts a number of annual fishing competitions. While boating permits are not required, anglers do require a Stocked Impoundment Permit (SIP) through the Department of Agriculture and Fisheries (DAF) for the lake. Lake stocking is supported by DAF and includes popular freshwater fishing species such as bass and yellow belly. Additionally, the Gerry Cook Fish Hatchery was established on Lake Macdonald in the 1980's and remains an important facility to maintaining viable populations of the endangered Mary River cod. On the northern side of the lake are the starting points for popular horse and bike trails (trails four and seven).

Figure 12-6: Images of Camp Cooroora and its facilities

Figure 12-7: The Noosa Botanic Gardens Amphitheatre

Six Mile Creek runs downstream from Lake Macdonald through the Tewantin National Park, which adjoins the northern side of the lake and then meanders along the western side of the Forest Acres residential area. The creek then travels through areas within the Yurol State Forest, past some rural residential areas to the north east of Pomona and on to the township of Cooran. Similar to Cooroy, Pomona was established following the construction of the North Coast railway (Pinbarren railway siding), which enabled establishment of timber and dairy industries. Pomona was the largest town in Noosa Shire in the early part of the 1900's and was the administrative of the Shire until 1985. With a current population of approximately 3,000 residents, it is a small service centre for the surrounding area. Throughout

the non-residential areas downstream of Lake Macdonald, the primary land uses are forest reserves and small lot horticulture and cattle farming. Some properties with access to Six Mile Creek pump water for local stock irrigation and domestic use.

12.3.2 Social Indicators

The following sections provide a brief overview of social indicators which characterise the local and regional study areas. Indicator data has been sourced from the ABS 2016 Census of Population and Housing, along with population data produced by the Queensland Statisticians Office.

As outlined in section 12.1, the Local Study Area One comprises the area around Lake Macdonald as defined the ABS state suburbs of Lake Macdonald and Tinbeerwah. Local Study Area Two is the township (ABS urban centre locality) of Cooroy and Local Study Area Three, areas up to 15 km downstream of the dam as defined by the urban centre locality of Cooran and state suburbs of Pinbarren, Pomona and Ringtail Creek. The LGA of Noosa is the regional area.

- **Population and population growth** – Local Study Area One recorded a population of 2,337 in 2016, which represented a net 2.3% reduction in the population recorded in 2011. Local Study Area Two had a population of 2,897 in 2016, which was a net 7.0% increase in population from 2011. Local Study Area Three was the most populous with a 2016 population of 4,404, which was an increase of 7.9% since 2011. The reasons why Local Study Area One recorded a decline in population, while the other areas had experienced population growth were not readily evident. In terms of the regional study area, the Noosa LGA recorded a population of 53,630 in 2016. Due to the de-amalgamation on January 2014, a rate of growth is not able to be calculated; however, as a comparator, the population of Queensland increased by net 10.7% since the 2011 census.
- **Projected growth** – According to the Office of the Queensland Statistician, the LGA of Noosa is predicted to have an annual growth rate of 0.8% through to 2036, with the overall population predicted to be 61,940. This growth rate is less than half that of Queensland as a whole, which is 1.7% per annum through to 2036.
- **Age profile** – The age profile highlighted that all the local study areas, along with the regional study area, had a median age notably above that of the Queensland average (39.9). The local study area with the oldest median age was Local Study Area One (49.5) and the youngest was Local Study Area Two (46.0).
- **Gender distribution** – In all local study areas and the Noosa LGA, there were a slightly higher proportion of males in younger age cohorts (i.e. younger than 25 years) with this trend reversing in older age cohorts which recorded a higher proportion of females compared to males (with the exception of Local Study Area Three in the 25-44 age bracket).
- **Housing profile** – All local study areas recorded a higher percentage of fully owned tenures and relatively low median rental rates in comparison to Queensland, which may correlate with a more elderly community. The highest percentage of fully owned tenures was recorded in Local Study Area One (47.3%), while the lowest was in Local Study Area Three (38.1%). Local Study Area Two was the only area with a slightly below average percentage of properties being purchased at 30.4%, which correlates with higher rented tenures (26.4%). Local Study Area Three recorded the highest percentage of properties being purchased tenures (44.6%).
- **Cultural diversity** – In terms of the proportion of the population who identify as being of Aboriginal or Torres Strait Islander heritage, all local study areas recorded a relatively low proportion of the population (3.2%) who identify as such. Local study areas one and three recorded the highest proportion of persons born overseas at 23.7% and 24.1% respectively. Noosa LGA had a percentage of 21.6% which is equal to that of Queensland. All local study areas and Noosa LGA had a lower percentage of persons who speak a language other than English at home compared to the Queensland average of 12.0%.
- **Family structure** – Families without children were the most common family type across all local study areas and the Noosa LGA. Such dominance of this form of family type correlates with the predominance of more elderly households suggesting a relatively high proportion of families where children have left the family home.
- **Dwelling structure** – Dwelling structure in all local study areas was dominated by separate houses. Study area one recorded the highest percentage of separate houses (99.7%) and had no semi-detached or apartments. Local Study Area Two recorded the highest percentage of apartments, accounting for 8.1% of housing stock.
- **Social disadvantage and vulnerability** - The Socio-Economic Indexes for Areas (SEIFA) Index of Advantage and Disadvantage uses a broad range of indices to provide a measure of how a population either experiences characteristics related to relative socioeconomic advantage and relative disadvantage. A higher score on the index means that a higher proportion of the population are experiencing attributes associated with relative advantage, while a lower score on the index indicates relative disadvantage. The SEIFA profile for the local

catchment (as defined by the Statistical Area 2 of 'Noosa Hinterland' as this is the smallest geographical classification for which SEIFA scores are developed) shows the area is relatively advantaged; as is the LGA of Noosa which recorded a SEIFA score 1,014.

- **Voluntary work** – A reflection of community cohesion is the disposition of community members to make a personal contribution to the achievement of community objectives. Throughout the local study areas there was a high level of commitment to voluntary work, which may be an indication of heightened levels of community interest in environmental outcomes or potentially an older community which has time available to commit to volunteering.
- **Education** – Local Study Area one recorded a high proportion of population who had completed year 12 as their highest form of education at 20.3%, which was above Queensland (16.5%). All local study areas and Noosa LGA were below the Queensland average (18.3%) for portion of population with a tertiary qualification.
- **Unemployment rate** – The rate of unemployment across the local study areas (combined 7.7%) was higher than that of Noosa LGA (6.7%), yet comparable to that of Queensland (7.6%). Labour force participation was universally lower across all local study areas than the state average, potentially reflecting a more elderly population.
- **Incomes** – Local Study Area One was the only area with an above average median family income ($1,480/weekly). Noosa LGA recorded a median family income ($1,403/weekly), which is almost equal to that of Queensland ($1,402/weekly).
- **Housing costs** – The median rent was below the Queensland average in local study areas two and three. Local Study Area One recorded an above median rent price of $410/week. The cheaper rental prices in local study areas two and three may be attributed to the increased availability of rental properties and potentially smaller houses. The median housing loan repayments in the study area were equal to or below the Queensland average.
- **Industry of employment** – There were a variety of industries of employment across the study area. In local study areas one and three, the most common industry of employment was specifically 'Hospitals'. In Local Study Area Two the most common industry of employment was 'Supermarket and Grocery Stores'. Cooran's most common industry of employment was aged care residential services. Cooroy's most common industry was supermarkets and grocery stores. Lake Macdonald's most common industry was accounting services. Tinbeerwah's most common industry was cafes and restaurants. Ringtail Creek's most common industry was aged care residential services. Pinbarren's most common industry was primary education. Pomona's most common industry was hospitals. In the Noosa LGA the most common industry of employment was cafes and restaurants.
- **Crime** – The LGA of Noosa recorded an overall lower rate of crime across various categories of crime than the Queensland average. In total, Noosa had a total crime rate of 6,979 per 1,000,000 persons and is lower than Queensland with a rate of 10,142 per 1,000,000 persons.

12.3.3 Social Infrastructure

Social infrastructure for local study areas one and two is shown below in Table 12-2 and Figure 12-8. As there is no social infrastructure impact in Local Study Area Three, it has not been included.

Table 12-2: Social Infrastructure in Local Study Area One and Two.

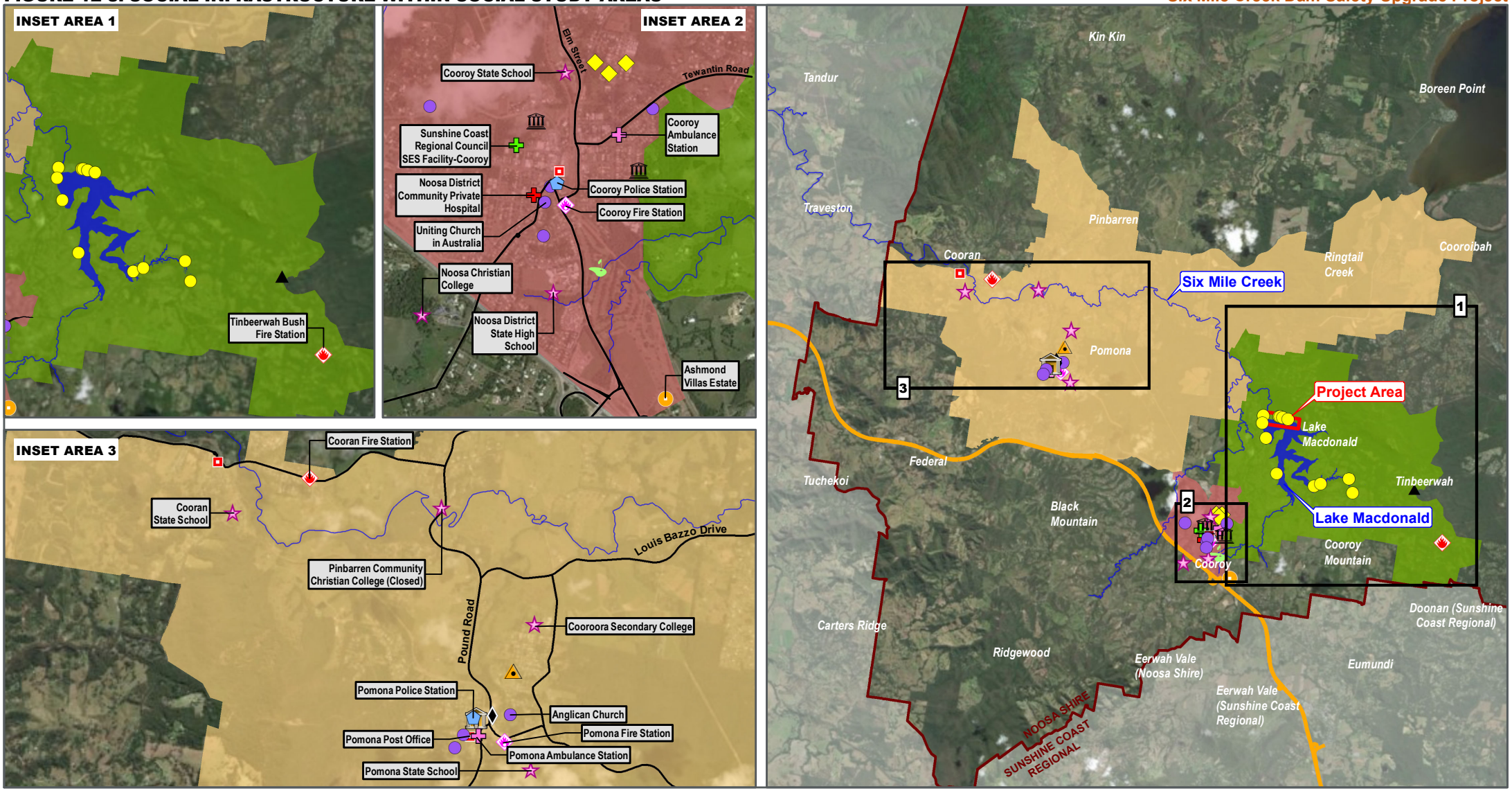
LOCALITY	HEALTH SERVICES AVAILABLE
Local Study Area One	Primal Therapy QLD Revive Naturopathic & Yoga Wellness
Local Study Area Two	Cooroy Amcal Chemist Cooroy Central Guardian Pharmacy Cooroy Dental Surgery Hinterland Dental Group Wattle Street Dental Cooroy Family Practice Maple Street Surgery Eden Rehabilitation Hospital

	Hinteractive Physio Intouch Physio Life Enhancing Chiropractic Make a Difference Health and Fitness Optometry @ Cooroy Sunshine Coast Community Hospice Katie Rose College Sullivan Nicolaides Pathology QML Pathology Suncoast Podiatry Cooroy Doctors Surgery
LOCALITY	EDUCATION SERVICES AVAILABLE
Local Study Area One	Art School Noosa Natura Equine Centre
Local Study Area Two	Cooroy State School Noosa District High School Noosa Christian College
LOCALITY	EMERGENCY SERVICES AVAILABLE
Local Study Area One	Tinbeerwah Rural Fire Brigade
Local Study Area Two	Cooroy Police Station Cooroy Fire Brigade Cooroy Ambulance Station Cooroy SES Station
LOCALITY	RECREATIONAL FACILITIES AND SERVICES AVAILABLE
Local Study Area One	Camp Cooroora Lake Macdonald Rowing Club Tinbeerwah School Park Tewantin Forest Reserve Lookout (Tewantin National Park) Noosa Botanical Gardens
LOCALITY	RECREATIONAL FACILITIES AND SERVICES AVAILABLE
Local Study Area Two	Cooroy Badminton Club Cooroy Golf Club Cooroy Tennis Club Cooroy Lawn Bowls Club Cooroy Football Club Cooroy Gymnastics Club Cooroy Pony Club Cooroy Soccer Club Cooroy Martial Arts

	Cooroy Swimming club
	Cooroy Scouts Association
	Cooroy Rotary Club
	Cooroy Lions Club
	Cooroy Aglow Club
	Cooroy Girl Guides
	Cooroy Genealogical and Historical Society
	Cooroy Combined Coastal Car Club
	Cooroy Gardening Club
	Cooroy Orchid and Permaculture Group
	Cooroy Woodworking Club
	Cooroy Religious and Spiritual Organisation
	Cooroy Probus
	Cooroy Arts and Crafts

FIGURE 12-8: SOCIAL INFRASTRUCTURE WITHIN SOCIAL STUDY AREAS

Six Mile Creek Dam Safety Upgrade Project



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2. Basemap © Nearmap, 2018

seqwater
WATER FOR LIFE

LEGEND

- Kindergartens
- Caravan Park / Camping
- Educational Institutions
- Golf Course
- Hospital
- Museum
- Retirement Centre
- Place of worship
- Post Office
- Ambulance Station
- Fire Station Metro
- Fire Station Rural
- Police Station
- State Emergency Service Facility
- Recreation Areas (see Figure 2-7)
- Community Centre
- Court House
- Public Hall
- Six Mile Creek and Upper Tributary
- Bruce Highway
- Secondary Road
- Local Roads
- Local Governmental Area
- Project Area
- Lake Macdonald
- Social Study Area 1 (Lake Macdonald & Tinbeerwah state suburbs)
- Social Study Area 2 (Cooroy UCL)
- Social Study area 3 (Cooran UCL & Pinbarren, Pomona & Ringtail Creek state suburbs)

OVERVIEW NOOSA SHIRE

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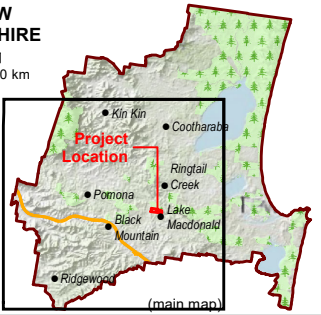

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Temporary Accommodation

There are a range of short-term accommodation options available in the township of Cooroy, including hotels, motels and bed and breakfasts. Within the local study area, all the short-term accommodation facilities are in Cooroy, including Cooroy Luxury Motel Apartments and Eden Rest Short Stay Accommodation. Temporary accommodation is constrained in the region, due to limited supply and demand. The short-term accommodation options available in Noosa (15 km from Lake Macdonald) are extensive and will be available to contractors without detriment to the public.

Existing short-term accommodation closest to the proposal area is located at Cooroy (approximately 5 km) and Noosa (approximately 15 km). According to tourist accommodation data for 2015-2016 published by the ABS, there were a total of 197 rooms and 3,601 bed spaces in Noosa with an average occupancy of 71.2%. This equates to 58 rooms and 1,045 beds available for the proposal without affecting availability for tourist purposes. In Cooroy there were a total of 26 rooms and 45 beds with an occupancy rate of 80%. This equates to six rooms and nine beds available for the proposal without affecting availability for tourist purposes.

12.4 Engagement to Inform the Social Impact Assessment

Engagement of community and stakeholders was a fundamental element of the methodology to complete the SIA. Engagement has included activities to gather information specifically for the SIA, along with activities to raise awareness of the Project impacts and benefits and identify potential measures to minimise and/or avoid impacts where possible (refer to Appendix N, IAR Consultation Report).

Direct engagement to inform the SIA has included:

- Scoping interviews with key stakeholders
- A community impact survey
- A survey of local businesses.

Scoping Interviews

Stakeholders to be engaged as part of SIA scoping were identified with input from Seqwater. They included representatives from local government, community groups, members of the Lake Macdonald Community Reference Group and local businesses (refer to Table 12-3).

An SIA Scoping Interview was developed (provided as Appendix N), which focused on building an understanding of the socio-economic context including social features, trends and values. Perceptions and concerns regarding how the Project may affect different stakeholders were elicited through semi structured interview questions on topics including environmental conditions, health and wellbeing and community cohesion, character and sense of place. The means of delivery was face to face interviews. This allowed open ended questions to be structured and tailored to focus on the key interests of the respective participants. As shown in Table 12-3, surveys were undertaken between March and July 2018.

Table 12-3: SIA scoping interviews

STAKEHOLDER ORGANISATION	ROLE	DATE INTERVIEWED
Noosa and District Landcare	General Manager	28/06/2018
Friends of the Noosa Botanic Gardens	Chair	28/06/2018
Noosa Shire Council	Site Co-ordinator, Noosa Botanic Gardens	28/06/2018
Noosa Shire Council	Manager – Environmental Services	28/06/2018
Cooroy State School	Principal	16/07/2018
Lake Macdonald Rowing Club	Treasurer	16/07/2018
Sunny Coast Trail Horse Riders Club	Trail Coordinator	16/07/2018

STAKEHOLDER ORGANISATION	ROLE	DATE INTERVIEWED
Mary River Catchment Coordinating Committee	Chair	16/07/2018
Adjacent land owner/resident, Lake Macdonald Fish Stocking Group	Business owner	16/07/2018
Noosa and District Landcare	Secretary	02/07/2018
Local resident		30/07/2018
Noosa Parks Association Bird Observers' Group	Convenor	21/07/2018

Transcripts of scoping interviews were recorded and served to compile a detailed and diverse body of information providing insights into the nature of the social environment and how it might be affected by the Project. Key themes were derived through the analysis of the data collated from detailed note taking and manual text tagging. A summary of the issues raised in the Baseline Scoping Interview Survey are shown in Figure 12-9.

As shown in Figure 12-9, the school was the most frequent issue raised, particularly concerns surrounding student safety and noise effects on students. The second most frequent issue raised was consultation. The concern surrounding consultation related to the need to inform the community about the Project including timeframes. Other significant issues raised included the fish hatchery and livestock in the area. Concerns around the hatchery related to its closure during the Project and what will happen to the Mary River cod. Concerns were also raised about livestock wandering onto land exposed as a result of the lake lowering and the potential hazards.

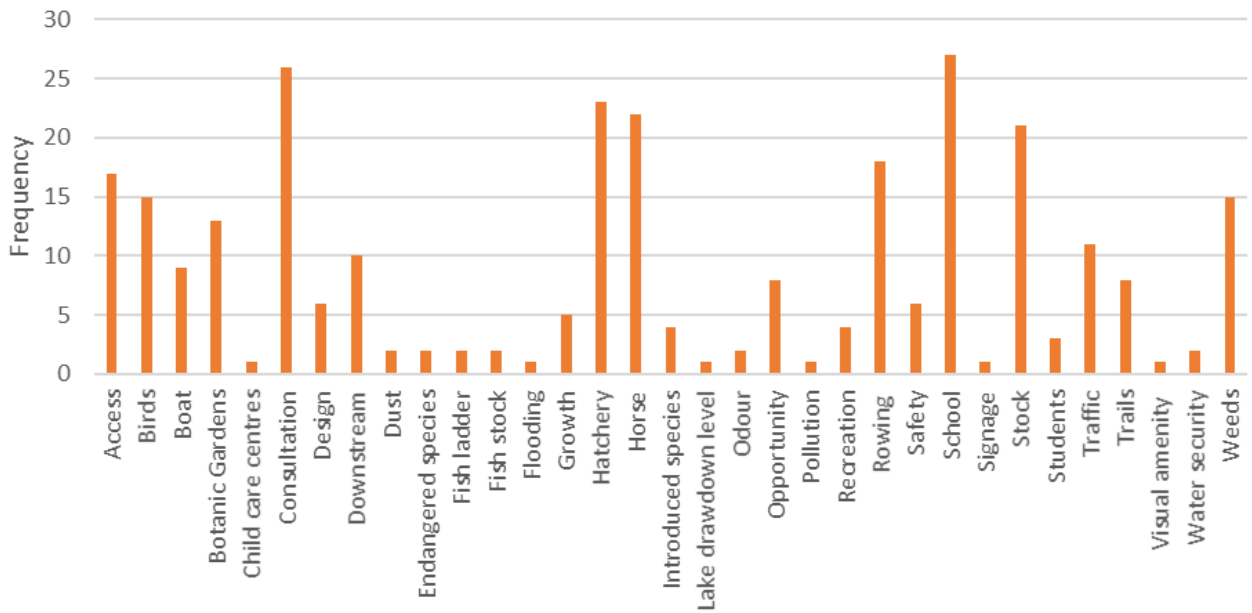


Figure 12-9: The frequency of issues raised in the Scoping Interview Survey.

Community Impact and Business Surveys

Specific information was sought from the community regarding the socio-economic effects various aspects of the Project might generate and how these might be avoided or best managed. This was attained through a community impact survey and business impact survey.

The community impact survey (Appendix N) provided an opportunity to capture input from the local community on key aspects of the Project including general awareness regarding what the Project involves, along with key issues including lowering the lake, traffic, construction noise, air, dust and effects on local business.

Members of the community were able to access the community impact survey via the Lake Macdonald Dam Safety Upgrade web page (yourseqwater.com.au/lake-macdonald-dam-upgrade) and via hard copy during drop-in information sessions at the Cooroy Library. The local community were advised of the survey, its purpose and how to participate in the survey via:

- A letter sent to potentially affected landowners within two kilometres of the lake
- Articles in the Project e-newsletter forwarded to over 400 stakeholders providing links to the surveys
- Articles in the Proponent's monthly recreation newsletter promoting the survey to interested recreation users and groups
- Direct emails to individual stakeholders and community groups identified as interested in or impacted by the Project including members of the Community Reference Group
- Promotion through the Proponent's communication channels (website and Facebook)
- A release to local media promoting the engagement opportunities including the online survey and drop-in information sessions
- Third party communication channels (Facebook, Twitter, newsletters with survey link) including Noosa Council, the Cooroy Chamber of Commerce and Noosa and District Landcare

Community members were also encouraged to attend staffed information sessions at the Cooroy Library to participate in the survey for those unable to access the internet at work or at home.

A total of 31 community impact surveys were recorded, with a summary of the key issues raised provided in Figure 12-10.

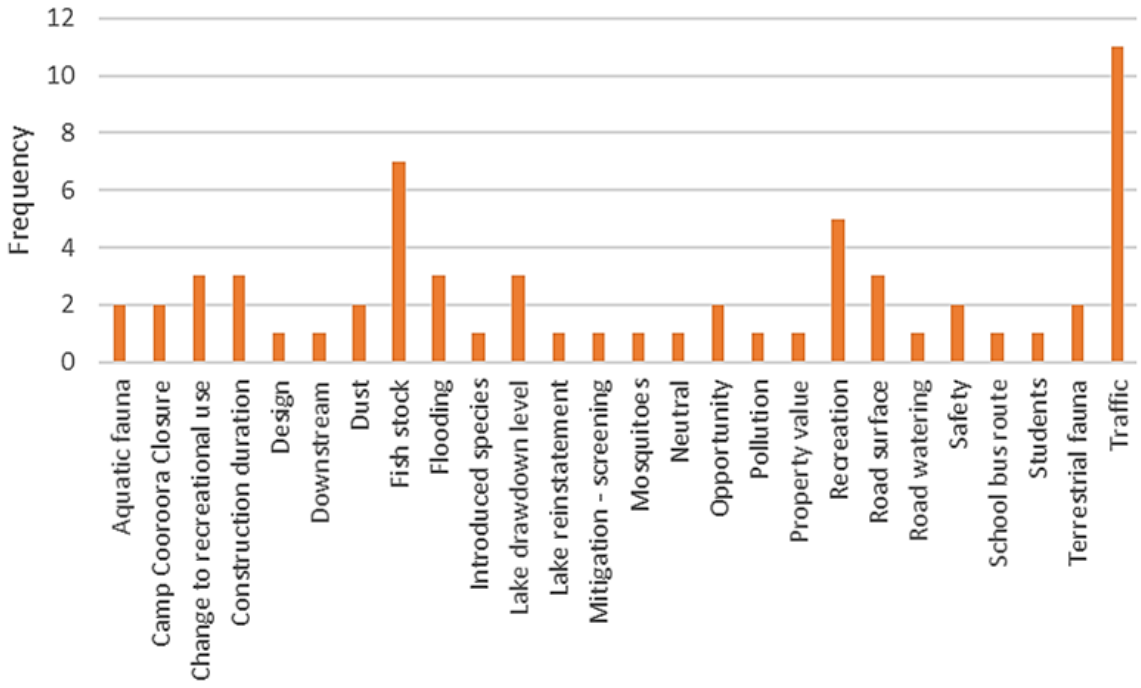


Figure 12-10: The frequency of issues raised in the Community Impact Survey.

As shown in of the key issues raised provided in Figure 12-10, the most frequent issue raised in the community survey was traffic. Residents in the area enjoy the peaceful nature of the location and residents on Gumboil Road and Collwood Road raised concerns about increased vehicle movements in the area associated with the Project. A resident on Lake Macdonald Drive was also concerned about safety surrounding increased truck presence along the road with road deterioration and subsequent safety issues.

The second most common issue raised in the community survey was fish stock. Multiple community members expressed concerns about the impact the lowering may have on current fish stocks in the lake and resources required to restock the lake once the Project was complete.

The third most common issue raised in the community survey was loss of recreation. Residents raised concerns about the reduced recreation opportunities available in the area with the lake closed during construction.

In recognition of the capacity of the Project to affect the local economy, feedback was also sought from local businesses through a business survey (provided as Appendix N). The business survey sought to elicit information regarding the nature and type of local businesses and how they might be affected.

The business survey was also made available through the Project website and the local community was advised of its purpose and how to participate. Hard copies were also available at the drop-in information sessions at the Cooroy library.

A total of 14 completed Business surveys were recorded. A summary of the key issues raised is provided in Figure 12-11.

A key insight attained through the business survey along with scoping interviews, was that the perceived impact of the Project on businesses is minimal. The local economy is not highly reliant on tourism and therefore, the temporary lowering of the lake and subsequent reduction in tourist numbers is not likely to have a major impact on local businesses in this regard.

As shown in Figure 12-11, both traffic and the closure of Camp Cooroora were the most frequent issues raised. A business raised concerns around the potential for congestion on Gumboil Road and Sivyers Road to Cooroy-Noosa Road. A second business highlighted the need for extra signage to alert people to the extra traffic. Concerns were raised about the loss of outdoor educational opportunities with the closure of Camp Cooroora during the Project.

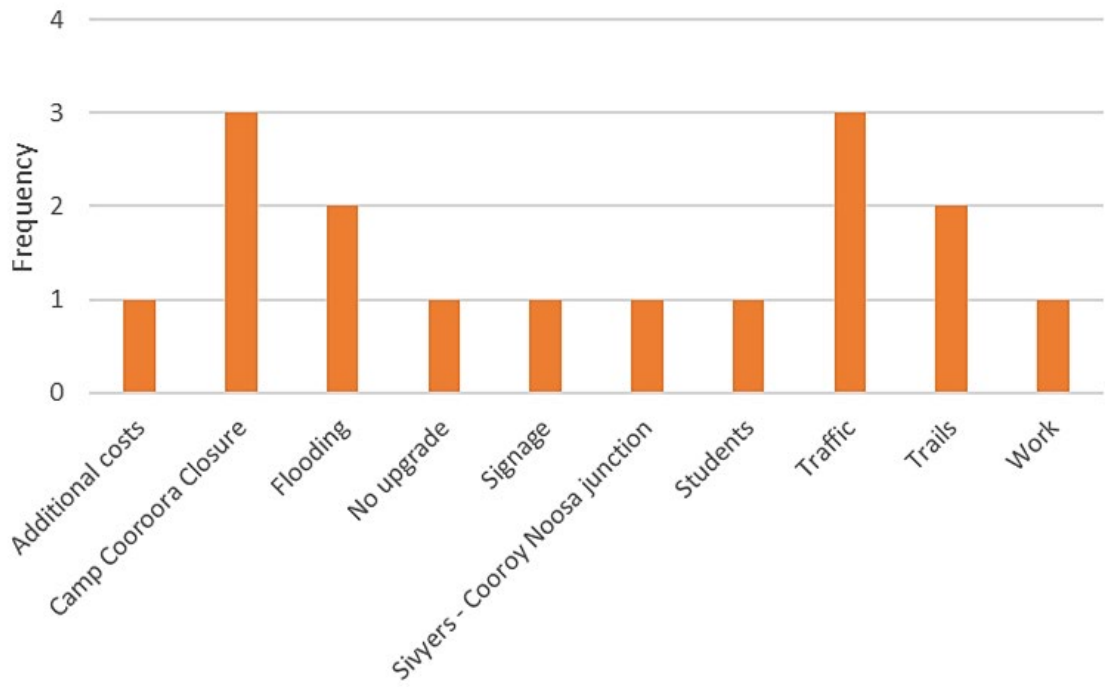


Figure 12-11: The frequency of issues raised in the business survey.

IAR Engagement

The IAR engagement program also included an online interactive map, a dedicated project hotline and email, and drop-in information sessions at the Cooroy Library. A total of 485 people participated in IAR engagement activities between 02 July and 14 September 2018. A summary of the key issues raised is provided in Figure 12-12.

As shown in Figure 12-12, traffic was the most frequent issue raised through the IAR stakeholder and community engagement activities. Traffic questions and comments received included concerns about student safety at the Cooroy State School and along school bus routes. The community also highlighted other safety concerns along the proposed traffic routes and possible congestion issues. The second most common issue raised was consultation and the need to adequately engage and inform the community about all aspects of the Project. The third most common issue raised was the possible noise impacts. Questions and comments about noise related to construction activities including pumping to lower the dam, removal of the current dam structure, concrete batching and associated vehicle movements.

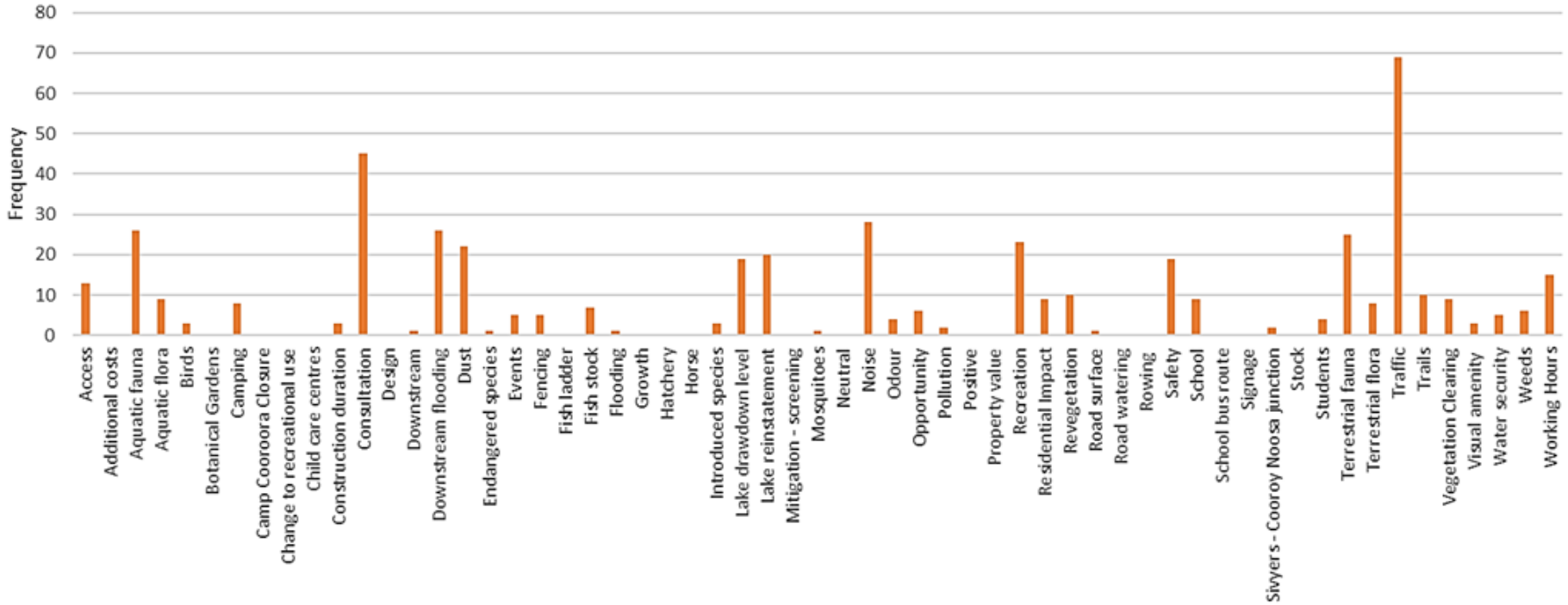


Figure 12-12: The frequency of issues raised through IAR engagement activities (online and face to face)

12.5 Social Benefits and Impacts

Potential social benefits and impacts associated with the Project were identified through the engagement of community and stakeholders as outlined in section 12.4. In addition, Project activities and outcomes (direct and indirect) during construction and once operational were reviewed to confirm credible impact pathways and the stakeholders and community members who would be affected.

12.5.1 Land Use and Property

The Project would generate a variety of land use and property effects, with properties located in close proximity to the work site at the dam and around the periphery of the lake the most affected (Figure12-13). There are six residential properties located along Lake Macdonald Drive north of the Liane Drive intersection, which are within 200 m of the dam construction site. These properties are likely to experience direct noise effects due to construction related activities such as sheet pile installation, dam demolition, bulk earthworks and vehicle movements.

Private properties at the periphery of the lake may be affected due to the lowering of the lake for the construction period. The visual appeal of lakeside views is a factor influencing the value of such properties. For the period the lake is lowered, such appeal will be diminished and subsequently, the value of properties may be temporarily affected. This would only apply in circumstances where a resident decided to sell the property when the lake is lowered and there would be no negative influence on property prices in the longer term.

A further effect on lakeside properties is the risk of livestock wandering into the area exposed from the lake lowering. There are properties that do not currently fence their property boundary, but rather use the lake itself as the property boundary. Lowering of the lake may increase the risk of animals such as cattle and horses wandering into muddy areas and fencing to restrict stock movements or alterations to current use of lands adjoining the lake may be needed during the construction period.

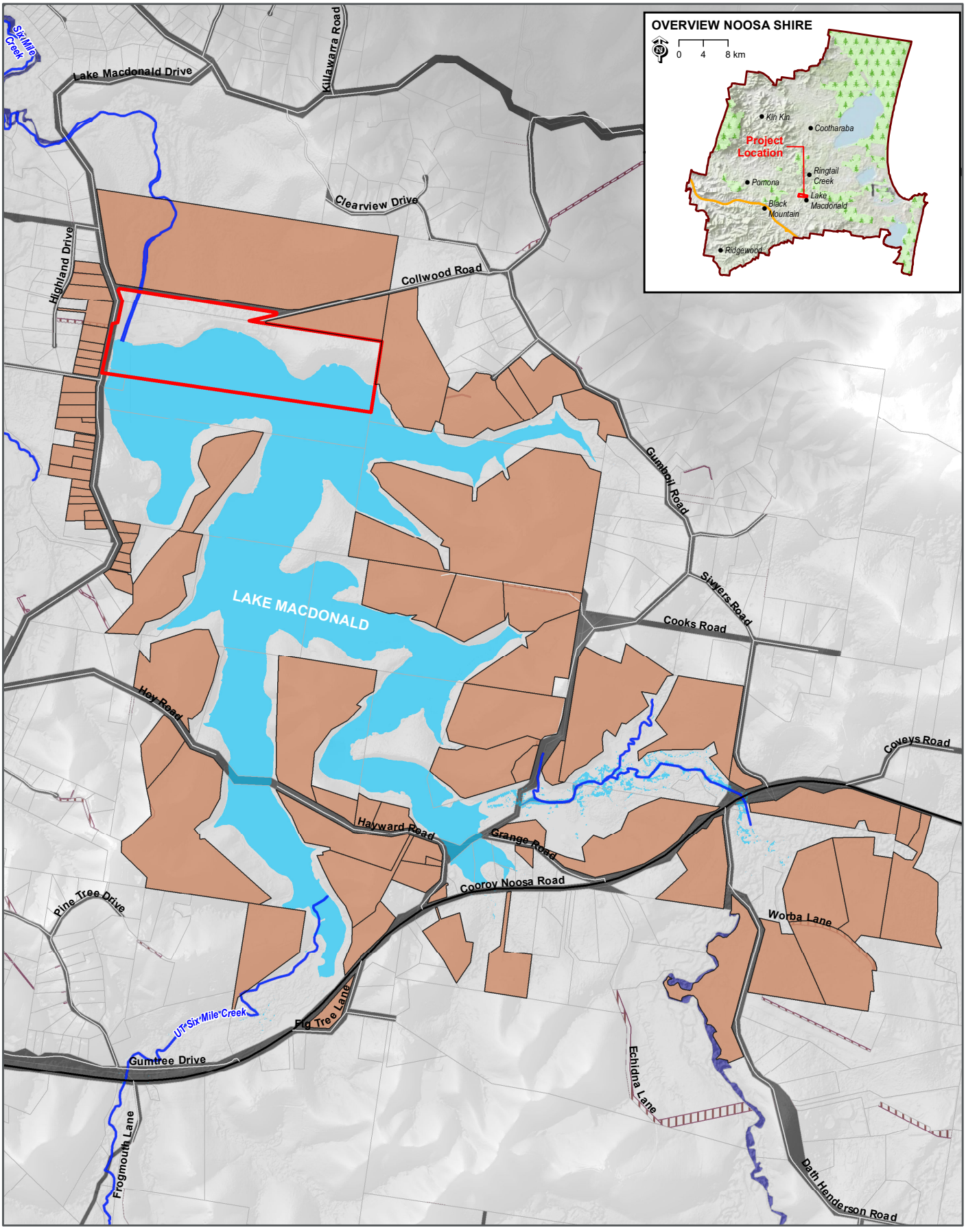
The Project may generate some property and land use effects along Six Mile Creek downstream of the Dam. Some residential properties, such as those on Possum Lane (Figure 12-14), can only be accessed via low level bridges over Six Mile Creek. Such bridges can be cut due to flooding and may be affected when water releases are made to lower the lake. Further details regarding potential downstream effects are outlined in Chapter 6 – Water Resources. A major positive effect associated with the Project is the improved dam safety it will deliver, particularly to people and property downstream. This may also have a positive effect on property prices.

In order to deliver the Project safely, a number of current uses on land owned by Seqwater will be temporarily changed or restricted. This will affect the land on which the Gerry Cook Fish Hatchery, Lake Macdonald Rowing Club and Camp Cooroora currently operate. As outlined in Chapter 2, Seqwater has been working with the Mary River Catchment Coordinating Committee (MRCCC) to implement alternative arrangements for the duration of the construction period and the facility will be reinstated when the Project is complete. Seqwater has also been working with Scouts Queensland, operators of Camp Cooroora, to close the camp grounds prior to construction. It is Seqwater's intention to reinstate the site for camping once the Project is complete. The Lake Macdonald Rowing Club has been operating on a month to month licence and Seqwater will require the club's licence and access to the site to end prior to construction.

While there would be no direct property effect on the Noosa Botanic Gardens, the visual amenity and outlook from the gardens may be impacted following the lake lowering, as well as potential odour effects from exposed plant material and silt. There may also be an impact on local amenity due to increased traffic and construction related noise and dust generation. Such effects may result in reduced patronage at the Noosa Botanic Gardens including weddings and other special events throughout the construction period.

FIGURE 12-13:
AFFECTED PROPERTIES SURROUNDING LAKE MACDONALD

Six Mile Creek Dam Safety Upgrade Project



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SOURCES:
1. Localities, Roads, LGA, Waterways, Protected Areas ©State of QLD (DNRME) 2018
2. Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

seqwater WATER FOR LIFE

LEGEND

- Bruce Highway
- Secondary Road
- Local Roads
- Watercourse
- Six Mile Creek and Upper Tributary
- Lake Macdonald
- Project Area
- Local Governmental Area
- Affected Properties

Cadastral Boundaries

- Lot Type Parcel
- Road Type Parcel
- Easement

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Figure 12-14: An image of one low level property access bridge downstream – Possum Lane.

12.5.2 Way of Life (how people live, work, play, and interact)

Lake Macdonald is a focal point for the surrounding community and local residents and visitors use it for a variety of recreational and leisure activities such as rowing, kayaking, bush walking and horse riding. Lowering the lake's water level for the construction period will temporarily inhibit enjoyment of such activities.

Rowing is an activity enjoyed by residents and there is an active Lake Macdonald Rowing Club, which currently rows on the lake four days a week. This activity will not be permitted throughout the construction period and while some concerns have been raised the club's membership numbers will be affected, the current president has confirmed it is the club's intention to return to Lake Macdonald once the Project is complete.

Residents also enjoy fishing and birdwatching at Lake Macdonald. The lake is a popular fishing spot and concerns have been raised regarding the time it may take for fish stocks to recover following reinstatement of the lake. Fishing and fish stocking will not be permitted at the lake during construction and while birdwatching will still be permitted, the lake lowering may affect its enjoyment.

Residents in the area enjoy jogging and walking their dogs around the lake, using local roads as pedestrian paths. Increased traffic along with frequent heavy vehicle movements on these roads may detract from the enjoyment of such activities.

On the northern side of the Dam there are multi-use trail heads (trails four and seven of the Noosa Trail Network). The trails are popular for horse riding, mountain biking and bushing walking. Project works will require the relocation of these trail heads to maintain access, however, this may impact parking available for horse floats and vehicles, thereby inhibiting access for this group of people.

12.5.3 Community (including cohesion and sense of place)

A key aspect of the Project which may affect the cohesion of the local community is traffic. Cooroy is a relatively small rural town and the environment around Lake Macdonald is quiet and peaceful, an attribute local residents value. Project construction will generate traffic in the form of truck and heavy vehicle movements, along with traffic associated with the 110-person (at peak) workforce. The likely heavy vehicle route is a one-way loop as described in Chapter 9 – Traffic and Transport, with vehicles entering Sivyers Road and exiting via Lake Macdonald Drive. It is predicted that at peak the Project would generate on average up to 5.2 truck movements per hour. If a loop arrangement were not used, return trips would double this truck movement impact.

The increase in traffic was the most common issue raised during the stakeholder and community engagement program with concerns including safety, noise, road condition, dust and visibility. Specific concerns raised regarding safety included:

- The interface of truck movements and school bus routes on Lake Macdonald Drive, Gumboil Road and Sivyers Road
- Increased traffic through the intersection of Sivyers Road / Cooroy-Noosa Road, which has already been highlighted as a safety hazard for traffic
- Decreased safety at pick up zones for students attending Cooroy State School on Elm Street and the Tadpoles day care centre on Lake Macdonald Drive
- Decreased safety of people who use Gumboil Road for walking, jogging, dog walking and bird watching due to truck and other vehicle movements.

Specific concerns were also raised regarding noise generated by trucks in the proximity of the Cooroy State School on Elm Street to the designated heavy vehicle route. Similarly, residents along Lake Macdonald Drive, Sivyers Road and Gumboil Road may be affected by increased noise due to truck movements. Also, associated with increased heavy vehicle movement is the deterioration of local roads, which can further exacerbate road safety concerns. The generation of dust was also raised as a concern due to the use of Collwood Road, which is unsealed. As there are few residential properties along Collwood Road, dust generation is considered more a road safety issue (impaired visibility) than an air quality issue.

The temporary loss of community facilities may affect community cohesion and sense of place. Camp Cooroora will close for the duration of construction, however it is Seqwater's intent to allow the operators (Scouts Queensland) to return to the site once the Project is complete. The camp ground is open to the general public, community groups and local schools such as St Andrew's Anglican College in Peregian Springs. It is also a source of temporary accommodation for caravans and campervans, particularly to support events such as annual fishing competitions on Lake Macdonald.

While there is likely to be some negative effects on community cohesion throughout construction, the Project does provide a significant social benefit once operational. Upon completion, the Project would see the reinstatement of Lake Macdonald to its current water level (full supply level). A key factor driving the investment decision to upgrade the dam rather than explore other options to reduce the dam safety risks, was the integral role Lake Macdonald plays as part of the community in providing environmental, cultural and social value. The upgrade and reinstatement of the lake is a wholly positive outcome for the surrounding community.

12.5.4 Environment (including amenity and environmental integrity)

An evident characteristic of the Noosa Shire and the communities surrounding the Project, is the value placed on the natural environment. The Project is within the boundaries of the Noosa Biosphere, which was established in 2007 with recognition under UNESCO's Man and the Biosphere Program (MAB). There is strong community involvement in environmentally focused organisations such as Landcare – the Noosa and District Landcare recorded 283 members, with 4,368 volunteer hours and 80 stakeholders in the 2015-2016 financial year. Many residents in the region have a high level of environmental consciousness and awareness.

As detailed in Chapter 7 – Aquatic Ecology, the Project is likely to generate effects on the aquatic ecology of Lake Macdonald including the potential for fish mortality, aquatic plant reduction, spread of weeds and introduced species, reduction of fish stock levels, but also the potential for fish habitat creation. There would also be effects on terrestrial ecology including the potential to displace migratory birds, along with native species such as the Pitta versicolor (Noisy Pitta), which are valued by birdwatchers.

Considering the elevated level of environmental consciousness within the community surrounding the Project, there is potential for heightened levels of community agitation and discourse, which can be a cause of anxiety and distress. There is potential for sectors of the community to vocalize opposition to the Project based on the effects it would have on keynote species such as the Mary River cod, Australian lungfish and Giant barred frog.

12.5.5 Economy (including effects on businesses and economic opportunity)

The Project would generate both direct and indirect economic benefits to the region through direct employment of up to 110 people during construction and associated services. Considering the strong construction experience and skills on the Sunshine Coast, it is expected most of the construction workforce would be residents of the region. Therefore, they will travel to the work site daily by private means of transport and there will be minimal need for accommodation

of construction related personnel. It is likely some members of the construction workforce may choose to relocate and rent in the local area, which would provide some economic inflows to local accommodation providers.

The Project would likely generate some commercial opportunities for local businesses, such as earthworks, service providers, and flow on effects from having increased construction personnel in the area (take-away shops, service stations etc.). The local community would further gain through the expenditure of the Project workforce in the local area. For instance, assuming an average expenditure of $15/day across a median level construction workforce of 80 people results in a $626,400 injection into the local economy. This wealth multiplies to generate further employment and investment potential.

A negative economic effect associated with the Project would be the temporary loss of employment and other economic activity generated by the Gerry Cook Fish Hatchery and Camp Cooroora. The hatchery currently supports a small number of staff, largely funded through donations. Camp Cooroora, between 1 April 2017 and the 31 March 2018 (scouting financial year), generated total receipts for camping activities of $58,255. There are two primary caretakers who would need to find alternative employment for the duration of the construction period, assuming the camp could be reinstated once the Project is complete.

Lake Macdonald regularly hosts a number of freshwater fishing competitions. These events attract people to the area and result in an injection of wealth into the local economy, particularly to accommodation providers along with retail and food and beverage businesses. Following reinstatement of the lake, it may take time fish stocks to return to current levels, so the economic loss for such businesses could extend beyond the construction period.

It is also likely the Noosa Botanical Gardens may be economically disadvantaged due to the loss of weddings and other events during the lake lowering and construction period.

12.5.6 Wellbeing and Health (physical and mental)

Access to social infrastructure such as recreation facilities influences the health and wellbeing of communities. The presence of the construction workforce in the local area may put additional demand on the limited social infrastructure (such as health services) in Cooroy. However, considering the relatively small size of the workforce and the fact they will not be residing in the town during the Project, additional pressure on social infrastructure is expected to be minimal.

Lake Macdonald is an integral part of the community, and its accessibility influences the wellbeing of local residents. The lake and surrounding area are enjoyed for their picturesque natural qualities. Groups such as NoosaCare Kabara regularly enjoy the qualities of the lake and the Noosa Botanic Gardens may need to seek alternative options due to the lake lowering and associated visual and odour effects. The lake lowering is expected to disturb the natural environment and expose vegetation and fauna, which may cause distress to some local residents.

The Project would generate local noise and dust at the work site and along the heavy vehicle routes. Prolonged exposure to noise and dust can affect the health and wellbeing of local residents. Property owners and occupiers living around the lake may also be negatively impacted by the temporary odours generated during the initial lowering period associated with exposed vegetation and silt. Community members have also identified further health risks associated with increased mosquito habitat due to the lake lowering and pooling of stagnant water. The creation of mosquito habitat has the potential to increase risk of mosquito borne diseases such as Ross River Virus.

Once complete, the Project would have a major beneficial effect on the wellbeing of local residents. For those who live downstream, wellbeing is enhanced due to the improved safety and integrity of the dam. For residents around the lake and the broader community, the lake which provides visual appeal and recreational and leisure opportunities is restored.

12.6 Social Impact Assessment

As outlined in section 12.2.3, the assessment of social impacts takes into consideration duration, extent, sensitivity (vulnerability to change and capacity to adapt), severity, and level of community concern or support. The level of pre-mitigated significance of each identified impact is assigned as being Low, Moderate or High through application of the social risk matrix (Figure 12-3) and assessment of the predicted likelihood and social consequence of the impact.

As provided in Table 12-4, identified impacts and benefits have been assigned under the following themes:

- Land use and property
- Way of life (how people live, work, play, and interact)
- Community (including cohesion and sense of place)

- Environment (including amenity, aesthetics, and access)
- Economy (including effects on businesses and economic opportunity)
- Wellbeing and health (physical and mental).

Table 12-4: Social Impact Assessment table.

IMPACT	DESCRIPTION	STUDY AREA	TIMEFRAME FOR REALISATION	UTILITY	IMPACT ASSESSMENT BEFORE MITIGATION/ENHANCEMENT		RISK RATING	MITIGATION/ENHANCEMENT MEASURES	DESCRIPTION (…AS A RESULT OF…)	IMPACT ASSESSMENT AFTER MITIGATION/ENHANCEMENT		RESIDUAL RISK RATING
					Likelihood	Consequence				Likelihood	Consequence	
Land use and property												
Direct impacts on surrounding residential properties	• Direct effects (noise, dust and vibration) on six residential properties located within 200m of dam construction site.	1	Construction	Negative	Almost Certain	Major	High	• Seqwater to engage individual landowners and occupiers to find suitable solutions.	• The consequence of the impact is reduced through the identification of suitable solutions for each individual landowner or occupier.	Almost Certain	Moderate	High
Temporary reduction in property values	• Property values surrounding the lake may temporarily decrease due to the construction works and loss of visual amenity.	1	Construction	Negative	Possible	Moderate	Medium	• Seqwater to keep local residents and real estate agents informed of Project impacts.	• The local community is informed about the Project impacts and can make informed decisions regarding property sales.	Unlikely	Moderate	Medium
Risk of livestock loss or injury on adjoining properties	• The lake currently acts as a boundary for some adjoining properties. • The lowering may result in livestock wandering onto exposed muddy land	1	Construction	Negative	Almost Certain	Moderate	High	• Seqwater to engage affected landowners to identify and assist with solutions to protect livestock such as boundary fencing or paddock management.	• The likelihood of the impact is reduced through engagement with landowners and solutions such as boundary fencing.	Possible	Moderate	Medium
Access to water for stock and domestic purposes	• Some residents surrounding the lake pump water for stock and domestic watering purposes. • Lowering of the lake may result in the temporary loss of this water source to some residents.	1	Construction	Negative	Almost Certain	Moderate	High	• Seqwater to advise residents on construction timeframes and potential effects.	• Providing residents adequate time to make alternative arrangements reduces the consequence of the impact.	Almost Certain	Minor	Medium
Diminished amenity of Noosa Botanic Gardens	• Loss of amenity due to traffic and construction activities resulting in reduced patronage.	1 and 2	Construction	Negative	Likely	Moderate	High	• Community engagement and notification	• Due to limited mitigation being identified there will be no change.	Likely	Moderate	High

IMPACT	DESCRIPTION	STUDY AREA	TIMEFRAME FOR REALISATION	UTILITY	IMPACT ASSESSMENT BEFORE MITIGATION/ENHANCEMENT		RISK RATING	MITIGATION/ENHANCEMENT MEASURES	DESCRIPTION (…AS A RESULT OF…)	IMPACT ASSESSMENT AFTER MITIGATION/ENHANCEMENT		RESIDUAL RISK RATING
Access restrictions for some properties downstream	• During the lowering process, there is potential for high flows in Six Mile Creek to cut off some downstream residents.	3	Construction	Negative	Possible	Major	High	• Ensure access requirements are considered when determining flow rates for dam lowering. • Ensure communication channels are available for downstream residents in case of loss of access	• The likelihood of this impact is reduced when flow rates are managed to reduce effects downstream and potentially affected residents can communicate with the Project team.	Unlikely	Major	Medium
Way of Life (how people live, work, play, and interact)												
Lack of access to the lake for recreational activities	• There will be temporary loss of recreation opportunities when the lake is lowered.	1 and 2	Construction	Negative	Almost Certain	Minor	Medium	• Communication to the wider community on alternative recreation areas during the construction period. • Reinstating community infrastructure following construction.	• Mitigation measures will not have any discernible effect on consequence or likelihood during construction.	Almost Certain	Minor	Medium
Loss of fish resources affecting fishing	• The lowering of the lake will significantly decrease fish resources. • Fish stocks may take many years to re-establish.	1	Construction & Operations	Negative	Almost Certain	Moderate	High	• Management of the lake during the construction period to provide a suitable environment for remaining aquatic life. • Supporting the restocking of the lake following construction.	• As a result of the management and restocking of the lake the consequence of the impact is reduced.	Almost Certain	Minor	Medium
Restricted access to multi-use trails	• Trail heads located near the Project area will not be accessible. • Trails are used for walking, horse riding and mountain bike riding. • Relocation of access points may impact parking for horse floats and vehicles, thereby inhibiting access for some users.	1	Construction	Negative	Almost Certain	Moderate	High	• Trail heads will be relocated to allow continued use.	• As a result of the relocation of the trail heads the consequence of the impact will be reduced.	Almost Certain	Minor	Medium

IMPACT	DESCRIPTION	STUDY AREA	TIMEFRAME FOR REALISATION	UTILITY	IMPACT ASSESSMENT BEFORE MITIGATION/ENHANCEMENT		RISK RATING	MITIGATION/ENHANCEMENT MEASURES	DESCRIPTION (…AS A RESULT OF…)	IMPACT ASSESSMENT AFTER MITIGATION/ENHANCEMENT		RESIDUAL RISK RATING
Reduced safety for local joggers and dog walkers	• Local joggers and dog walkers use the roads around the dam. • Increased traffic may affect safety.	1	Construction	Negative	Possible	Major	High	• Ensure implementation of Traffic Management Plan. • Community engagement program to make local residents aware of the potential impacts and timing of construction activities.	• As a result of the implementation of the Traffic Management Plan and community engagement program, the likelihood of the impact will be reduced.	Unlikely	Major	Medium
Community (including cohesion and sense of place)												
Preservation of the lake as a valued community asset	• The local community highly value Lake Macdonald and the surrounding environment.	All Study Areas	Operations	Positive	Almost Certain	Moderate	High	• The Project will allow the lake to be reinstated for the community to enjoy.	• Mitigation measures will not have any discernible effect on consequence or likelihood of this benefit.	Almost Certain	Moderate	High
Reduced safety for students and children	• Reduced safety for students walking home from bus stops. • Reduced safety for children leaving and entering Cooroy State School. • Reduced safety during drop off and pick up times for Tadpoles day care centre.	1 and 2	Construction	Negative	Possible	Major	High	• Implementation of Traffic Management Plan developed in consultation with key stakeholders.	• As a result of the implementation of the Traffic Management Plan the likelihood of the impact will be reduced.	Unlikely	Major	Medium
Reduced road safety	• The community identified Sivyers Road-Cooroy Noosa Road junction as an intersection with a high accident rate. • Heavy vehicles and workforce vehicles will use local roads during construction.	1 and 2	Construction	Negative	Possible	Major	High	• Ensure the modes of recorded accidents at this intersection are considered in transport routes and engage road authorities if intersection changes are required • Engage road authorities if traffic and transport assessment identifies improvements to intersections, regardless of the Project impacts • Ensure implementation of Traffic Management Plan developed in consultation with key stakeholders.	• As a result of the implementation of the Traffic Management Plan the likelihood of the impact will be reduced.	Unlikely	Major	Medium

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Traffic noise disturbing students attending Cooroy State School	• The prep, year one and year two buildings, school hall and oval are all close to Elm Street. • The prep classroom is within 15 m of Elm Street and will be the most affected.	2	Construction	Negative	Likely	Moderate	Medium	• Engagement with school to identify appropriate mitigation measure/s.	• Further investigation of mitigation measures will help to reduce the consequence of the impact.	Likely	Minor	Medium
Reduced safety due to deterioration of road conditions	• An increased rate of road deterioration can be expected with the heavy vehicle and workforce vehicle movements.	1 and 2	Construction	Negative	Possible	Major	High	• Work with council to ensure road deterioration is appropriately managed.	• Through appropriate management of road deterioration, the likelihood of the impact is reduced.	Unlikely	Major	Medium
Loss of community facility - Camp Cooroora (Scouts Queensland)	• Camp Cooroora, located off Collwood Road, is open to scout groups, local schools and the general public. • The camp site will be used as a borrow area during construction.	1 and 2	Construction & Post Construction	Negative	Almost Certain	Moderate	High	• Seqwater is working closely with the operators Scouts Queensland and will reinstate the camp grounds once construction is complete.	• Reinstating the camp site reduces the consequence of the impact.	Almost Certain	Minor	Medium
Environment (including amenity, aesthetics, and access)												
Reduced amenity on Collwood Road due to dust from vehicle movements	• Collwood Road will be used as a route for construction vehicles • The road is unsealed and dust will be generated if unmanaged.	1	Construction	Negative	Likely	Minor	Medium	• Ensure dust suppression measures are employed as required.	• Through the use of dust suppression measures the likelihood of the impact is reduced.	Unlikely	Minor	Low
Community concerns regarding loss of aquatic ecology	• The aquatic ecology in the area will be affected when the lake is lowered.	1 and 2	Construction & Operations	Negative	Possible	Moderated	Medium	• Ensure implementation of an appropriate lake lowering plan to manage aquatic ecology. • Ensure adequate ongoing engagement with stakeholders and the community to identify ecological impacts.	• Application of the mitigation measures reduces the consequence of the impact.	Possible	Minor	Medium

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Community concerns regarding the infestation of weeds and pest species	• Terrestrial weed species could spread on the exposed banks of the lake. • Terrestrial pest species such as pigs and deer drink from the lake and may become stuck with dam lowering.	1	Construction	Negative	Possible	Moderated	Medium	• Work with agencies such as Landcare and Noosa Regional Council to implement appropriate management measures	• Application of the mitigation measures reduces the consequence of the impact.	Possible	Minor	Medium
Diminished bird watching experience	• Lake Macdonald is a popular bird watching locality. • Lowering the lake will disrupt bird activity.	1	Construction	Negative	Likely	Minor	Medium	• Community engagement and notification	• Due to limited mitigation being identified there will be no change.	Likely	Minor	Medium
Economy (including effects on businesses and economic opportunity)												
Provision of opportunities for businesses in the region due to Project capital expenditure	• Direct economic stimulation in local economies due to CAPEX expenditure. • Project procurement in local communities	All Study Areas	Construction	Positive	Possible	Moderate	Medium	• Application of Local Buy policies to ensure local businesses have every opportunity to supply goods and services to the Project.	• Application of the enhancement measure will improve the likelihood of local businesses benefiting from the Project.	Likely	Moderate	High
The creation of direct and indirect employment opportunities in local economies	• A workforce of 110 (at peak) will be used for the Project. • Stimulate additional employment opportunities throughout the region.	All Study Area	Construction	Positive	Likely	Minor	Medium	• Active targeting of workforce from local communities.	• Application of the enhancement measure will improve the consequence of the benefit.	Likely	Moderate	High
Injection of wealth into local economies due to workforce expenditure	• An estimated workforce expenditure was calculated at $626,400. This expenditure was calculated assuming an average workforce of 80 people spending $15.00 a day across the two-year construction period (based on calendar year working days 261).	1 and 2	Construction	Positive	Likely	Minor	Medium	• Encourage workforce to access local goods and services.	• Application of the enhancement measure will improve the likelihood of the effect.	Almost Certain	Minor	Medium

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Temporary loss of employment (e.g. hatchery (MRCCC) and Camp Cooroora)	• Hatchery workers to be redeployed to alternative location. • Temporary closure of Camp Cooroora will require site managers to relocate and find new employment.	1	Construction	Negative	Almost Certain	Minor	Medium	• Seqwater to assist hatchery operators to remobilise operations once the Project is complete. • Seqwater to reinstate the camp grounds once the Project is complete.	• Application of the mitigation measures reduces the consequence of the impact.	Almost Certain	Insignificant	Medium
Loss of income at the Noosa Botanical Gardens and other businesses	• Reduced patronage at Noosa Botanic Gardens. • Fishing competitions on Lake Macdonald unable to be held throughout construction and while fish stocks are replenished.	1 and 2	Construction	Negative	Likely	Minor	Medium	• Community engagement and notification	• Due to limited mitigation being identified there will be no change.	Likely	Minor	Medium
Additional demand placed on social infrastructure	• Presence of the construction workforce in the local area could put additional demand on limited health infrastructure in Local Study Areas 1 and 2.	1 and 2	Construction	Negative	Unlikely	Minor	Low	• Identification of alternative services that may be utilised should local facilities be unavailable (i.e. Nambour General Hospital, Sunshine Coast University Hospital, Sunshine Coast Day surgery, etc.)	• Alternative facilities to support local resources	Unlikely	Minor	Low
Diminished enjoyment of Lake Macdonald and surrounding area	• Lowering of the Lake will affect visual amenity and the ability to enjoy recreational and leisure opportunities.	1 and 2	Construction	Negative	Possible	Moderate	Medium	• Community engagement and notification	• Due to limited mitigation being identified there will be no change.	Possible	Moderate	Medium
Exposure to noise and dust reducing wellbeing	• Prolonged exposure to noise and dust can create health effects.	1	Construction	Negative	Likely	Moderate	High	• Development and implementation of Construction Environmental Management Plan to monitor and manage noise/dust emissions • Work with sensitive receptors to ensure implementation of location specific mitigations	• Application of the mitigation measures reduces the likelihood of the impact.	Possible	Moderate	Medium

IMPACT	DESCRIPTION	STUDY AREA	TIMEFRAME FOR REALISATION	UTILITY	IMPACT ASSESSMENT BEFORE MITIGATION/ENHANCEMENT		RISK RATING	MITIGATION/ENHANCEMENT MEASURES	DESCRIPTION (…AS A RESULT OF…)	IMPACT ASSESSMENT AFTER MITIGATION/ENHANCEMENT		RESIDUAL RISK RATING
Increased risk of mosquito related disease	• As the lake is lowered small pools of water may attract mosquitos	1	Construction	Negative	Possible	Major	High	• Ensure residents can communicate with Seqwater on increased mosquito presence during the construction period • Implement mosquito controls as required	• Application of the mitigation measures reduces the likelihood of the impact.	Unlikely	Major	Medium
Improved dam safety	• Construction of new dam will reduce the dam safety risks to people and properties downstream.	3	Operation	Positive	Almost Certain	Major	High	• Replacement of the dam will bring the structure in line with current safety guidelines and design standards.	• Construction of new dam.	Almost Certain	Major	High

12.7 Summary

Lake Macdonald is a focal point of the Cooroy community, providing an appealing natural environment local residents and visitors alike value. Cooroy and the other communities in the Noosa Hinterland area were established in the late 1800's following the construction of the North Coast rail line and were supported by the timber and dairy industries. While these industries have been replaced with mixed horticulture, cattle grazing and rural residential and urban land uses, the community retains a rural orientation and an appreciation of the natural environment.

Lake Macdonald is located approximately 6 km from Cooroy and its population of about 3,000 residents, which has a range of retail, educational, health and commercial services. Around the periphery of Lake Macdonald are rural residential private holdings where high value housing takes advantage of the appealing visual environment offered by the lake and surrounding countryside. Pockets of higher density urban allotments exist along Lake Macdonald Drive, which connects through to Cooroy. Downstream of the dam, Six Mile Creek meanders along the western side of the Forest Acres residential area and rural and rural residential land uses through to the township of Cooran.

The SIA has sought to identify and assess potential impacts and benefits associated with Project construction and operation in accordance with the Social Impact Assessment Guideline issued by the Queensland Department of State Development, Manufacturing, Infrastructure and Planning (2018). Matters specified in the Reference of Terms issued by the Coordinator General and where they addressed in the SIA is provided in Table 12-5.

Table 12-5: SIA Elements

ELEMENT	CONTEXT	WHERE ADDRESSED
Community and stakeholder engagement	Extensive community and stakeholder was undertaken as part of the SIA in addition to that completed for the IAR	Section 12.4
Workforce management	The 110-person (at peak) construction workforce would be sourced within the region. They would commute on daily basis via private vehicle.	Section 12.5.6 Section 12.5.2 Section 12.6
Housing and accommodation	As the workforce is sourced locally there would be minimal requirement for accommodation of construction workforce and subsequently there are no discernable effect on local housing and accommodation.	Section 12.3.1 Section 12.5.1 (Property effects) Section 12.5.5
Local business and industry procurement	The Project will provide procurement opportunities for local businesses as per Queensland Procurement Policy.	Section 12.5.5 Section 12.6
Health and community wellbeing	A broad range of potential effects on the health and wellbeing of the community are identified and assessed in the SIA.	Section 12.5.6 Section 12.6

As presented in section 12.6, a total of 31 social impacts were identified and assessed. Six impacts on property and land use were identified, all of which were negative, and all predicted to occur in the construction phase. Post mitigation, two impacts were assessed as having a high level of significance:

- Direct effects including noise, dust and vibration on residential properties on Lake Macdonald Drive located within 200 m of dam upgrade construction site
- Loss of amenity due to lake lowering and traffic and construction activities affecting enjoyment (and subsequent reduced patronage) of the Noosa Botanic Gardens.

There were five identified impacts on the way of life enjoyed by residents, all of which would occur in Local Study Area One in the construction phase of the Project. Impacts primarily related to the temporary loss of recreational and leisure opportunities, currently afforded by the lake. No impacts were assessed as retaining a high level of significance post application of mitigation measures.

Six impacts upon community cohesion and sense of place were identified. The only effect which was assessed as being highly significant was the benefit the Project would bring in terms of enabling the sustained preservation of the lake for the community to enjoy in the future. Traffic effects are identified as a key impact to be managed by the Project. Reduced safety and traffic generated noise at sensitive receptors such as the Cooroy State School were identified as impacts requiring effective mitigation throughout construction. A further community impact identified was the temporary closure of Camp Cooroora.

Four impacts were identified relating to environmental conditions, all of which occurred in the construction phase and in Local Study Area One. There is an evident high level of community environmental consciousness and key impacts raised by the community included the loss of aquatic ecology and the infestation of weeds and pest species due to the lowering of the lake.

There were five identified impacts on the local economy, three of which were positive. The Project would provide procurement opportunities for businesses in the region, directly and indirectly create employment opportunities and inject wealth into the local economy through workforce expenditure.

Five impacts relating to well-being and health were identified, one of which retained a significance rating of high post mitigation, which was the improved dam safety the Project would provide to people and properties downstream. Other impacts the community raised included the potential for increased exposure to mosquito borne diseases and diminished enjoyment of the lake and surrounding area throughout the construction period.

In conclusion, it is assessed that an overwhelming proportion of identified impacts would occur in the construction phase, accounting for over 80% of identified impacts. Furthermore, the distribution of impacts is localised with 90% of impacts occurring in Local Study Area One, 41% in Local Study Area Two, 16% in Local Study Area Three, and 9% predicted to also manifest in the regional study area. Therefore, while most of the impacts identified were negative, these would largely be localised and restricted to the construction phase of the Project. Post construction, the Project would derive overwhelmingly positive social benefits through delivering improved dam safety and enabling the preservation of the lake for the enjoyment of current and future generations.