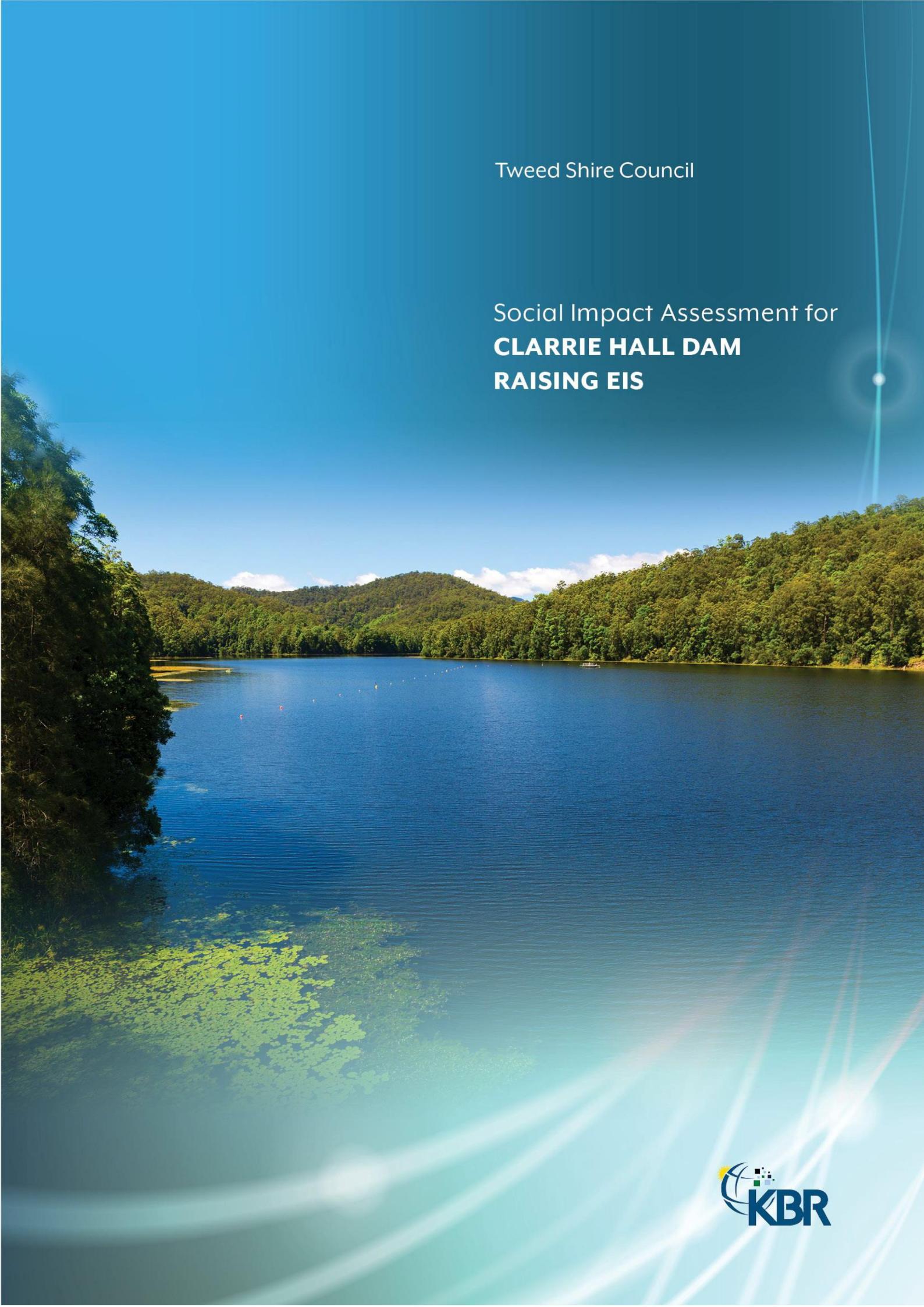


APPENDIX L

Social Impact Assessment

Tweed Shire Council

Social Impact Assessment for **CLARRIE HALL DAM RAISING EIS**



KBR

Social Impact Assessment for
CLARRIE HALL DAM RAISING EIS

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16 September 2024

SEN351-TD-EV-REP-0006 Rev 0

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Limitations Statement

The sole purpose of this report and the associated services performed by Kellogg Brown & Root Pty Ltd (KBR) is to **provide an assessment of social impacts** in accordance with the SEARs set out in the contract between KBR and **Tweed Shire Council** ('the Client'). The scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the site.

KBR derived the data in this report primarily from examination of background information and interviews with the community and stakeholders. The passage of time, manifestation of latent conditions or impacts of future events may require further exploration at the site and subsequent data analysis, and re-evaluation of the findings, observations and conclusions expressed in this report.

In preparing this report, KBR has relied upon and presumed accurate certain information (or absence thereof) provided by government officials and authorities, the Client and others identified herein. Except as otherwise stated in the report, KBR has not attempted to verify the accuracy or completeness of any such information.

No warranty or guarantee, whether express or implied, is made with respect to the data reported or to the findings, observations and conclusions expressed in this report.

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Revision History

Revision	Date	Comment	Signatures			
			Originated by	Checked by	Technical Approval	Project Approval
0	16/09/2024	Issued for Use	L. Ray	J. Ardas	K. Burton Kathryn Burton 2024.09.17 13:12:12 +10'00'	K. Burton Kathryn Burton 2024.09.17 13:12:35 +10'00'

Glossary

Term	Description
Amendment	A change in what the proponent is seeking approval for during the assessment. It requires changes to the project description in the EIS or modification report and amendments to the associated infrastructure application or modification request. Applications can only be amended with the agreement of the Planning Secretary.
Amendment report	A report prepared by the proponent to support amendments to an infrastructure application or modification request (see the State Significant Infrastructure Guidelines – Preparing an Amendment Report)
Approval authority	The approval authority for an SSI application or SSI modification request. This will be the Minister
Cumulative impacts	The combined impacts of the project on a matter with other relevant future projects (see the Department's Cumulative Impact Assessment Guidelines for State Significant Projects)
Declaration	A REAP may declare the EIS, for a State significant project are in accordance with the EP&A Regulation and the Registered Environmental Assessment Practitioner Guidelines before they are submitted to the Department of Planning, Housing and Infrastructure.
Determination	A decision by an approval authority for an SSI application to either approve the application, subject to modifications or conditions, or refuse the application.
Environmental assessment reports	Reports required to be submitted to the Department by a proponent seeking approval for an SSI application or modification request. These reports include scoping reports, EISs, submissions reports, amendment reports, preferred infrastructure reports and modification reports.
Environmental impact statement (EIS)	An environmental impact statement prepared by the proponent to support an SSI application.
Environmental planning instrument (EPI)	An environmental planning instrument (including a SEPP or Local Environmental Plan) made under part 3 of the EP&A Act
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000.
Matter	An element of the environment that may be affected by an SSI (e.g. air, amenity, biodiversity, economic, social)
Minister	The Minister for Planning and Public Spaces.
Mitigation	Actions or measures to reduce the impacts of the project
Modification report	A report prepared by the proponent to support a modification request (see the State Significant Infrastructure Guidelines – Preparing a Modification Report)
Modification request	A request seeking to modify an SSI approval under section 5.25 of the EP&A Act
Planning Secretary	The Secretary of the Department
Preferred infrastructure report	A report prepared by an SSI proponent at the request of the Planning Secretary that outlines any proposed changes to the SSI to minimise its environmental impact or to deal with any other issue raised during the assessment of the application concerned (see the State Significant Infrastructure Guidelines – Preparing a Preferred Infrastructure Report)
Project	Refers to State significant infrastructure (SSI)

Term	Description
Proponent	The proponent seeking approval for an SSI application or modification request
Proposal	A proposed project that is not yet the subject of a lodged SSI application
Refinement	A change that fits within the limits set by the project description and does not change what the proponent is seeking approval for or require an amendment to the infrastructure application for the project
Registered environmental assessment practitioner (REAP)	A person who is registered or certified under a professional scheme that is specified as a registered environmental assessment practitioner scheme in the Accredited Registered Environmental Assessment Practitioner (REAP) Schemes published on the NSW Planning Portal
Scoping	The process of identifying the matters that require further assessment in an EIS
Scoping report	A report prepared by the proponent to inform the setting of SEARs for an SSI project (see the State Significant Infrastructure Guidelines – Preparing a Scoping Report)
SEARs	The Planning Secretary's environmental assessment requirements for the preparation of an EIS for an SSI project
SEPP	State Environmental Planning Policy
SIA	Social Impact Assessment
State significant infrastructure (SSI)	Infrastructure that is declared to be State significant development under section 5.12 of the EP&A Act
Submission	A written response from an individual or organisation, which is submitted to the Department during the public exhibition of an EIS, amendment report, preferred infrastructure report or modification report for SSI.
Submissions report	A report prepared by the proponent to respond to the issues raised in submissions (see the State Significant Infrastructure Guidelines – Preparing a Submissions Report).

Executive summary

This Social Impact Assessment (SIA) was undertaken on behalf of Tweed Shire Council (Council) to assess the potential social impacts associated with Council's proposal to raise the wall of Clarrie Hall Dam by 8.5 metres (m), thereby increasing the capacity of the dam from 16,000 megalitres (ML) to approximately 42,300 ML (the Proposal).

A raised dam will provide adequate water supply to the Tweed Shire until at least 2065 to support a growing population. The study area has therefore been defined as the Tweed Shire local government area.

The construction phase of the project is expected to take about 2 years to complete and would require a peak workforce of approximately 180 people. The majority of this workforce would be housed in a temporary accommodation camp or in existing accommodation in the region.

This SIA has identified impacts that may occur to different groups within the community during construction and/or operation of the Proposal.

Methodology

This SIA has been prepared in accordance with the *Social Impact Assessment Guideline* (DPE, 2023), in support of the Environmental Impact Statement (EIS) prepared for the Proposal.

The study area relevant to the Proposal is the Tweed Shire, and an outline of the social environment of the region is detailed in section 4.1.

An initial demographic profile was developed, and the SIA study area was identified during the scoping phase, as proposed in the Scoping Report submitted in support of the State significant infrastructure application to obtain the Secretary's Environmental Assessment Requirements (SEARs), in November 2023.

A stakeholder engagement plan was developed with input from Council. The stakeholder engagement plan included the following potentially impacted (negatively or positively) stakeholders in the Tweed Shire and actions for implementing consultation:

- local community groups – including those at Crams Farm
- recreational users of the Crams Farm and Carrie Hall Dam
- local residents
- communities located along Doon Doon Creek (downstream of Clarrie Hall Dam)
- Uki and Murwillumbah residents (community information sessions are summarised and documented in Chapter 5 of the EIS)
- local businesses in the region
- vulnerable residents recently impacted by flood damages.

Social baseline

A social baseline of the Tweed Shire was established through the review of the most recent statistical data from the following sources:

- the Australian Bureau of Statistics (ABS) census database for 2021

- Tweed Shire Council website
- NSW Department of Health website.

This data was assessed to determine the following social baseline summary of the Tweed Shire including demographics proposed to be affected by the Proposal:

- The estimated population of Tweed Shire was 97,969 in 2022.
- The population is growing by an average of 680 people per year.
- The median age of the population at 47.3 is higher than the Australian median age of 38 (2021).
- In the 2021 census 4,329 people identified as Indigenous, representing 4.4% of the population.
- A higher number of properties in Tweed Shire are owned outright (41.5%) than in New South Wales (NSW) (31.5%).
- The 5.0% unemployment rate in the Tweed Shire is higher than the NSW rate of unemployment of 4.9% (2021).
- Construction is a key industry in the Tweed Shire labour force.
- The overall level of education in the Tweed Shire was lower than the average education level in NSW.

Stakeholder engagement

Council has conducted extensive community engagement over the past 10 or so years regarding water supply augmentation options and the proposed raising of Clarrie Hall Dam. Consultation conducted for the SIA includes:

- stakeholder meetings
- an online survey
- workshops.

Engagement activities undertaken as part of the SIA have been coordinated with community consultation.

Feedback received from the above activities is provided in this SIA where relevant, with further details provided in section 5 of the EIS (Community Engagement). Key engagement activities undertaken as part of the SIA were conducted on behalf of Council in 2020 and 2021. Further consultation for this SIA was conducted in 2023 and 2024. All consultation responses are documented in this SIA.

The findings of the social baseline analysis and consultation highlighted strong relationships between the community and natural environments, a strongly established sense of community and participation in volunteer organisations, and a desire by the community to secure a long-term water supply in the region. The work also identified community concern regarding potential price changes to water rates and a lack of employment and education opportunities for a younger generation leading the younger generation to leave the region.

Further consultation completed for this SIA between 2023 and 2024 identified that stakeholders at Crams Farm have concerns regarding access during construction of the new bridge. These stakeholders have an expectation that replacement services at Crams Farm such as the boat ramp and parking would be of the same or superior quality. Downstream residents have concerns regarding the potential for dam failure during construction. Residents are also concerned about the lack of emergency response facilities such as ambulances. As the major floods of 2022 have caused numerous landslips and increased the number of trucks on the road, people surveyed thought that additional trucks into and out of the site would impact the village feel of Uki.

Assessment of Impacts

Potential impacts identified through the social baseline study and stakeholder consultation were included in the social impact risk assessment. The majority of identified impacts would be realised through the construction phase of the Proposal, which is forecast to take 2 years.

A summary of key impacts (negative and positive) of the Proposal prior to mitigation include:

- establishing a secure water resource in the region (positive)
- opportunities to improve the accessibility and facilities at Crams Farm and Clarrie Hall Dam (positive)
- additional trade and economic opportunities in the region (positive)
- increased traffic during construction (negative)
- changes to amenity and access at Crams Farm and Clarrie Hall Dam (negative)
- increased demand for housing and community services (negative)
- decreased access to Crams Farm and surrounding properties (negative)
- cultural and heritage impacts of the Proposal during construction and operation through loss of cultural sites (negative)

Key social impacts (positive and negative) and residual risk ratings after mitigation measures are applied, are summarised in Table 6-1 and Table 6-2.

Conclusion

The SIA demonstrates that the Proposal would have mostly positive impacts on stakeholders; however, some negative impacts are predicted to occur. These include changes to accessibility, amenity and the community. These are most relevant for stakeholders located near the construction site and access roads and who access the sites of Clarrie Hall Dam and Crams Farm.

Stakeholder engagement generally demonstrated public support for the Proposal. Stakeholder engagement also highlighted a key relationship between the local community and the natural environment. Stakeholders communicated a strong connection with the recreational areas at Crams Farm and Clarrie Hall Dam.

Mitigation measures included in this assessment reduce the risk of negative impacts from the Proposal to acceptable levels.

The Tweed Shire is experiencing strong population growth, which is forecast to continue and is leading to increases in both rental and property prices. As such, the SIA supports Council's Proposal to provide a secure water resource that can support a growing population.

If the Proposal proceeds, a Social Impact Management Plan (SIMP) is to be prepared for construction and operation of the Proposal. The SIMP will:

- enhance and refine mitigation, monitoring and management of social impacts over the life of the Proposal and explain how unanticipated impacts would be addressed.
- set out how the community can provide feedback as part of adaptive management.
- describe requirements of performance-based and prescriptive conditions.
- set out elements, indicators, baseline values, frequencies, triggers, stakeholders and responses.

The SIMP will also provide details on further work required to confirm social outcomes as identified in section 6.

Contents

Section		Page
1	**INTRODUCTION, PROJECT DESCRIPTION AND CONTEXT**	**1**
1.1	Context	1
1.2	Project description	3
1.3	Location	5
1.4	Declaration	9
2	**METHODOLOGY**	**10**
2.1	Overview	11
3	**STAKEHOLDER ENGAGEMENT**	**16**
3.1	Engagement activities	16
3.2	Community consultation	21
3.3	Aboriginal consultation	22
4	**SOCIAL BASELINE**	**23**
4.1	Social locality	23
4.2	Population	25
4.3	Income	28
4.4	Housing	29
4.5	Short-term accomodation	32
4.6	Education	32
4.7	Employment by category	32
4.8	Unemployment	33
4.9	Place of birth	34
4.10	Local government	34
4.11	Community health and wellbeing	34
4.12	Crime statistics	34
4.13	Flood history	35
4.14	Key locations	35
5	**IMPACT ASSESSMENT AND PREDICTION**	**36**
5.1	Population and demographic	36
5.2	Housing impacts	36
5.3	Labour market	37
5.4	Property	37
5.5	Community services and facilities	38
5.6	Local business and industry procurement	38
5.7	Crime	38
5.8	Unmitigated social impacts	38

6	**SOCIAL IMPACT ENHANCEMENT, MITIGATION AND RESIDUAL IMPACTS**	**47**
6.1	Social impacts after mitigation	47
7	**MONITORING AND MANAGEMENT PLAN**	**56**
7.1	Social impact management plan outline	56
8	**CONCLUSION**	**58**
9	**REFERENCES**	**59**

List of Tables

Table 1-1 SEARs for Social, land use and property 1
Table 1-2 Social Impact Assessment Guideline review questions 2
Table 1-3 Summary of the Clarrie Hall Dam Raising Proposal 4
Table 2-1 SIA guideline principles 10
Table 2-2 Methodology for social impact assessment 11
Table 2-3 Stakeholder engagement 13
Table 3-1 Stakeholders interviewed to date 17
Table 3-2 Stakeholders contacted with no response 20
Table 4-1 Yearly population within the Tweed Shire (Tweed LGA) and year-to-year change in population 25
Table 4-2 Population of townships within the Tweed Shire, 2021 25
Table 4-3 Tweed LGA weekly income breakdown, 2021 28
Table 4-4 Median weekly income in Tweed LGA and New South Wales 29
Table 4-5 Tweed Shire and New South Wales housing types 2021 29
Table 4-6 Tweed Shire and New South Wales median mortgage and rent per month, 2021 30
Table 4-7 Tweed Shire and New South Wales education levels, 2021 32
Table 4-8 Industry sector of employment within Tweed Shire and New South Wales, 2021 33
Table 4-9 Place of birth of Tweed Shire residents, 2021 34
Table 5-1 Summary of unmitigated social impacts 39
Table 5-2 Likelihood of social impacts 43
Table 5-3 Magnitude or consequence levels for social impacts 43
Table 5-4 Risk rating matrix 43
Table 5-5 Risk significance of each positive social impact based on likelihood and consequence 43
Table 5-6 Risk significance of each negative social impact based on likelihood and consequence 44
Table 6-1 Summary of positive social impacts and their residual risk ratings after applying mitigation measures 48
Table 6-2 Summary of negative social impacts, mitigation measures and their residual risk ratings after applying mitigation measures 49

List of Figures

Figure 1-1 Proposal overview – northern section 6
Figure 1-2 Proposal overview -- middle section 7
Figure 1-3 Proposal overview – southern section 8
Figure 4-1 Social locality – Tweed Shire 24
Figure 4-2 Population heat map of Tweed Shire showing key communities around Clarrie Hall Dam 26
Figure 4-3 Year-to-year population forecast within the Tweed Shire 27
Figure 4-4 Median age across Tweed Shire and Australia, 2016 and 2021 27
Figure 4-5 Median age in Tweed Shire townships, 2021 28
Figure 4-6 Percentage of tenancy type within the Tweed Shire, Uki, Murwillumbah and New South Wales, 2021 30
Figure 4-7 Median monthly mortgage repayment within the Tweed Shire, 2011 to 2021 31
Figure 4-8 Median rent within the Tweed Shire, 2011 to 2021 31
Figure 4-9 House price trends in Murwillumbah and Uki, 2018 to 2023 32
Figure 4-10 Crime rate per 100,000 people within the Tweed Shire 35

1 Introduction, project description and context

Tweed Shire Council (Council) proposes to raise the wall of Clarrie Hall Dam by 8.5 metres (m) to a height of 70 m Australian Height Datum (AHD) (RL 70 m), thereby increasing the capacity of the dam from 16,000 megalitres (ML) to approximately 42,300 ML (the Proposal).

The proposed raising of Clarrie Hall Dam is classified as State significant infrastructure (SSI-65020460) and is subject to approval by the NSW Minister for Planning and Public Spaces under Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

This Social Impact Assessment (SIA) has been prepared to inform the Environmental Impact Statement (EIS) for the Proposal.

The development of this SIA involves the following 3 phases:

- The first phase involves SIA scoping and initial assessment and is documented in the Scoping Report submitted with the application for Secretary's Environmental Assessment Requirements (SEARs). This phase has informed the required scale of this SIA report, undertaken in the second phase.
- The second phase involves preparation of this SIA including assessment of identified issues, development and finalising responses and management measures requiring documentation in a Social Impact Management Plan. The SIA report forms a component of the EIS.
- The third phase occurs post-approval. It verifies and refines how social impacts are managed, depending on the conditions of consent or approval.

This SIA report documents the second phase of assessment.

1.1 CONTEXT

The SIA has been prepared in accordance with the SEARs (SSI-65020460) for the proposed raising of Clarrie Hall Dam as shown in Table 1-1.

Table 1-1 SEARs for Social, land use and property

Relevant Key Issue Requirement/s	Where addressed
• Provide a Social Impact Assessment prepared in accordance with the Social Impact Assessment Guideline for State Significant Projects	This Social Impact Assessment has been prepared in accordance with the Social Impact Assessment Guideline (DPE, 2023). See Table 1-2.
• The Proponent must undertake a comprehensive social impact assessment, supported and informed by a comprehensive, inclusive, and participatory program of community engagement, actively seeking input from the affected community and other stakeholders	Section 3
• The Proponent must assess impacts from construction and operation on potentially affected properties, businesses, recreational users and land and water users (for example, agricultural land uses), including property acquisitions/ adjustments, access, amenity and relevant statutory rights.	Section 5 and section 6

Table 1-2 Social Impact Assessment Guideline review questions

Social Impact Assessment Guidelines review questions	Response
General	
1. Does the lead author meet the qualification and experience requirements?	Yes, see Section 1.4
2. Has the lead author provided a signed declaration?	Yes, see Declaration at Section 1.4
3. Would a reasonable person judge the SIA report to be impartial, transparent and suitably rigorous given the nature of the project?	Yes
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?	Yes, see Sections 3, 4 and 5
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?	Yes, see Sections 4 and 4.14
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?	Yes, see Sections 4 and 5
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?	Yes, see Section 4
8. Does the social baseline study demonstrate social-science research methods and explain any significant methodological or data limitations?	Yes, see Section 2.1.2
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?	Yes, see Sections 2, 4 and 5
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?	Yes, see Sections 5 and 6
11. Does the SIA report describe how the preliminary analysis influenced project design and EIS engagement strategy?	Yes, see Sections 4, 5, 6 and 7 Also see Chapter 5 of the EIS.
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?	Yes, see Section 3
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?	Yes, see Sections 4, 5, 6 and 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?	Yes, see Section 6.1
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?	Yes, see Section 5.8

Social Impact Assessment Guidelines review questions	Response
16. Does the SIA report identify its assumptions, and include sensitivity analysis and alternative scenarios? (including 'worst-case' and 'no project' scenarios where relevant)	Yes, see Sections 1.5, 4 and 5
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?	Yes, see Section 5
18. Are the evaluations of significance disaggregated to consider the likely different experiences for different people or groups, especially vulnerable groups?	Yes, see Section 5
Responses, monitoring and management	
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?	Yes, see Section 6.1
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?	Yes, see Section 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?	Yes, see Section 7

This SIA aims to predict and evaluate likely social impacts arising from the proposed raising of Clarrie Hall Dam and provide responses to the predicted impacts through:

- a social baseline prepared by reviewing socioeconomic data for the Tweed Shire
- consultation with impacted community groups and individuals
- identification of potential impacts and opportunities and pre-mitigation risk assessment
- an assessment of how potential impacts could be avoided and/or mitigated
- a risk assessment following the application of proposed mitigation
- management measures for residual impacts.

1.2 PROJECT DESCRIPTION

Clarrie Hall Dam was constructed in 1983 by the NSW Department of Public Works and is owned and operated by Tweed Shire Council (Council) for the primary purpose of providing a drinking water supply to the Tweed Shire region. There is a requirement to augment the Tweed Shire district water supply by 2028. This is because of an increasing demand for water as a result of projected population growth, and the increasing uncertainty of water supply yield due to climate change.

In 2018, a detailed concept design was prepared by NSW Public Works Advisory (PWA). The options assessment and concept design for the raised dam and its components were based on hydrological studies, geotechnical investigations, and seismic and structural assessments. The preferred option for the dam raising incorporates increasing the height of the existing concrete faced rockfill embankment and constructing a new concrete lined spillway higher up in the left abutment. The existing intake tower and access bridge would also be raised.

The optimum size of the proposed raised Clarrie Hall Dam is 42,300 ML, based on raising the dam wall height by 8.5 m to a height of RL 70 m AHD. The raised dam would, as a result, provide

adequate water supply to the Tweed Shire until at least 2065. Raising the wall height further was not considered feasible due to topographical constraints in the catchment.

A summary of the Proposal is provided in Table 1-3 and an overview is provided in Figure 1-1, Figure 1-2 and Figure 1-3.

Table 1-3 Summary of the Clarrie Hall Dam Raising Proposal

Proposal element	Summary of the Proposal
Operation	
Description	Raising the embankment wall of Clarrie Hall Dam by 8.5 m
Operational footprint	Approximately 209 ha for the proposed FSL Approximately 248 ha for the area between the proposed FSL and the PMF
Dam wall infrastructure	• Increasing the base width of the valley-side abutment and raising the crest of the concrete faced rockfill embankment to RL 70 m • Constructing a new concrete lined spillway higher on the west abutment • Extending the upstream concrete face to the new crest height • Raising the intake tower and access bridge • Constructing a new section of the Clarrie Hall Dam Road to provide access to the east abutment of the dam wall • Establishing new recreation and operational facilities including an amenities block, public shelters, viewing areas, interpretation signage, paths, car parks, landscaping, security fences, lighting, monitoring equipment and a boat ramp
Ancillary works	• Upgrading the intersection of Clarrie Hall Dam Road and Kyogle Road • Replacing McCabes Bridge over Doon Doon Creek • Realigning an approximately 1,000 metre section of Commissioners Creek Road • Removing or reconstructing impacted infrastructure and facilities at Crams Farm • Realigning overhead power lines and Telstra assets
Construction	
Construction impact area	Approximately 49.6 ha, consisting of 26.2 ha at the dam wall, 6.6 ha of construction compound and workforce accommodation areas and 16.8 ha of ancillary sites for road realignments and relocating overhead power lines. The removal of the existing overhead power line is not included in the impact area.
Workforce	Estimated peak of 180 persons at the main dam wall site
Cut / fill	Approximately 100,000 m^3 deficit of fill material will be derived from the quarry located 300 m from the existing dam
Ancillary works	• Constructing access roads to construction areas and establishing the construction site • Re-establishing the quarry used to construct the existing dam • Establishing a concrete batching plant • Establishing construction compounds including site offices and areas for materials stockpiling • Establishing workforce accommodation site compound
Dewatering	Lowering dam storage by approximately 300 mm below FSL during construction
Property	Permanent and temporary property adjustments and property access refinements
Capital investment value	Approximately $304 million

1.3 LOCATION

Clarrie Hall Dam is located on Doon Doon Creek, 15 kilometres (km) south-west of Murwillumbah in the Tweed Shire local government area (LGA) in New South Wales (NSW). The dam has a catchment area of approximately 60 square kilometres (km^2) and a current storage capacity of 16,000 ML. The Tweed District water supply is currently a run-of-river supply augmented by releases from Clarrie Hall Dam down Doon Doon Creek via a shuttered intake in the intake tower into a pipe/outlet tunnel that runs under the dam wall to a valve chamber (outlet works), where there are a number of valves through which the water goes through before it discharges into Doon Doon Creek to the Tweed River.

The study area for the purpose of this SIA is discussed in section 4.1.

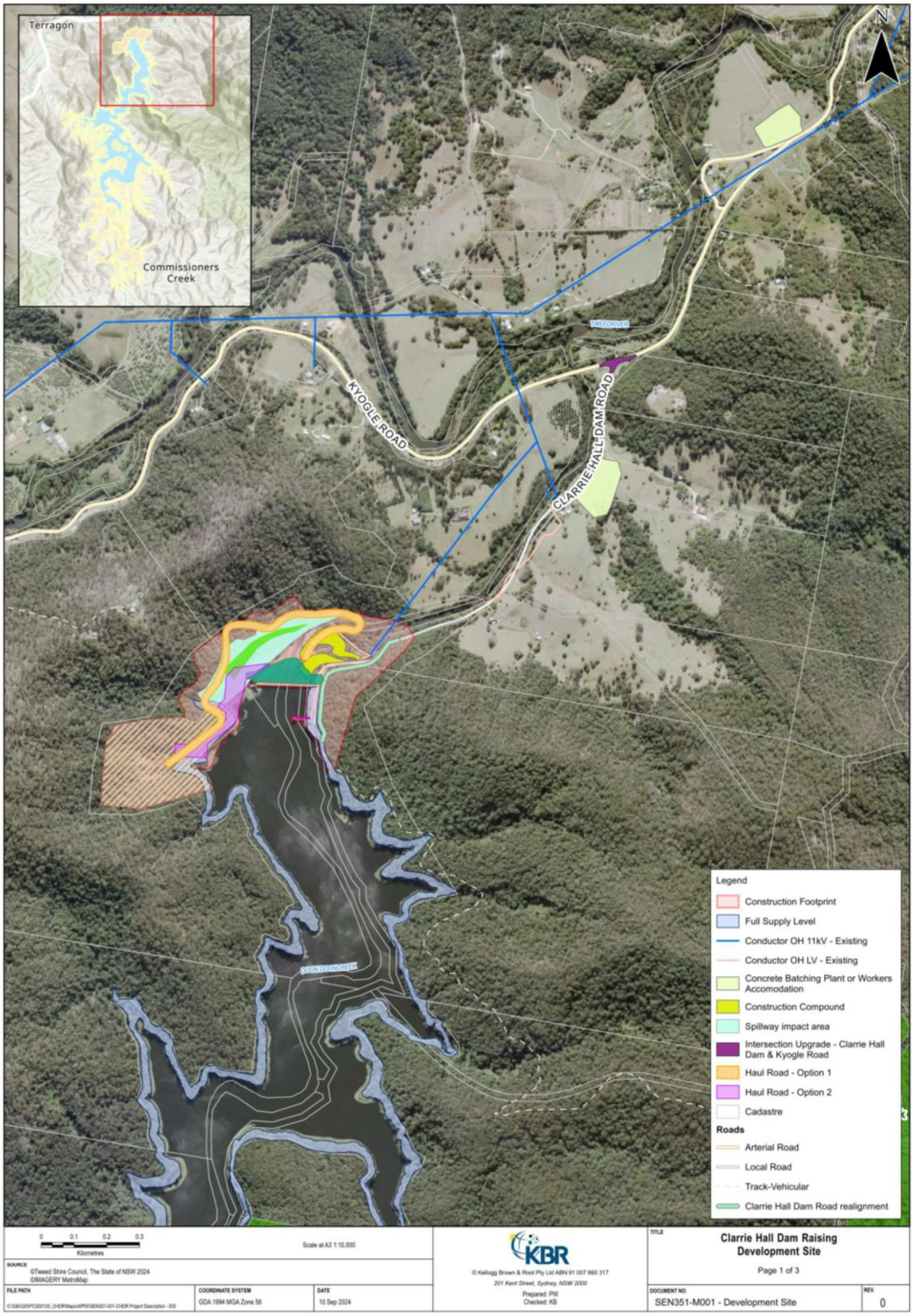


Figure 1-1 Proposal overview – northern section

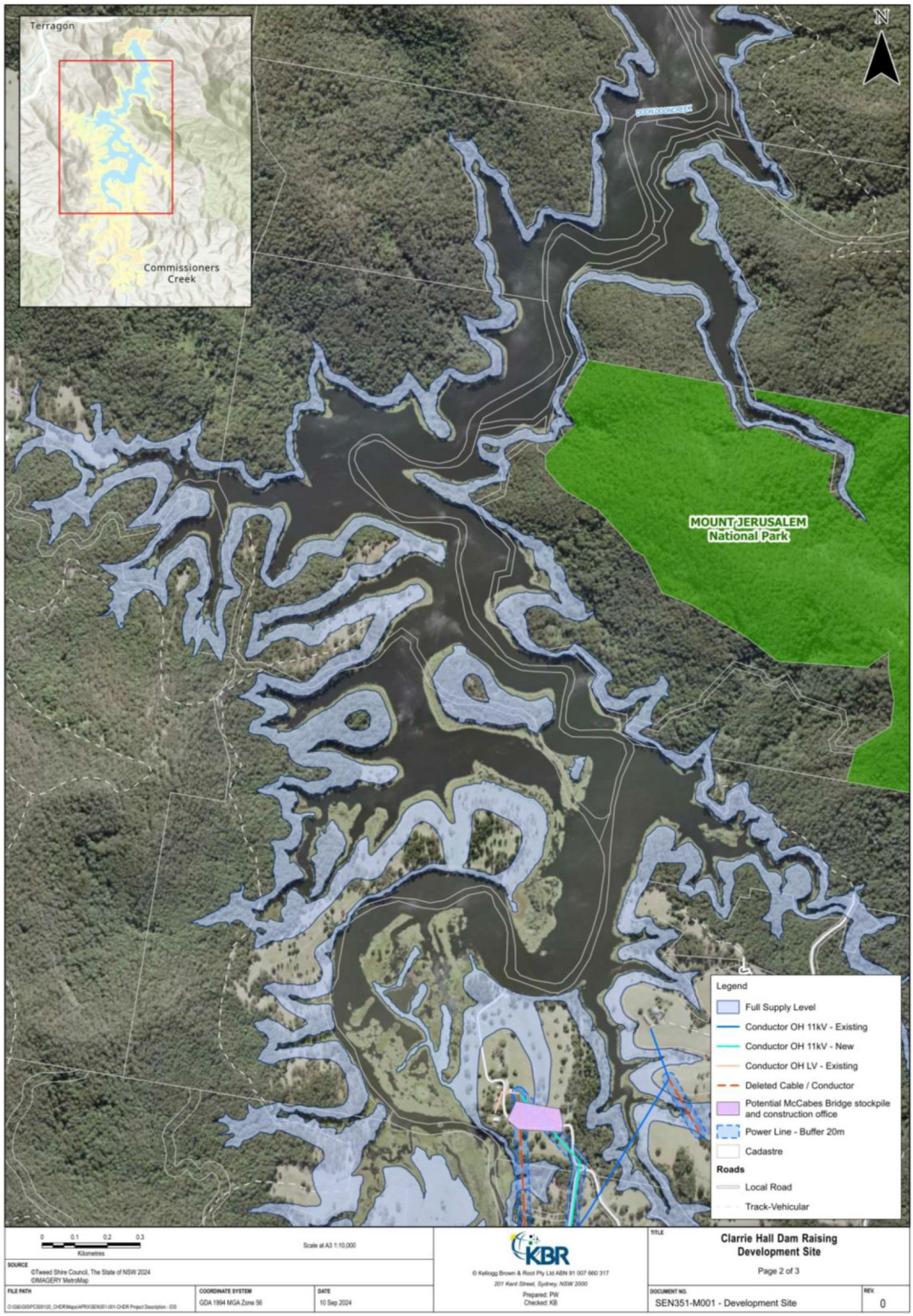


Figure 1-2 Proposal overview -- middle section

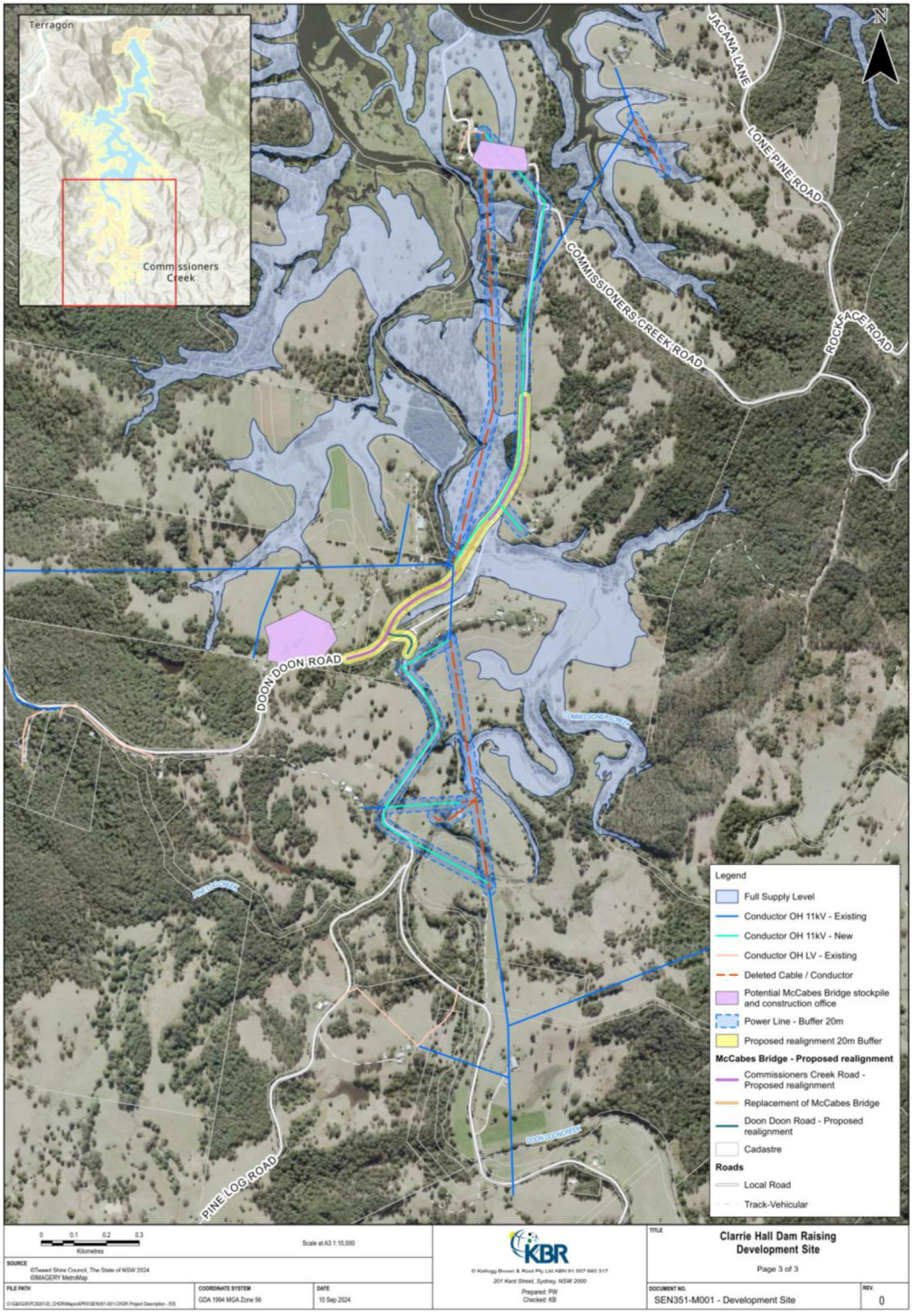


Figure 1-3 Proposal overview – southern section

1.4 DECLARATION

This report has been completed by the following suitably qualified and experienced co-author and lead author, consistent with the SIA Guideline (DPE, 2023) requirements. All contributors hold appropriate qualifications and have relevant experience to carry out the SIA for this project.

Dr Volders (Co-author) holds appropriate qualifications and has the relevant experience to carry out the SIA for this EIS as follows:

- Doctor of Philosophy (Environmental Economics), School of Geography and Environmental Studies, University of Tasmania
- Master of Arts (Public Policy – Regional Sustainable Development), Deakin University
- Bachelor of Arts (Social Science), Deakin University.

Adrian is a full member of the Environment Institute of Australia and New Zealand (EIANZ).

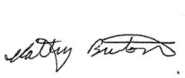
Kathryn Burton (Lead author) holds appropriate qualifications and has the relevant experience to carry out the SIA for this EIS as follows:

- Master of Environmental Law, University of Sydney
- Master of Science (Environmental Toxicology), University of Technology, Sydney
- Bachelor of Science (Environmental Biology), University of Technology, Sydney
- Kathryn is a full member of the Environment Institute of Australia and New Zealand (EIANZ).

The author(s) declares that this SIA report:

- was completed in July 2024
- has been prepared in accordance with the EIS process under the *Environmental Planning and Assessment Act 1979* (EP&A Act)
- has been prepared in accordance with the SIA Guideline (DPE, 2023)
- contains all reasonably available project information relevant to the SIA as far as KBR is aware and contains information that is neither false nor misleading.

Signature:



Kathryn Burton
2024.09.17
13:13:33 +10'00'

2 Methodology

The SIA methodology was prepared in accordance with the principles in the SIA Guideline (DPE, 2023), as summarised in Table 2-1.

Table 2-1 SIA guideline principles

Principles	Description	SIA response
Action-orientated	The SIA delivers outcomes that are practical and effective.	Mitigation / enhancement measures – section 6
Adaptive	The SIA establishes systems to respond to new information and support continuous improvement.	Stakeholder engagement to inform the SIA and EIS – section 3
Culturally responsive	The SIA considers how different social groups would experience social impacts differently.	Analysis of social baseline and identification of different stakeholder group impacts – section 3
Distributive equity	The SIA considers how social impacts are felt across vulnerable groups and between current and future generations.	Consideration of local and regional impact over time in identified impacts – sections 5 and 6
Impartial	The SIA is undertaken in a fair, unbiased manner and follows relevant ethical standards.	Commitment to objective and ethical assessment – section 1.4
Inclusive	The SIA seeks to hear, understand, respect and document the perspective of all likely affected people. Uses respectful, meaningful and effective engagement activities.	Stakeholder engagement to inform and shape the SIA and EIS – section 3
Integrated	The SIA uses and references relevant information and analysis from other assessments to avoid duplication. It supports the effective integration of social, economic, and environmental considerations in decision- making.	Reference to other technical documents in the delivery of the SIA – sections 5, 6 and 7
Life-cycle focus	The SIA seeks to understand likely impacts at all project stages from pre-construction to operation.	Assessment includes a focus on construction and operations – sections 5 and 6
Material	The SIA identifies which likely social impacts matter the most for people and pose the greatest risk / opportunity to those expected to be affected.	SIA scoping and stakeholder engagement – sections 3 and 4
Precautionary	The SIA avoids using any limits on full scientific certainty as a reason for postponing measures to prevent environmental degradation.	Impact assessment to consider any residual risks – section 6
Proportionate	The SIA ensures the scope and scale corresponds to the scope and scale of the likely social impacts.	SIA scoping to define potential material impacts – phase 1
Rigorous	The SIA uses appropriate, accepted social science methods and robust evidence from authoritative and trustworthy sources.	Methods and evidence sources are described and justified – section 2
Transparent	The SIA explains, justifies, and makes available information, methods, and assumptions so that people can see how their input is considered.	Stakeholder inputs are documented and references to relevant assessment sections are drawn – sections 3 to 7

2.1 OVERVIEW

The steps in the methodology used to conduct the SIA are shown in Table 2-2.

Table 2-2 Methodology for social impact assessment

Step 1: Identify impacts	Step 2: Evaluate impacts	Step 3: Post- approval
• Document project components • Identify stakeholders • Understand the social baseline and context • Identify and describe impacts • Evaluate, draw attention to and prioritise the social impacts that are important to people	• Assess the likelihood and consequence of impacts on the social baseline • Consider and document mitigations • Document opportunities to provide positive impact • Describe impacts after mitigation • Assess the likelihood and consequence of impacts after mitigation	• Assess how social impacts are managed • Monitor and manage social impacts after approval

Details of the steps shown in Table 2-2 are provided below.

2.1.1 Identification of stakeholders

An initial demographic profile was developed, and the SIA study area was identified during the scoping phase (phase 1) and proposed in the Scoping Report submitted in in November 2023 in support of the State significant infrastructure application to obtain SEARs.

The study area relevant to the Proposal is the Tweed Shire. An outline of the social environment of the region is detailed in section 4.1.

A stakeholder engagement plan that identified different stakeholders within the community was developed with input from Council. The stakeholder engagement plan included the following potentially impacted (negatively or positively) stakeholders in the Tweed Shire and actions for implementing consultation:

- local community groups – including those at Crams Farm
- recreational users of the Crams Farm and Carrie Hall Dam
- local residents
- communities located along Doon Doon Creek (downstream of Clarrie Hall Dam)
- Uki and Murwillumbah residents – community information sessions are summarised below and are documented in Chapter 5 of the EIS
- local businesses in the region
- vulnerable residents recently impacted by flood
- Traditional Owners – to identify the cultural and spiritual connection to the Proposal site and land, significant additional consultation has been undertaken with local registered Aboriginal parties – the outcomes of which are summarised below and detailed in the Aboriginal Cultural Heritage Assessment for the EIS.

2.1.2 Social baseline study

The social baseline describes the social context of the Tweed Shire including townships located in proximity to Proposal (Doon Doon, Uki and Murwillumbah). It documents the existing social environment, conditions and trends relevant to the impacts identified.

The social baseline is a benchmark against which direct, indirect and cumulative impacts can be predicted and analysed.

The social baseline was established through the review of the most recent statistical data from the following sources:

- the Australian Bureau of Statistics (ABS) census database for 2021
- Draft Clarrie Hall Dam Social Impact Assessment (Coffey Services, 2021)
- Tweed Shire Council
- NSW Department of Health website.

Data Limitations

The social baseline was prepared using the most recent census data available from the 2021 Australian Bureau of Statistics census. This secondary data may potentially be dated and may not reflect the current community social and economic conditions.

Primary data presented from the SIA engagement actives is based a combination of previous engagement conducted by Coffey (2021) and further engagement conducted by KBR. The data obtained is based on the interviewed community member's knowledge, beliefs and their willingness to participate and share data openly.

The data collected through engagement activities may not be representative of all community members in the SIA study area.

KBR has a moderate to high level of confidence in the identification and assessment of social impacts related to the Proposal based on the data collected through engagement activities and desktop review.

2.1.3 Community engagement

Community engagement was conducted in accordance with Appendix A of the SIA Guideline (DPE,2023). Community engagement aimed to include people from all parts of the community, from grassroots to leadership levels, and from informal, community-based organisations to formal institutions. This was in addition to previous engagement activities undertaken by Coffey Services (2021) and community and stakeholder engagement detailed in Chapter 5 of the EIS.

Engagement

Each stakeholder identified in the stakeholder engagement plan was emailed a request to be part of the SIA engagement. Where responses were not received from stakeholders, at least one phone call was made to follow up the request. Stakeholders and consultation conducted, either via telephone or in person for the EIS and SIA, are provided in section 3.

A summary of stakeholder engagement and responses is provided in section 3.

Table 2-3 Stakeholder engagement

Consultation forum	Stakeholders
Residents and businesses, particularly those close to the project location and in nearby localities, or any other potential users of the project	• Crams Farm recreation site managers • Doon Doon Hall Committee • Local businesses in Uki
	Community information sessions: • attendees of sessions held in Murwillumbah and Uki
	• Landowners adjacent to the dam and surrounding areas that will be impacted during construction and / or operation have been consulted.
Aboriginal people and groups, especially those with a cultural connection to the project location, and including traditional owners or custodians who can speak for Country, native title holders or registered native title claimants and relevant Local Aboriginal Land Council/s	• Consultation with Aboriginal people and groups has been conducted since 2017 with further site visits, meetings and cultural values mapping conducted in 2023 and 2024. Ongoing consultation is being conducted and is documented in the Aboriginal Cultural Heritage Assessment Report prepared for the EIS (EIS section 6.5).
Industry, business, cultural and environmental organisations, advocacy groups and peak bodies	• Uki Historical Society • Tweed Residents and Ratepayers Association • Kunghar Regional Fire Brigade • Uki Fire Brigade • Murwillumbah Business Chamber • Environment groups (Friends of the Koala and Tweed Valley Wildlife Carers) • Uki Residents Association • Casuarina and Seaside Salt Residential Association.
Public and private service and infrastructure providers and regulatory agencies (especially local, State and Commonwealth government-funded education, health, community, emergency and social services)	• Power utility service providers have been consulted regarding the relocation of powerlines and to determine the capacity during construction • Education services (Uki Public School, Aetomah School, Murwillumbah TAFE and Murwillumbah High School) • Health, emergency and social services (Police, SES, Murwillumbah Hospital and Services Murwillumbah) • State and Commonwealth Government agencies have been consulted extensively and a summary is provided in Chapter 5 of the EIS, with specific comments addressed in Chapter 6 of the EIS • Tweed Shire Council.
Elected representatives and other community leaders.	• Council has consulted with elected representatives from local and State governments.

Online survey

Information on stakeholder views regarding the Proposal was collected through an online community survey conducted by Council. The survey was available on the Tweed Council 'Your Say Tweed' website (www.yoursayweed.com.au) for anyone to complete between 17 February and 18 March 2021. The survey was advertised through the local newspaper (Tweed Link), media releases, and via social media posts on Facebook.

The survey covered a range of topics, including four questions designed to provide information for the SIA study:

- What do you value about living in the community (Uki, Murwillumbah, the Tweed Shire)? (a list of previously identified social values was provided and an option for 'other').
- Do you think the proposed project will impact the values you have identified or present any opportunities to enhance those values? Please explain your responses.
- Do you have any concerns about the proposed project? Please explain what these are and, if you like, why you hold these concerns.
- Can you see any opportunities during construction or operation of the project that could benefit the community such as local employment opportunities. Please provide examples of these opportunities.

Sixty-four people responded to the survey.

2.1.4 Social impact identification

The assessment of social impacts was conducted based on the social baseline and consultation, using the categories of likely social impacts provided in the SIA Guideline (DPE, 2023) as follows:

- **way of life:** how people live, work play and interact
- **community:** the community's composition, cohesion and character, how the community functions, resilience, and people's sense of place
- **accessibility:** how infrastructure provided by public, private or not-for-profit organisations, including services and facilities, is accessed and used
- **culture:** shared beliefs, customs, values and stories, and connection to Country, land, places, waterways and buildings, both Aboriginal and non-Aboriginal
- **health and wellbeing:** physical and mental health
- **surroundings:** access to and use of ecosystem, public safety and security, access to and use of natural and built environment, aesthetic value and/or amenity
- **livelihoods:** how people sustain themselves through employment or business, their capacity to do so, and whether disadvantage is experienced
- **decision-making systems:** the extent to which the community can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

Numerous technical studies have been conducted and incorporated into the EIS. These include:

- terrestrial biodiversity
- aquatic ecology
- Aboriginal heritage
- historic heritage
- hydrology and water quality
- flooding
- climate change
- air quality
- noise and vibration

- traffic and transport
- bushfire.

The results of these studies have been included in this SIA, where relevant.

2.1.5 Social risk assessment

An evaluation of the significance of each potential social impact was conducted without mitigation or enhancement for both negative and positive impacts. The risk assessment was conducted using the likelihood, magnitude and impact significant matrix provided in section 5.10.

2.1.6 Responses to social impacts

Social impact responses have been developed in this assessment to be both effective and easy to implement to increase the likelihood of beneficial community outcomes.

Responses to negative social impacts might include adapting some aspects of project design and/or changing elements of the project work program. Considerations might include designing for gender equity among the project workforce or ensuring it represents local cultural or ethnic groups. Other responses might include adaptively managing traffic, or protecting valued view lines, public spaces, cultural assets or local character.

Responses to positive impacts have considered benefits to the community.

Responses to both positive and negative social impacts are discussed in section 6.

2.1.7 Monitoring and management

A preliminary plan for monitoring and adaptively managing social impacts has been documented in section 7. If the Proposal is approved, conditions of consent will be required to be included in the plan.

3 Stakeholder engagement

This chapter summarises the findings from community engagement activities undertaken in relation to the Proposal.

3.1 ENGAGEMENT ACTIVITIES

Council has conducted extensive community engagement over the past 10 years regarding water supply augmentation options and the proposed raising of Clarrie Hall Dam.

As discussed in the previous section, consultation conducted for the SIA includes:

- stakeholder interviews
- an online survey
- workshops.

Engagement activities undertaken as part of the SIA have been coordinated with the following community consultation activities:

- Your Say Tweed Clarrie Hall Dam Raising web page
- newsletter distributed by post and available on the web page
- frequently asked questions available on the web page
- meetings and correspondence with impacted landowners
- community information sessions.

Feedback received from the above activities is provided in this SIA where relevant, with further details provided in section 5 of the EIS (Community Engagement).

3.1.1 Stakeholder interviews

Key engagement activities undertaken as part of the SIA have been conducted to build upon previous consultation completed by Coffey Services (Draft Clarrie Hall Dam Raising SIA 2021) in 2020 and 2021.

Additional interviews were conducted by KBR with local community groups and key stakeholders in 2023 and 2024. This involved discussions about the values, vulnerabilities and strengths of the local community as well as the perceived impacts and benefits that would stem from the Proposal. A workshop was run with Council that identified the vulnerable and at-risk groups within the local communities.

Table 3-1 outlines the stakeholders interviewed for the SIA.

Table 3-1 Stakeholders interviewed to date

Stakeholder	Timing	Details	Comments
Tweed District Residents and Ratepayers Association	17 September 2020 21 February 2024	Approximately 10 to 15 members covering locations across the Shire	The Association strongly supports the Clarrie Hall Dam raising. The Proposal is viewed as critical to future water supply in the Tweed Shire. The Association recognises that there will be some environmental and vegetation impacts and that recreation facilities must be provided and improved.
Local residents, Uki	Ongoing	Located in proximity to the Proposal	Various comments ranging from support for the Proposal to preference for other options. Refer to Chapter 5 of the EIS.
Tweed Shire Council	24 September 2020	Representatives from the Sports and Recreation Department	Reponses for potential options for recreational uses provided in section 6.
	Workshop held 30 January 2024	Council supports vulnerable and at-risk groups within the local community and staff responsible for the following were consulted to discuss resilience: • community disaster resilience • community development inclusion • community wellbeing • Aboriginal Land Council and Traditional Owner liaison	Council wants to see opportunities for vulnerable and local people provided. This includes improved accessibility at recreation facilities and employment opportunities for First Nations people. Environmental impacts top every Council survey of concerns.
Tweed Tourism Company	24 September 2020	Official tourism development and destination marketing agency for the Tweed Shire	Provided in summary in section 3.1.2
Tweed Landcare	25 September 2020	Tweed-focused community-run environmental organisation that provides information, training, project coordination, advocacy and representation for members, local groups, landholders and the community	Provided in summary in section 3.1.2
Real estate agent, Murwillumbah	30 September 2020	Rural real estate agent based in Murwillumbah and sponsor of local events and organisations	Provided in summary in section 3.1.2
Tweed Holiday Parks		Tweed Holiday Parks manages 7 holiday parks on the Tweed coast that offer various forms of accommodation	Provided in summary in section 3.1.2

Stakeholder	Timing	Details	Comments
Uki Village and District Residents Association	1 October 2020	The Association has 12 members and engages with the community on social issues in various forms, including through the Uki News Publication (6 issues per year), holding a market stall, and other initiatives	Provided in summary in section 3.1.2
NSW Public Works Advisory, Engineer		PWA provides expert advice, planning, delivery and support services to local and state government agencies on critical infrastructure developments	Provided in summary in section 3.1.2
Tweed Shire Parks and Active Communities	13 October 2020	This unit of the Council manages several sporting grounds and recreation facilities in the Shire	Provided in summary in section 3.1.2
Tweed Shire Community Services	12 November 2020	This Council team manages programs to support residents in the disability and aged care sphere, including administering bookings of local facilities such as Doon Doon Hall	Provided in summary in section 3.1.2
• Crams Farm Recreation Site Manager • Doon Doon Hall Committee • Kunghar Regional Fire Brigade • Uki Historical Society • Local Uki Businesses	7 December 2023	Upstream and downstream groups who would be potentially impacted by the Proposal	Existing access to Commissioner Creek Road will be required during bridge works. Crams Farm is an important recreational area. Local business knowledge of the project was limited, with the community meeting key to raising the profile of the project.
Murwillumbah and Uki communities	6 and 7 February 2024	Community information sessions were held for the public in Uki and Murwillumbah to answer questions regarding the proposal and EIS process	Various comments ranging from support for the Proposal to preference for other options. Refer to Chapter 5 of the EIS.
Tweed Valley Wildlife Carers	8 July 2024	The Tweed Wildlife Carers respond to and receive approximately 5000–6000 calls a year regarding injured or distressed fauna	The Proposal is a better option than building a new dam. Environmental impacts are expected during construction.

Stakeholder	Timing	Details	Comments
Murwillumbah Business Chamber	11 July 2024	The Murwillumbah Business Chamber provides support and guidance for small business in the Tweed Shire. This supports a stronger business community.	Business in the Tweed Shire is generally hard to establish. Local procurement and expenditure could benefit the local community. Businesses in the Tweed can benefit from the Proposal.

The stakeholders shown in Table 3-2 were contacted but did not respond.

Table 3-2 Stakeholders contacted with no response

Stakeholder	Date	Details
Uki Fire Brigade	29 November 2023	Initial contact followed up 2 July 2024. No response.
Aetomah School	2 February 2024	Initial contact followed up 2 July 2024. No response.
Murwillumbah High School	2 July 2024	Stakeholder who did not respond after being contacted.
Murwillumbah TAFE	2 July 2024	Stakeholder who did not respond after being contacted.
Friends of Koalas	2 July 2024	Stakeholder who did not respond after being contacted.
Local Area Command (Police)	8 July 2024	Initial contact followed up on 8 July. No response.
Murwillumbah Hospital	8 July 2024	Phone contact followed up 12 July 2024. No response.
Main Street Medical	8 July 2024	Initial contact followed up on 8 July. No response.

3.1.2 Stakeholder interview responses summary

The stakeholder interviews conducted by Coffey Services (Draft Clarrie Hall Dam Raising EIS SIA, 2021) demonstrated that stakeholders had a good understanding of the Proposal and its elements. Feedback highlighted uncertainty about the source of quarry material and lack of support for the restricted access to Crams Farm during construction. Overall, general feedback demonstrated that communication from Council was considered adequate.

The interview responses demonstrated a close-knit community whose identity is strongly linked to the natural environment. Crams Farm was identified as an important location for people to meet and socialise with local families holding close ties to the farm. There is a strong involvement in local volunteering including for cultural and arts events, environmental restoration groups and the State Emergency Service. It was important to control environmental and recreational impacts from the Proposal, as the community values environmental and recreational aspects highly.

The respondents highlighted that many younger people beyond high school age leave the local area to pursue education or employment opportunities. A potential benefit of the Proposal was identified as creating employment options for the local labour force during the construction phase.

Other findings from the consultation (Coffey Services, 2021) are summarised below:

- There were concerns around the potential risk of road accidents associated with the higher volume of vehicle movements (particularly trucks) along Kyogle Road from Murwillumbah to Uki and onto the construction site, and onto the McCabes Bridge construction site. Some stakeholders indicated restricting access to Crams Farm was also a potential issue.
- Increases in housing prices and the lack of affordable rental properties are the result of local population growth. This has been driven by people relocating from larger cities.
- There is some capacity for the construction workforce to be sourced from Uki and Murwillumbah, which has a number of earthworks, construction and excavation businesses.
- Tourism visitation to the Tweed hinterland area peaks in the winter months; however, visitation to the Clarrie Hall Dam is popular with locals in summer.

- Respondents asked about options to increase nature-based recreation around the dam through improving and expanding on the available walking paths, as well as the employment opportunities the Proposal presents for local people in the construction industry.

More recent engagement conducted in 2023 and 2024 found that there continues to be a high level of community awareness regarding the Proposal and that the Proposal is generally supported within the community.

The strong connection identified between the community and nature supports the potential to establish and enhance recreational facilities impacted at Crams Farm and the dam wall. Feedback continues to focus on the opportunity to improve recreational sites at and around the dam. Opportunities identified included improved accessibility at Crams Farm and the dam wall for people with disabilities and making information on public display as part of the EIS process easy to access.

Stakeholder meetings highlighted external pressures in the region from flooding and population growth with vulnerable groups impacted the most. The overall consensus was that the Proposal is required to support an increase in the local population and provide water security to the region. Ongoing efforts to encourage efficient water use was suggested.

Consultation undertaken with the Tweed Residents and Ratepayers Association demonstrated that long-term support of the Proposal has been maintained in the region, and a future focus of updating existing recreational facilities is supported. The meeting highlighted that if alternative dam locations were pursued, the impacts on the environment would likely be worse. This rationale supports the outcomes of the options assessment and previous consultation.

3.1.3 Online survey

Consultation during 2021 was conducted online, as Covid-19 limited in-person access. The online survey had a low uptake – only 64 people (0.06%) across the entire Tweed Shire responded to online questions.

The online community survey revealed that 20 people specifically stated they wanted to see the Proposal progress. Most of them indicated they wanted to see it happen without further delay. Nine people opposed the Proposal progressing, citing that alternative options should be pursued to secure the long-term water supply for the Shire.

Survey participants raised concerns regarding the potential for environmental impacts from the proposed dam wall raising.

3.2 COMMUNITY CONSULTATION

Tweed Shire Council established a page on its Your Say Tweed website (Tweed Shire Council, *Raising Clarrie Hall Dam – Environmental Impact Assessment*), where it is possible for stakeholders to find information and for Council to respond to questions. Responses again highlighted a strong connection between respondents and nature. The strongest concerns related to environmental impacts, increased traffic, noise from construction and access to recreation sites. Overall, the community supported the Proposal, although the community considered that ongoing water saving measures from new housing developments were not in keeping with Council's need to secure a long-term water supply.

The common theme running through stakeholder consultation was that stakeholders generally wanted to see the Proposal progress with some urgency. A program of ongoing consultation with key stakeholders and the community would be essential as the Proposal progresses.

Proposal updates are currently communicated through the Tweed Shire Council website Your Say Tweed, which provides a means for questions and comments about the Proposal to be addressed.

Further information about the comments and responses received through Your Say Tweed is provided in section 5 of the EIS.

Community information sessions were held on 6 and 7 February 2024 in Uki and Murwillumbah to provide an update about the Proposal and EIS process and answer questions. The outcomes and responses to these information sessions and other consultation methods are documented in section 5 of the EIS. Feedback was similar to that provided through Your Say Tweed, including the view that the Proposal should proceed, in addition to questions about why the raising of Clarrie Hall Dam was chosen over a new dam at Byrill Creek.

3.3 ABORIGINAL CONSULTATION

Engagement with the local Aboriginal community was initiated as part of earlier investigations and assessments of the Proposal in 2018. This included the Tweed-Byron Local Aboriginal Land Council and various Bundjalung Traditional Owners (notably the McDonald-Buxton family). While liaison was largely maintained since that time, as part of the latest Aboriginal cultural heritage assessment documented in the Aboriginal Cultural Heritage Assessment Report (ACHAR), consultation as outlined in Heritage NSW's *Aboriginal cultural heritage consultation requirements for proponents* guidelines was re-initiated in May 2023.

This consultation included a notification process, which identified 10 Aboriginal individuals and/or organisations who are now 'registered' for the Proposal. These parties include both those that have been involved previously and additional local and regional Traditional Owners.

Since notification, over 70 interactions have occurred with the registered Aboriginal parties. This includes meeting with representatives onsite to discuss important tangible sites and their future conservation and management, a study of intangible values (e.g. Dreaming places and stories) by an anthropologist with Elders and key knowledge-holders, and additional archaeological field survey. Additional meetings to discuss the ACHARd when in draft form are also proposed in the coming months to further discuss the Proposal findings, potential impacts and their management as provided in section 6.5 of the EIS.

4 Social baseline

The social baseline provides an understanding of the characteristics of the communities within the social locality of the Proposal. The social baseline describes the social context without the Proposal by documenting the existing social environment, conditions and trends relevant to the impacts identified.

4.1 SOCIAL LOCALITY

Clarrie Hall Dam is located on Doon Doon Creek upstream of the town of Uki within the Tweed Shire. The social baseline and this SIA has considered social impacts in the social locality of the Tweed Shire LGA, including the townships in proximity (Uki, Murwillumbah and Doon Doon) as shown in Figure 4-1.

The Tweed Shire is located in Northern NSW, approximately 100 km south of Brisbane and 860 km north of Sydney. Tweed Shire is surrounded by the City of Gold Coast (north), Kyogle Shire (west), Pacific Ocean (east) and Lismore and Byron Shires (south).

Tweed Shire covers an area of 1,309 km^2 and is built around coastal communities, rural areas, agricultural land, national parks and urban areas. The largest towns are Tweed Heads, Kingscliff, Pottsville and Murwillumbah. The 2 main townships closest to the Proposal are Uki (4 km south-west) and Murwillumbah (15 km south-west). The population in the region has grown faster recently than before.

The communities are linked by a network of state roads and local government roads managed by Council. Kyogle Road forms the most direct route from Murwillumbah to Uki and would be the main transport route for material and people to Clarrie Hall Dam.

The original inhabitants of the Tweed Shire are the Bundjalung nation, which comprised 3 groups: the Tul-Gi-Gin people of the northern area, the Goodjinburra people of the Tweed coast area and the Moorang-Moobar people of the southern and central areas around Wollumbin (Mount Warning). The Bundjalung nation has a strong cultural connection to the land and environment.

European settlement of the region dates from the 1840s. Early settlers worked as cedar getters, followed by timber merchants and boat builders (Tweed Regional Museum, 2023). Population growth was slow until the 1980s, when rapid growth was driven by tourism across the region (Tweed Regional Museum, 2023). The proximity to the Gold Coast and Brisbane has led to continued high levels of tourism in the region. Recently there has been a change in demography and land use, as people from urban centres have been relocating to the region for lifestyle reasons, bringing money and investment into the area.

Local industry in the region is built around health care and social assistance, retail, construction and hospitality. There has been a trend for younger workers to move from the region to pursue work or education opportunities.

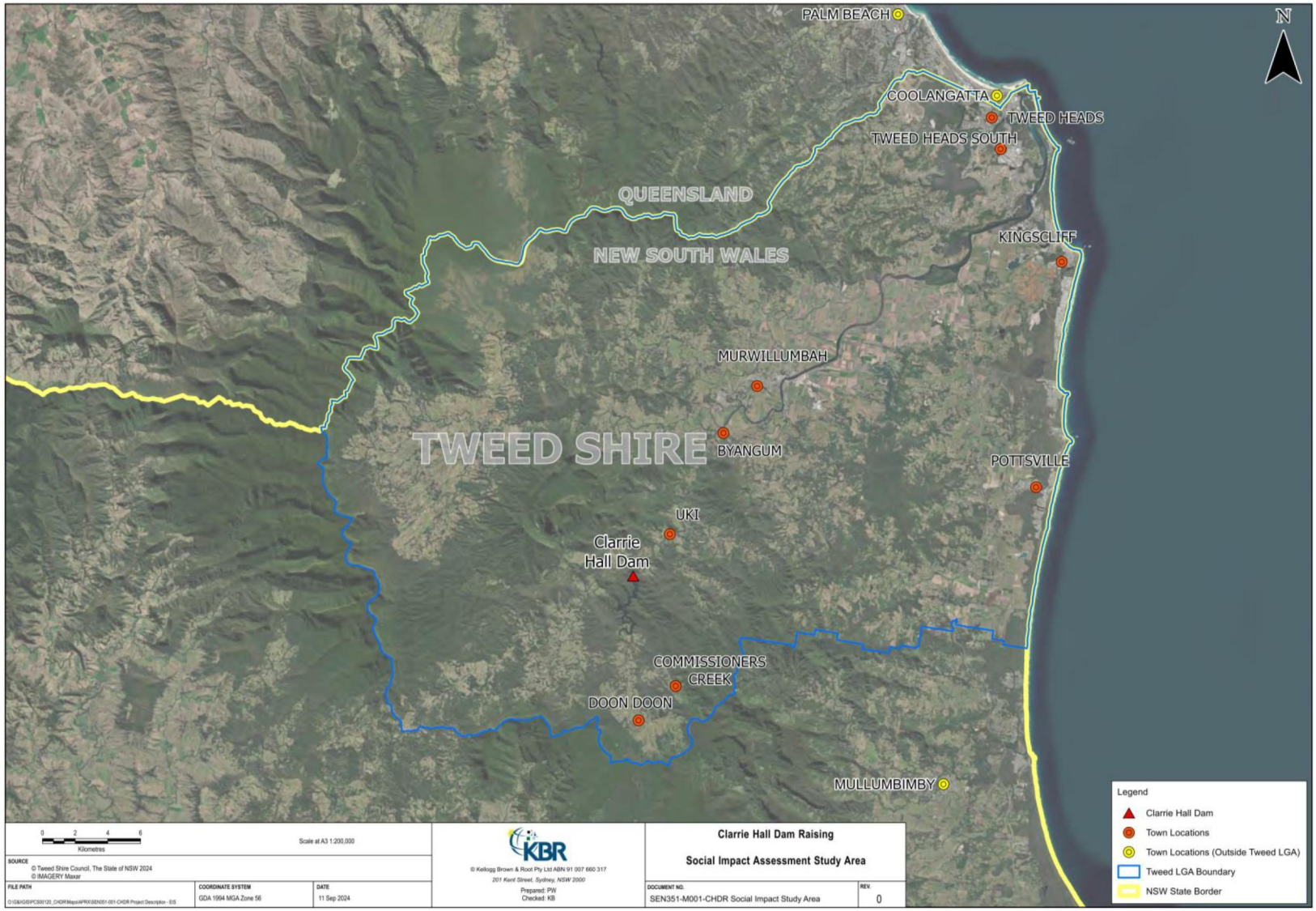


Figure 4-1 Social locality – Tweed Shire

4.2 POPULATION

The population of the Tweed Shire in 2022 was 97,969 (Australian Bureau of Statistics, 2022). The population has been steadily increasing, as shown in Table 4-1, and growth is forecast to continue (Tweed Shire Council, 2023a).

Table 4-1 Yearly population within the Tweed Shire (Tweed LGA) and year-to-year change in population

Year	Population	Change	Change (%)
2016	93,742	-	-
2017	94,538	796	0.8
2018	95,240	702	0.7
2019	95,906	666	0.7
2020	96,645	739	0.8
2021	97,151	506	0.5
2022	97,969	818	0.8

Source: Australian Bureau of Statistics, 2022

Population density is higher around coastal communities, with a lower overall population in the Tweed hinterlands, as shown in Figure 4-2. The population of towns and the percentage that each population forms of the overall Tweed Shire population are provided in Table 4-2. Murwillumbah has the largest population in the Tweed Shire outside of Tweed Heads, accounting for 10% of the total population.

Table 4-2 Population of townships within the Tweed Shire, 2021

Locality	Population (2021)	Percentage of Tweed population (%)
Tweed Heads	20,563	21
Tweed Heads South	8,423	8.6
Murwillumbah	9,812	10
Kingscliff	8,355	8.6
Pottsville	7,209	7.4
Uki	685	0.7
Byangum	153	0.2
Doon Doon	92	0.09
Commissioners Creek	38	0.04

Source: Australian Bureau of Statistics, 2022

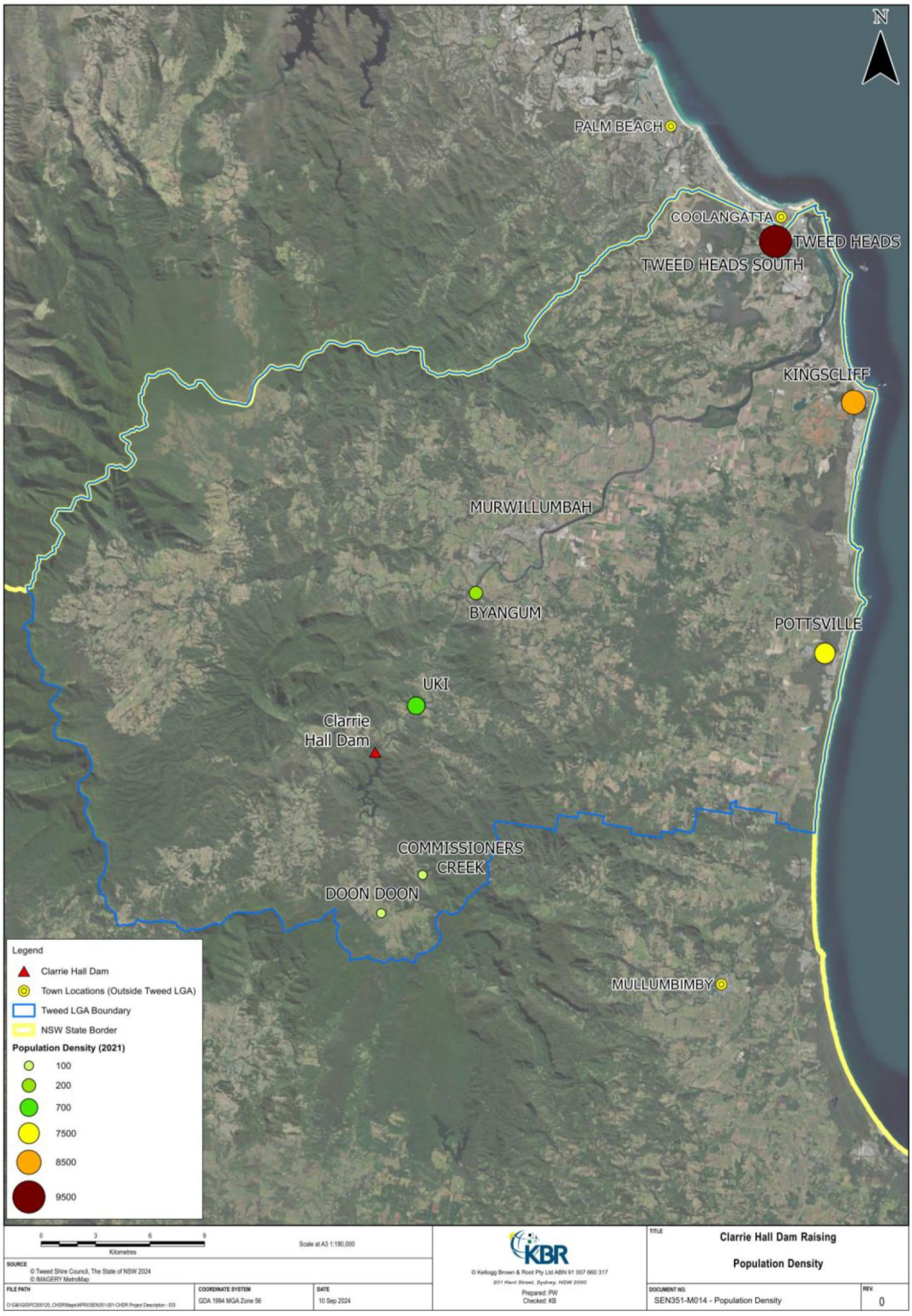


Figure 4-2 Population heat map of Tweed Shire showing key communities around Clarrie Hall Dam

The Tweed Shire has seen constant population growth of approximately 680 people per year, with a slight slowdown in 2021, which was likely the result of the Covid-19 pandemic. Growth is forecast to continue within the region, with the population estimated to reach 132,221 by 2041, as shown in Figure 4-3 (Tweed Shire Council, 2023a).

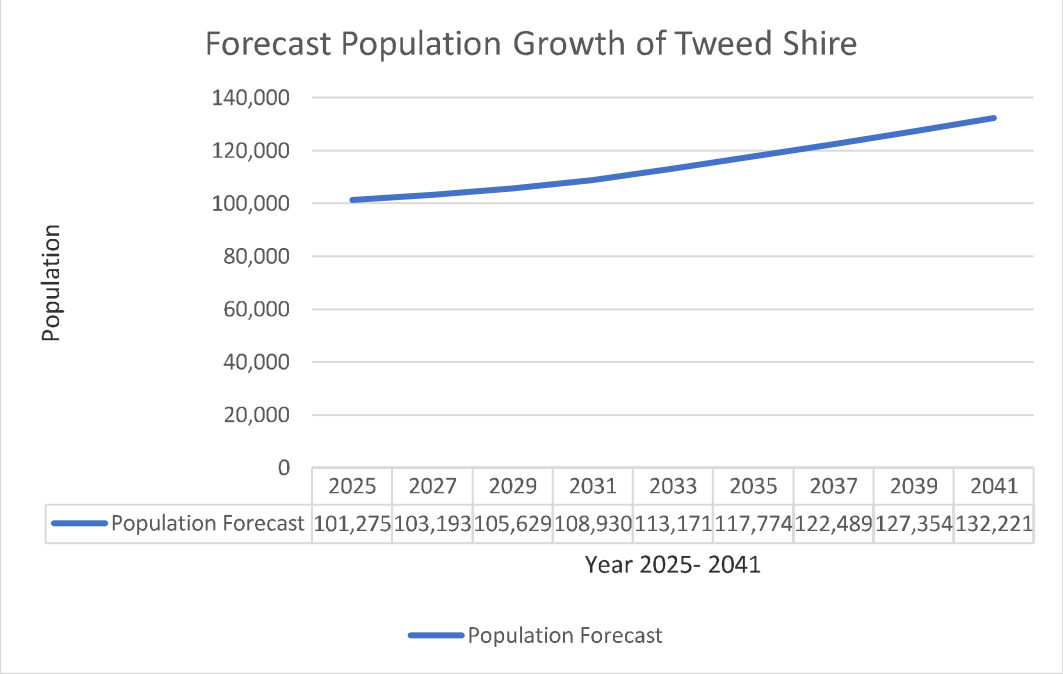


Figure 4-3 Year-to-year population forecast within the Tweed Shire

Source: Tweed Shire Council 2023

The median age of the population has risen in the Tweed Shire from 46 in 2016 to 47 in 2021. This is above the Australian median age of 38 (Australian Bureau of Statistics, 2022), as shown in Figure 4-4. This trend is reflected in both Murwillumbah and Uki, where the median age rose between 2016 and 2021. In both regions, the average age is higher than the Australian median age.

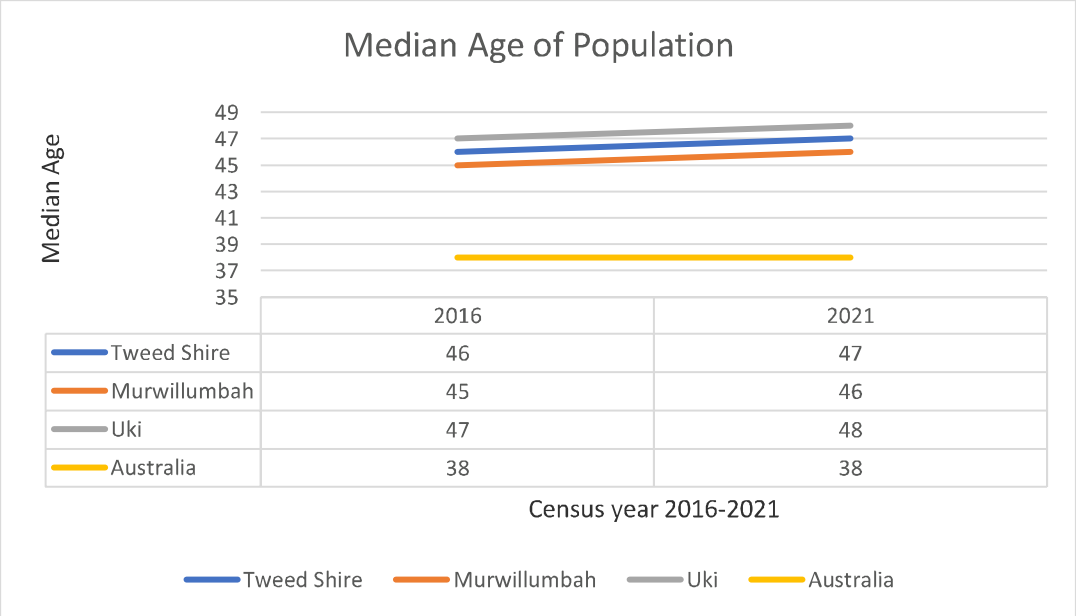


Figure 4-4 Median age across Tweed Shire and Australia, 2016 and 2021

*Source: **Australian Bureau of Statistics, 2022***

The latest census data (Australian Bureau of Statistics, 2022) showed that the median age in each town was higher than the median age in Australia, as shown in Figure 4-5. Pottsville had the lowest median age of 42, which was still above the median age of the Australian population.

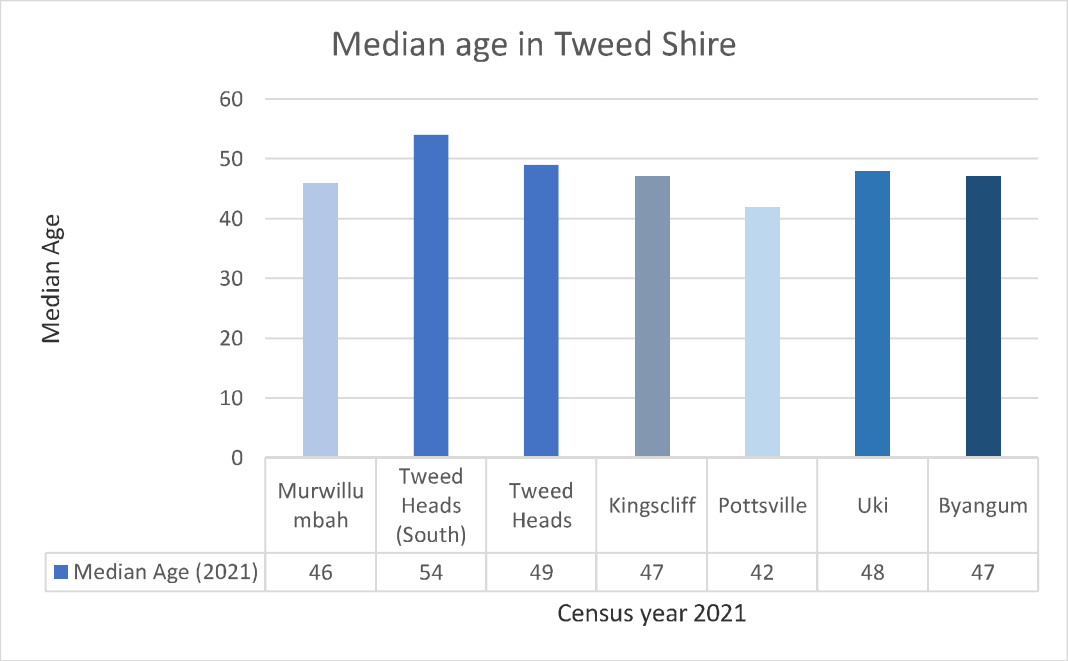


Figure 4-5 Median age in Tweed Shire townships, 2021

Source: ***Australian Bureau of Statistics, 2022***

In the 2021 census, 4,329 people identified as Indigenous, representing 4.4% of the population of the Tweed Shire (Australian Bureau of Statistics, 2022). In Murwillumbah, 355 people identified as Indigenous, which represented 3.6% of the population. In Uki, 16 people identified as Indigenous, representing 2.3% of the population. In Australia, 3.2% of the population identified as Indigenous – a higher percentage than for Uki but lower than for Murwillumbah and Tweed Shire.

4.3 INCOME

The median annual income in 2021 of residents, excluding government pensions and allowances, was $34,216. This is below the Australian median of $41,860 the same year (Australian Bureau of Statistics, 2022). The weekly income for the Tweed Shire is shown in Table 4-3.

Table 4-3 Tweed LGA weekly income breakdown, 2021

Household income	Percentage (%)
Nil	5.6
$1–499	29
$500–999	26.9
$1,000–1,999	22
$2,000–2,999	4.6
$3,000 +	2.4

Source: Australian Bureau of Statistics, 2022

The Tweed Shire had a lower median income compared to NSW for individuals, households and families in 2021, as shown in Table 4-4.

Table 4-4 Median weekly income in Tweed LGA and New South Wales

Median weekly income	Uki ($)	Murwillumbah ($)	Tweed LGA ($)	New South Wales ($)
Personal	563	601	658	813
Family	1,333	1,472	1,663	2,185
Household	1,192	1,169	1,296	1,829

Source: Australian Bureau of Statistics, 2022

4.4 HOUSING

A review of housing availability demonstrated that there was a similar percentage of separate houses within the Tweed Shire (66%) as in NSW (65.6%). The main differences were found in the percentage of semi-detached houses and flats within the Tweed Shire. The Tweed Shire had more semi-detached housing and fewer flats compared to the rest of NSW. A breakdown of residential types in the Tweed Shire and NSW as a whole is provided in Table 4-5.

Table 4-5 Tweed Shire and New South Wales housing types 2021

Housing style	Number	Uki (%)	Murwillumbah (%)	Tweed Shire (%)	New South Wales (%)
Separate house	24,836	99.6	79.3	66.0	65.6
Semi-detached	7,107	1.8	6.1	18.9	11.7
Flat or apartment	4,828	0	13.6	12.8	21.7
Other dwelling	716	0	0.8	1.9	0.7
Total occupied private dwellings	37,602	88.0	93.2	90.6	90.6
Total unoccupied private dwellings	3,892	9.6	6.8	9.4	9.4

Source: Australian Bureau of Statistics, 2022

Tweed Shire has a higher number of properties owned outright (41.5%), compared to NSW (31.5%), as shown in Figure 4-6. This is reflected in the number of rental accommodations being lower in Tweed Head (24.2%), compared to NSW (32.5%).

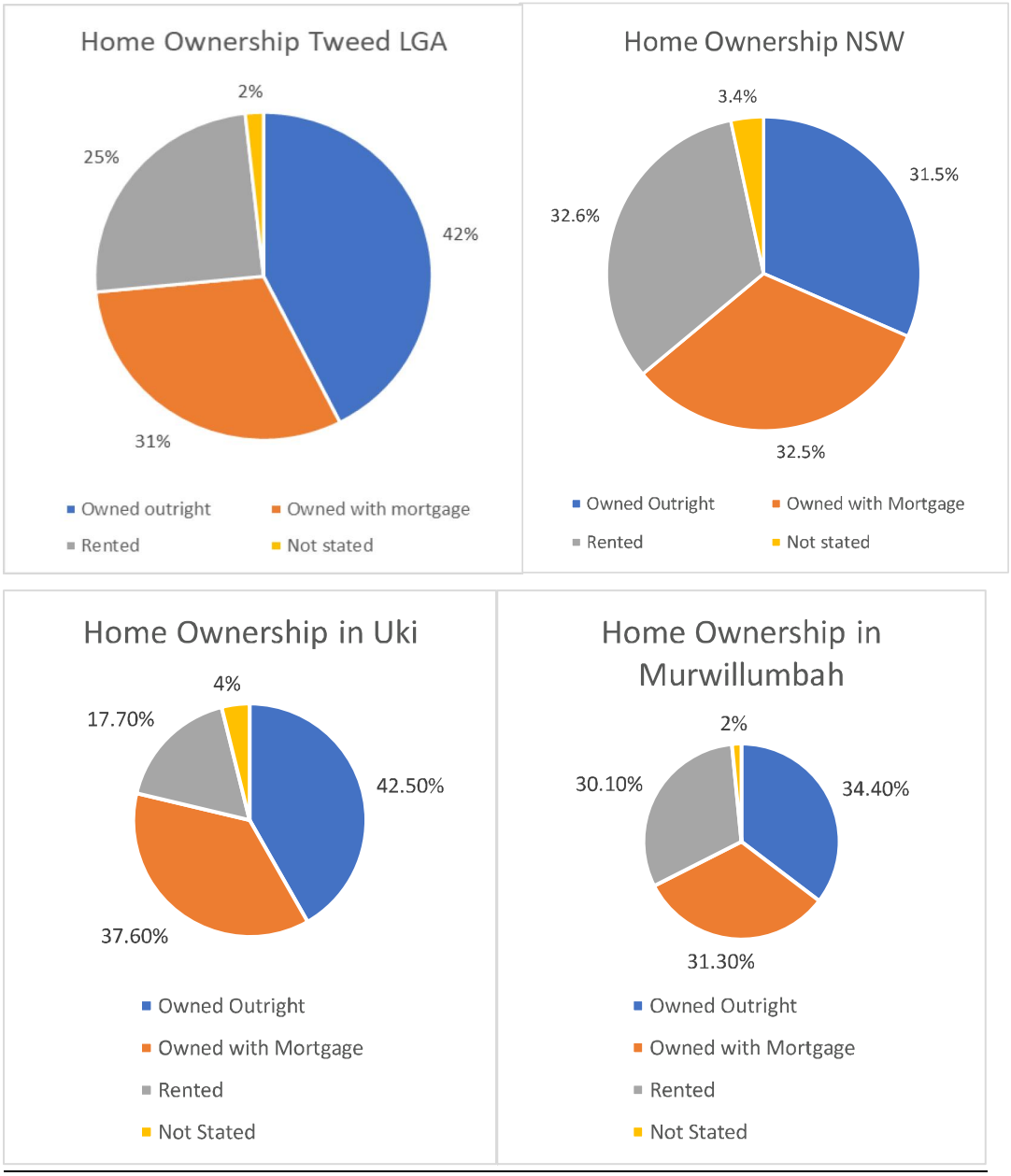


Figure 4-6 Percentage of tenancy type within the Tweed Shire, Uki, Murwillumbah and New South Wales, 2021

Source: ***Australian Bureau of Statistics, 2022***

Tweed Shire has lower monthly rental and mortgage repayments than the rest of NSW (2021), as shown in Table 4-6.

Table 4-6 Tweed Shire and New South Wales median mortgage and rent per month, 2021

Year	Uki (%)	Murwillumbah (%)	Tweed Shire (%)	New South Wales (%)
Median mortgage repayment ($ monthly)	1,775	1,733	1,872	2,167
Median rent ($ monthly)	400	350	400	420
Median weekly household Income ($)	1,283	1,169	1,296	1,829

Source: Australian Bureau of Statistics, 2022

The median monthly mortgage repayment has risen from $1,733 in 2011 to $1,872 in 2021 (Figure 4-7), and median weekly rent has risen from $300 to $400 per week (Figure 4-8) over this time. This reflects the trend across NSW, where mortgage repayments and rent have both risen since 2011. Median weekly rental prices have risen significantly between 2011 and 2021 – a 62.5% rise in Uki and a 67% rise in Murwillumbah.

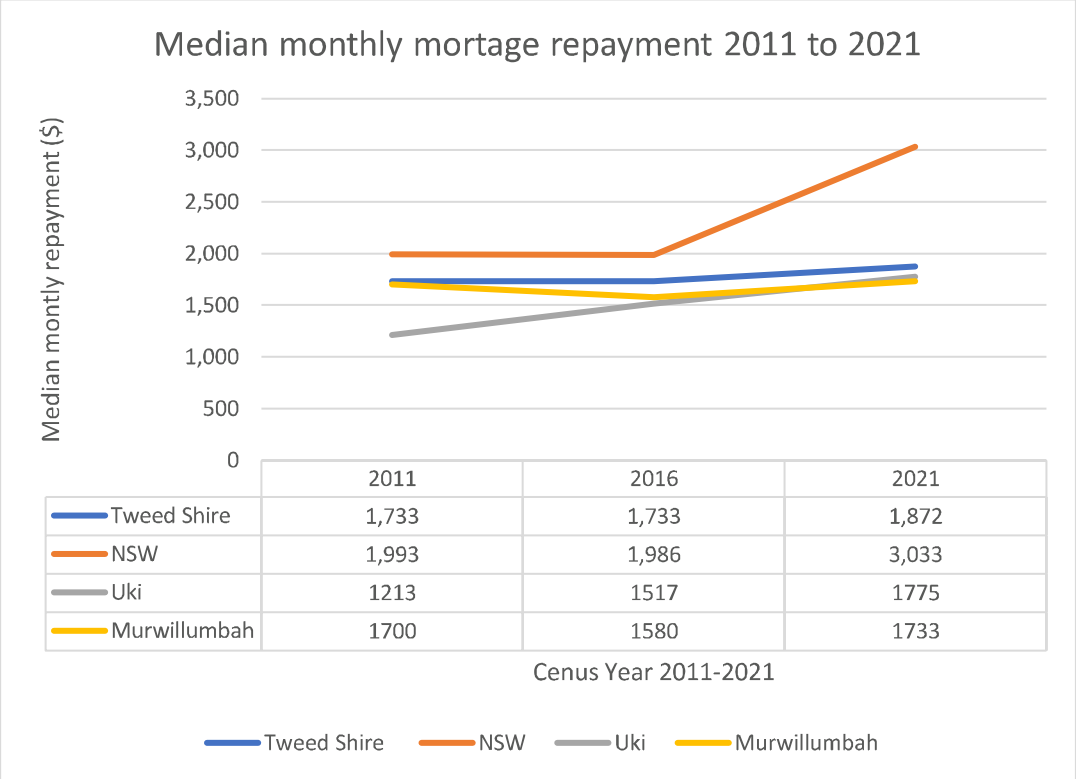


Figure 4-7 Median monthly mortgage repayment within the Tweed Shire, 2011 to 2021

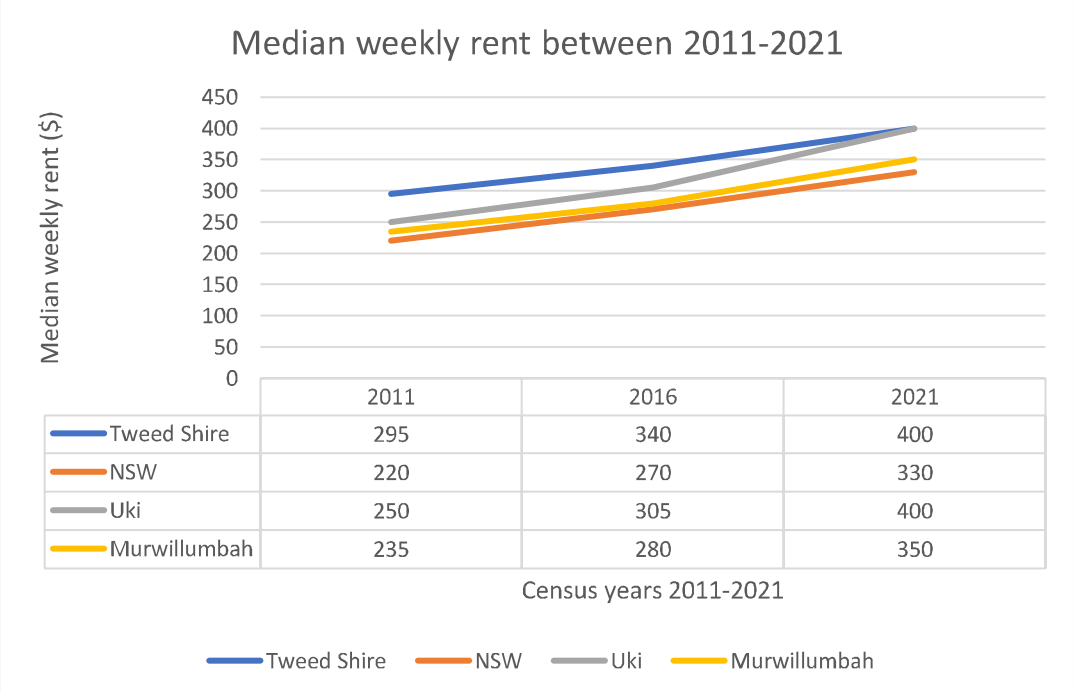


Figure 4-8 Median rent within the Tweed Shire, 2011 to 2021

Source: Australian Bureau of Statistics, 2022

House prices have risen in Murwillumbah and Uki over the past 5 years by 59%, as shown in Figure 4-9.

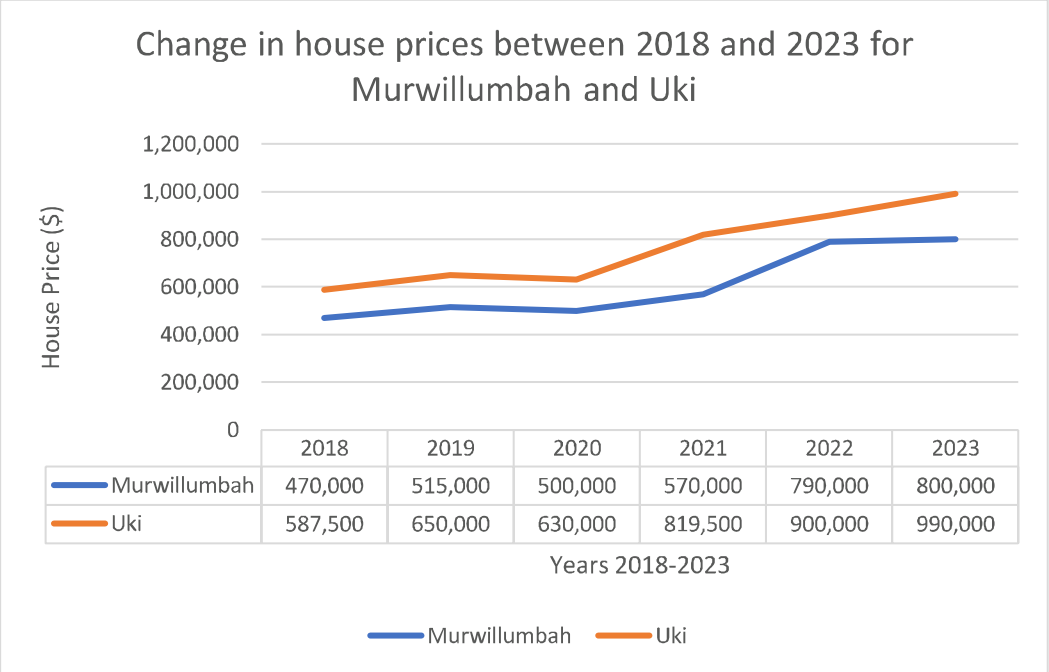


Figure 4-9 House price trends in Murwillumbah and Uki, 2018 to 2023

*Source: **realestate.com.au, 2023***

4.5 SHORT-TERM ACCOMODATION

There was no data on short-term accommodation occupancy within the social locality. Local accommodation in Uki and Murwillumbah appears to be mostly bed and breakfasts and small retreat-style accommodation facilities, with some hotels and motels. There are also a number of short-term rentals listed on online platforms such as Airbnb.

4.6 EDUCATION

The Tweed Shire has a lower level of education than the rest of NSW, as shown in Table 4-7. This is demonstrated by 58% of the Tweed Shire population having no qualifications, compared to 39.6% in NSW.

Table 4-7 Tweed Shire and New South Wales education levels, 2021

Qualification	Tweed Shire (%)	New South Wales (%)
Bachelor degree or higher	17.7	27.8
Advanced Diploma or Diploma	9.7	9.3
Certificate level	20	15

Source: Australian Bureau of Statistics, 2022

4.7 EMPLOYMENT BY CATEGORY

The main employment industries within the study area are retail, accommodation and food, health care and social assistance and construction. The labour force has a lower representation of construction workers than the rest of NSW, as shown in Table 4-8.

Table 4-8 Industry sector of employment within Tweed Shire and New South Wales, 2021

Employee jobs	Number of workers	Tweed Shire (%)	New South Wales (%)
Agriculture, forestry and fishing	1,034	1.5	2.1
Mining	429	0.6	0.9
Manufacturing	2,449	3.6	5.8
Electricity, gas, water and waste services	434	0.6	0.9
Construction	4,713	7.0	8.4
Wholesale trade	1,712	2.6	3.1
Retail trade	6,063	9.0	9.7
Accommodation and food services	6,463	9.6	7.1
Transport, postal and warehousing	1,622	2.4	4.7
Information media and telecommunications	846	1.3	2.2
Finance and insurance services	1,973	2.9	4.9
Rental, hiring and real estate services	1,615	2.4	1.8
Professional, scientific and technical services	2,743	4.1	8.1
Administrative and support services	4,026	6.0	3.5
Public administration and safety	3,345	5.0	6
Education and training	4,788	7.1	8.4
Health care and social assistance	8,544	12.7	12.5
Arts and recreation	950	1.4	1.5
Other services	1,746	2.6	3.7

Source: Australian Bureau of Statistics, 2022

Locally, in Uki the most frequent employment industries are professionals and technicians and trade workers (26.6 and 16.7%). This further reflected in Murwillumbah, where professionals, technicians and trade workers, and community and personal service workers are the most frequent employment industries (16.5, 16.1 and 15.4%).

4.8 UNEMPLOYMENT

The 5.0% unemployment rate within the Tweed Shire (2021) has risen since 2016 and is higher than the NSW rate of unemployment of 4.9%.

The latest (2021) ABS data showed unemployment at 5.5% in Murwillumbah and 7.3% in Uki, which is higher than in Tweed Shire, where it is 5.0%.

4.9 PLACE OF BIRTH

The place of birth of Tweed Shire residents is shown in Table 4-9.

Table 4-9 Place of birth of Tweed Shire residents, 2021

Place of birth	Percentage (%)
Oceania (Excluding Australia)	3.1
North West Europe	6.8
Southern or Eastern Europe	0.8
North Africa or Middle East	0.2
South East Asia	1.2
North East Asia	0.6
Southern or Central Asia	0.7
Americas	1.3
Sub-Saharan African	0.7
Australia	84.6

Source: Australian Bureau of Statistics, 2022

4.10 LOCAL GOVERNMENT

Tweed Shire Council is the only local government within the social locality of the Proposal. It was formed in 1947 and is responsible for maintaining and establishing regional infrastructure and community services. Council owns and operates Clarrie Hall Dam. Council has been directly involved with the Proposal and is driven to secure a long-term water supply to the region.

4.11 COMMUNITY HEALTH AND WELLBEING

Murwillumbah District Hospital is the closest health care facility to the Proposal. The hospital is reported to serve 20,000 residents and offers emergency and general care, medical imaging and outpatient services (Northen New South Wales Health, 2022).

The Tweed Hospital, which is located approximately 20 km north-east of Murwillumbah District Hospital, is the major regional referral hospital. The hospital offers a range of services including acute and emergency care, surgical services, women's care and newborn services, intensive and coronary care units, mental health inpatient facilities, Aboriginal health, and allied health outpatient clinics (Northern New South Wales Health, 2022).

A new major regional referral hospital, Tweed Valley Hospital, located in Kingscliff was opened on 14 May 2024. This has led to the transfer of all hospital services from the hospital in Tweed Heads.

4.12 CRIME STATISTICS

Crime on average is less prevalent in the Tweed Shire compared to the whole of NSW, as shown in Figure 4-10. Statistics from 2022, between the months of January and February, demonstrated that the rate of assaults, theft and damage to property is below the state average (New South Wales Bureau of Crime Statistics and Research, 2022). Robbery was the only crime statistic that was above the state average. The data was representative of two-year trends in crime rates and was likely to be indicative of future trends (New South Wales Bureau of Crime Statistics and Research, 2022).

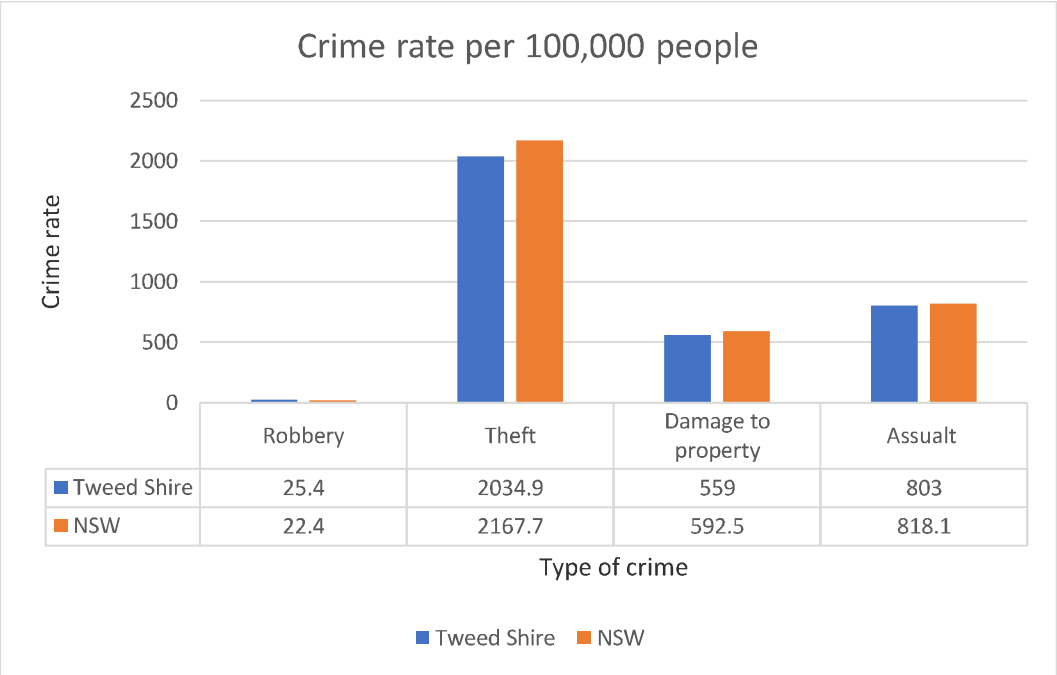


Figure 4-10 Crime rate per 100,000 people within the Tweed Shire

Source: ***New South Wales Bureau of Crime Statistics and Research, 2022***

4.13 FLOOD HISTORY

The Tweed Shire has historically been affected by severe flooding events. The impacts of these floods have been felt most recently in 2022 and 2017. The Impacts from the 2022 flood event are currently still affecting communities.

Recent flood damage has resulted in significant damage to regional infrastructure and property. In the study area, 2,100 properties were impacted by the 2022 flood (Housing, roads, flood resilience and mitigation top wish list, 2022). This has created housing impacts and resulted in large clean-ups and much construction work for the local labour force.

4.14 KEY LOCATIONS

In the study area, there are locations that hold significant value for local communities. This includes Crams Farm. Traffic counts included in the traffic impact assessment (see section 6.14 of the EIS) demonstrated regular visitation by recreational visitors for walks, picnics, kayaking and events. Further, Clarrie Hall Dam itself is a popular location for walkers and fishers. These built and natural environments were identified through stakeholder engagement as being important to local community identity.

5 Impact assessment and prediction

This chapter analyses social impacts related to the Proposal. As such, it aims to report any changes to current social baseline conditions outlined in section 4. It is assumed that any changes occur because of the Proposal and would not occur if the Proposal does not proceed.

5.1 POPULATION AND DEMOGRAPHIC

The population of the region is currently 97,969. Population growth has been constant over the past 5 years, with approximately 680 additional people coming into the region each year. The population is forecast to reach 132,221 by 2041. The Proposal can ensure that if population growth continues at its current rate, water would continue to be a stable resource. Current and new residents in the Tweed Shire would thereby enjoy a continued quality of life and water supply.

The local population has been ageing over the past 5 years, with the average age in the Tweed Shire higher than the national average. This trend is represented across all towns downstream and upstream of the Proposal. As a result of construction activities, there may be short-term changes to the average age in the towns of Uki and Murwillumbah, which are geographically closer to the construction site and are therefore most likely to support a construction workforce. During operation, it is expected that there would be minimal impact on local population demographics.

The Proposal would require workers during the construction phase, which would likely to lead to short-term increases in local populations (an estimated average of 120 workers (peak 180 workers) are required). Population increases can place pressure on community services (healthcare, childcare) and facilities (gyms, restaurants) within the area. Population increases would also likely result in increased road traffic, which would be amplified by planned construction traffic. Traffic impacts are detailed in the traffic impact assessment in the EIS. The identified impacts can decrease the amenity and access to services for the local community. It is essential that stakeholders are not disadvantaged.

5.2 HOUSING IMPACTS

The desktop analysis highlighted that Tweed Shire has a higher percentage of outright homeowners compared to the rest of New South Wales. Homeowners' priorities are likely to vary from renters' priorities and would be most impacted by changes to water supply and prices. The Proposal is unlikely to directly impact the percentage of homeowners in the region but can support water consumption for more households.

Housing impacts are most likely to be felt during the construction phase of the Proposal, which would require an estimated average of 120 workers (peak 180 workers). While the Proposal includes onsite accommodation, an additional flow of workers from outside of the region would likely increase the demand for accommodation. Any increase in demand for accommodation would likely decrease the availability of short-term accommodation (e.g. hotels) and long-term accommodation (e.g. rentals). This is most likely to occur in towns closest to the construction site, such as Uki and Murwillumbah. Both locations are already demonstrating low vacancies and limited availability of rental properties.

The existing effects of increased demand and limited supply in the Tweed Shire have resulted in increasing house and rental prices. This is likely to be amplified through the construction phase of the Proposal, when some workers would be expected to rent in the region, which would drive up the price of accommodation and could potentially impact current renters. The Proposal aims to limit these potential impacts by including temporary onsite workers accommodation during construction to provide alternative housing arrangements. Impacts on the housing market would

be mostly limited to the construction phase of the Proposal, as during operation no further workers would be required in addition to the current workforce.

The price of housing within the Tweed Shire is further impacted by outside events. This includes adverse weather events and flooding, which currently and historically has impacted housing availability. Additionally, increased demand for property in the region from city buyers seeking lifestyle changes have resulted in further price pressure.

5.3 LABOUR MARKET

Socioeconomic analysis highlighted a higher-than-average rate of unemployment within the Tweed Shire. Considering that the region holds a high percentage of construction and trade workers, there are opportunities for unemployed workers to be utilised during the construction phase of the Proposal. This would provide a valuable resource that benefits the Proposal. Local workers also provide the benefit of decreasing housing demand during construction.

The Proposal would also provide an opportunity to onboard apprentices, provide First Nations employment, support women in construction and educate local workers through the construction phase. This can upskill and further develop the region's ability to undertake infrastructure projects. Employment and education opportunities can encourage the younger generation to stay, whereas historically they have had to leave to find employment and education opportunities.

As the local construction workforce is currently involved in rebuilding properties and communities damaged in recent flood events, it is important to ensure that any workers for the Proposal would not be taken from current key projects within the region. If the local workforce is not sufficient to complete construction, workers may be required to be sourced from outside of the region. This can increase the costs associated with construction but would ensure that the local communities are not left worse off. Flood impacts are a current challenge faced by the community but may not be applicable when construction starts on the Proposal.

5.4 PROPERTY

The Proposal would directly impact current landowners located in the footprint of the Proposal. These landowners are most disadvantaged and through construction may realise potential decreases in overall land value. These impacts are expected to last through construction and only incur short-term pricing effects. Council has offered compensation packages for impacted properties and has already purchased impacted lands.

Overall, because the Proposal would provide a secure supply of water and improved recreational facilities, the value of property within the Tweed Shire can potentially increase. This is in response to securing the necessary water resource to support a growing population and act as a buffer for hot weather or periods of drought.

The Proposal may potentially increase downstream flood anxiety. This would mostly impact residents and landowners living near Doon Doon Creek and the Tweed River, who have concerns surrounding the volume of water held by the dam both in the construction and operation phase. Local anxiety is heightened following recent flood events in the region and the damage that has resulted. The proposed dam raising is not for flood mitigation – this is explained in the EIS, and information is included in consultation material.

During construction, potential environmental impacts include noise and dust pollution. Any pollution can reduce the quality of life and amenity of the surrounding region for residents and landowners. The current construction method includes blasting and concrete production, which are both likely to result in environmental impacts. As the dam is located away from town centres, the impacts would mostly be felt by landowners and residents located near the construction site. It would be important to review and reduce any impacts on local landowners.

The Proposal would result in an increase of the dam's footprint, which would encroach on the Mount Jerusalem National Park and lead to a loss of vegetation of approximately 1.9 ha. This land has been revoked subject to final survey and compensation. This area has been assessed in the EIS.

As demonstrated in the stakeholder engagement (section 3), there is a strong connection between community and nature – and the impacts on the surrounding natural environment are significant. The impacts of construction would also be felt on the amenity of Carrie Hall Dam and walking trails around the dam, which the community highlighted to be key sites.

5.5 COMMUNITY SERVICES AND FACILITIES

The demand on community services and facilities would potentially increase through the construction phase of the Proposal. This includes increased road traffic on surrounding roads and in local towns including Uki and Murwillumbah. As stated in the traffic impact assessment (see section 6.14 of the EIS), undertaken as part of the EIS, there would be an increase in the number of heavy vehicles and vehicles. That is likely to increase the risk of road accidents.

The construction phase of the Proposal would limit access to Clarrie Hall Dam. Additionally work at McCabes Bridge will limit access and amenity at Crams Farm. This can impact recreational users by reducing their ability to access the sites for picnics and activities. These impacts would decrease the amenity of the region and may lower site visitation during construction. Impacts during construction are expected to last 2 years, after which amenities and facilities will be replaced.

Construction of the Proposal would raise the risk of workplace accidents. This would place a higher demand on local health and emergency services. It is important that these impacts do not affect the local community and that the emergency and health services are not overburdened.

As previously identified, any potential population increases through the construction phase of the Proposal can place additional pressures on local services such as childcare, accommodation and hospitality. For example, residents may find it harder to directly access resources related to their quality of life. The impact on services can be understood through consultation with service providers in the region and modelled to support a population increase of 120 people.

An increased demand for services during construction may also provide benefits to the community, through generating additional income and stimulus for the economy and increasing employment opportunities. Where possible, the Proposal should identify gaps in services and strive to maximise benefits.

5.6 LOCAL BUSINESS AND INDUSTRY PROCUREMENT

The Proposal can create benefits for local businesses by generating opportunities to provide skills and materials for construction. This can be achieved by lowering any barriers to entry for competitive and capable firms – and therefore encouraging engagement with the Proposal. Procurement opportunities can be provided to support Indigenous-owned businesses and women in construction. As such, flow-on benefits to the local economy would include employment and educational opportunities.

5.7 CRIME

The Proposal is unlikely to have a strong impact on crime rates within the Tweed Shire. During the construction phase, community cohesion may be impacted by population shifts which can be a trigger for domestic violence and assault crimes. There is also potential for site-specific crimes including damage to property and vandalism at the site of the Proposal. During operation, it is unlikely there would be any impacts on crime rates related to the Proposal.

5.8 UNMITIGATED SOCIAL IMPACTS

A summary of unmitigated social impacts is provided in Table 5-1.

Table 5-1 Summary of unmitigated social impacts

Potential impact category	Points to consider	Findings of the SIA
Way of life	Would there be material changes to people's daily lives and how they get around, particularly during construction?	During construction, there would be additional traffic on regional and local roads, which may cause disruption to people's everyday lives. Consultation indicated that the impacts of additional traffic associated with the construction of the dam are a concern for the residents of Uki. The residents of Uki are also concerned about the risk of additional accidents due to increased traffic. A traffic management plan will be developed to minimise traffic and access impacts as per section xx of the EIS. Replacement of McCabes Bridge and approaches leading to the recreation area at Crams Farm may cause minor disruptions to people living in the area and those accessing the recreation site.
	Would there be impacts such as access to affordable housing if construction induces a large influx of workers?	Consultation indicated the area is currently being impacted by a lack of supply of housing. During Covid-19 many people from urban areas moved to the Tweed Shire, forcing house prices and rents higher. The peak workforce for construction is expected to be approximately 120, which has the potential to put further pressure on the availability of housing and rental accommodation. It is proposed to develop accommodation for workers near the construction site to minimise impacts on the regional housing market.
	Is anyone vulnerable to relocation and resettlement?	Lower-income residents are already vulnerable to relocation and resettlement. Stakeholders identified that rising rents and house prices are pushing residents to other regional areas further from the coast. The small proportion of construction workers that may choose to rent or purchase property within the area (as accommodation would be provided as an option) are unlikely to significantly impact on the established trend and current housing affordability issue that is displacing lower-income and vulnerable residents. Consultation with disability support services provided through Council indicated that the area has a high level of people with disadvantage, and these people are currently highly impacted by the housing crisis.
Community	Would there be substantial changes to people's sense of place?	There would be minor impacts to people's sense of place at Crams Farm due to the raised water level that would change the appearance of the area. The area surrounding the current dam wall would change in appearance because of changes to access roads, the construction footprint and the actual dam wall that would be significantly higher.

Potential impact category	Points to consider	Findings of the SIA
	How would community cohesion be impacted during planning, construction and operation?	The existence of a large mainly male workforce living onsite may impact community cohesion. This could lead to gender imbalances and changes in social dynamics driven by unequal representation and lack of opportunities for women in historically male industries leading to a lack of diversity and representation. Uki, as the nearest locality to the construction site, has limited services and may be impacted both positively and negatively. For existing businesses, trade may increase, and there may be additional demands on support and community services. The larger regional centre of Murwillumbah has significant commercial and social services, and social cohesion may also be impacted. No impacts to social cohesion are anticipated during operation of the dam.
	Would community composition and character change during construction as a result of the nature of the workforce?	The construction period is for approximately 2 years, with a peak of 180 mainly male workers onsite. Most of the workers would either be accommodated onsite or travel from larger coastal areas such as Tweed Heads. Impacts on community composition and character are expected to be minor and occur during construction only.
Accessibility	What are the impacts on roads and how people use them (including pedestrians and public transport)?	There would be impacts on roads due to the increased traffic associated with construction. Pedestrians in the village of Uki may be impacted, as the road passes through the centre of the village. Public transport in the area is limited to regular bus services that pass between local towns and the coast and are not likely to be impacted.
	Is there capacity in local services (e.g. health, education, community services, and local businesses) to respond to demand from the construction workforce	In the village of Uki, there is limited capacity of services to respond to the demands of the construction workforce. Health and education services in Uki are limited, and there are a small number of businesses, such as cafes. The larger regional centre of Murwillumbah has significant commercial and social services. A number of primary and high schools are located in the town. Murwillumbah additionally has a regional hospital with an emergency department.
	Would construction and/or operation affect people's access to the things they need and value?	There would be impacts to the recreation area near and around the dam and at Crams Farm, which is a popular recreation area. McCabes Bridge and approaches will be replaced and some of the existing facilities, such as the boat ramp, would be inundated. New facilities would be constructed. Doon Doon Hall and picnic facilities at Crams Farm would not be impacted.
Culture	Would the project affect people's values and beliefs associated with the locality, including how they value landforms, waterways and the built environment?	There would be some inundation of vegetation, and people's values and beliefs associated with the natural environment and biodiversity would be impacted. The visual amenity of sites such as the dam wall recreation area and Crams Farm would be impacted to a minimal extent.

Potential impact category	Points to consider	Findings of the SIA
	Could the project cause intangible harm through cultural or spiritual loss (loss or diminution of traditional attachment to the land or connection to Country and associated cultural obligations to care for Country, or loss of rights to gain spiritual sustenance from the land including using water for cultural practices)?	The Proposal would cause the loss of cultural and spiritual objects sacred to the local Traditional Owner community. Consultation with local Aboriginal parties impacted by the Proposal are discussed in the Aboriginal cultural heritage assessment of the EIS.
Health and wellbeing	Would there be any psychological loss associated with changes to surroundings?	Stakeholder engagement has demonstrated that the local community highly values the regional environment and the biodiversity of the area. Loss of vegetation associated with construction activities and inundation would be offset and the surroundings will still retain the same character so psychological loss is not anticipated.
Surroundings	Could there be improved access to water for everyday needs?	The project is designed, and is being implemented, to increase the volume and reliability of water supply to residents in the Tweed Shire.
	Would there be changes to environmental values, visual landscape or aesthetic values?	Changes to the landscape during construction would be limited to the dam wall and McCabes Bridge. During operation, the visual amenity of Crams Farm would change minimally, with additional areas of inundation.
	How would nearby residents experience changes in their surroundings during construction?	Council has purchased the majority of properties required for the Proposal. Construction would involve increased traffic, concrete batching, quarrying and night works if required, which would potentially impact on nearby residents for short periods of time. Noise, air quality and traffic assessments have been completed for the EIS.
	Would there be changes to public space (including public open space, public facilities and streets)?	There would be changes to the public space at the dam site and Crams Farm recreational areas. Some facilities, such as the boat ramp, would be inundated and would need to be replaced. Council has identified this as an opportunity to improve facilities and access for disabled individuals.

Potential impact category	Points to consider	Findings of the SIA
Livelihoods	Would the project affect people's ability to sustain themselves through employment or business opportunities?	During construction, the Proposal would benefit the community through allowing more opportunities for employment and resulting in an increase in people attending shops, restaurants and other businesses. The Proposal would not negatively impact on people's ability to sustain themselves through employment and business opportunities. The Proposal should enhance the opportunities for local businesses to provide support services for construction contractors.
	Would the economic benefits and impacts be equally distributed – for example, between local and regional communities?	During operation, the local and regional communities would be the major beneficiary of the Proposal through additional water availability and security.
	Would Aboriginal people have the ability to gain sustenance (spiritual or otherwise) from the land?	After construction, the rights of Aboriginal people to access land would not be changed from the current position. Aboriginal sites and objects to be impacted by the Proposal, and consultation with the local Aboriginal parties are discussed in the Aboriginal cultural heritage assessment of the EIS.
Decision-making systems	Can affected people make informed decisions and feel they can influence project decisions, including elements of project design?	Council has held community information sessions, distributed a newsletter, consulted with stakeholders and local landowners, and maintains a web page for the Clarrie Hall Dam Raising. All of these forums have provided and continue to provide an opportunity for interested parties to provide feedback on the Proposal. All feedback is responded to by Council.
	Are there adequate and responsive grievance and remedy mechanisms in the event of complaints?	Council has held community information sessions, distributed a newsletter, consulted with stakeholders and local landowners, and maintains a web page for the Clarrie Hall Dam Raising. All of these forums have provided and continue to provide an opportunity for interested parties to provide feedback on the Proposal. All feedback is responded to by Council.

5.8.1 Risk assessment

A risk assessment of unmitigated potential social impacts from the Proposal was undertaken according to the following likelihood (Table 5-2), magnitude or consequence (Table 5-3) and significance matrix (Table 5-4).

Table 5-2 Likelihood of social impacts

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

Table 5-3 Magnitude or consequence levels for social impacts

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

Table 5-4 Risk rating matrix

		Magnitude				
		Minimal	Minor	Moderate	Major	Transformational
Likelihood	Almost Certain	Low	Medium	High	Very High	Very High
	Likely	Low	Medium	High	High	Very High
	Possible	Low	Medium	Medium	High	High
	Unlikely	Low	Low	Medium	Medium	High
	Very unlikely	Low	Low	Low	Medium	Medium

A risk assessment of unmitigated potential social impacts is provided in Table 5-5 (positive impacts) and Table 5-6 (negative impacts).

Table 5-5 Risk significance of each positive social impact based on likelihood and consequence

Social impact	Risk significance		
	Likelihood	Consequence	Significance level
Way of life			
Secure water supply maintains quality of life	Almost certain	Moderate	High

Social impact	Risk significance		
Livelihoods			
During operation regional communities would be the beneficiaries of additional water supply which may increase agricultural opportunities	Unlikely	Moderate	Medium
Increased local employment during the construction phase	Possible	Moderate	Medium
Community			
Additional trade for existing business in local communities	Possible	Moderate	Medium
Surroundings			
Increased volume and reliability of water supply to residents in the Tweed Shire	Almost certain	Moderate	High
Opportunity to improve existing facilities and public spaces at Crams Farm recreational area and the dam wall	Moderate	Possible	Medium

Table 5-6 Risk significance of each negative social impact based on likelihood and consequence

Social impact	Risk significance		
	Likelihood	**Consequence**	**Significance level**
Way of life			
Land loss of properties within the dam footprint	Almost certain	Moderate	High
Increase in road traffic during construction raising the risk of motor vehicle accidents	Almost certain	Moderate	High
Increased housing demand impacting lower-income residents already vulnerable to relocation and resettlement	Possible	Major	High
Secure water supply leads to unnecessary water use	Likely	Moderate	High
Increased costs of rent and property values due to increased demand during construction	Possible	Minor	Medium
Increased demand and pressure placed on community and support services	Possible	Minor	Medium
Increases in the price of water rates	Possible	Minimal	Low
Increased demand for local resources raising the price of construction materials	Unlikely	Minor	Low

Social impact	Risk significance		
	Likelihood	Consequence	Significance level
Community			
Decreased access to Clarrie Hall Dam	Likely	Moderate	High
Decreased visual amenity at Crams Farm and Clarrie Hall Dam because of the induction of vegetation and land	Likely	Moderate	High
Decreased access to Crams Farm	Likely	Moderate	
Anxiety regarding perception of increased flooding risk	Likely	Moderate	High
Presence of the construction workforce may impact community cohesion	Possible	Moderate	Medium
Reduced amenity due to noise and air pollution during the construction	Almost certain	Minor	Medium
Accessibility			
Decreased access to Crams Farm and surrounding properties	Almost certain	Moderate	High
Decreased access to Clarrie Hall Dam and surrounding properties	Almost certain	Moderate	High
Increased traffic associated with construction may impact accessibility to properties, essential services and businesses	Almost certain	Minor	Medium
Limited capacity in the immediate area to respond to the demands of construction workers with limited health and education services	Possible	Minor	Medium
Increased demand raising the price of consumables	Unlikely	Minor	Low
Culture			
Cultural and heritage impacts of the Proposal during construction and operation through loss of cultural sites	Likely	Major	High
Inundation of vegetation impacting peoples' values and beliefs associated with the natural environment	Possible	Minor	Medium
Impacts and threats to fauna including iconic species such as the koala	Possible	Minor	Medium
Health and wellbeing			
Increased risk of workplace accidents from use of heavy machinery and undertaking high risk activities	Unlikely	Moderate	Medium

Social impact	Risk significance		
	Likelihood	Consequence	Significance level
Noise impacts, visual amenity changes, traffic and air quality impacts may cause physical or psychological stress	Unlikely	Minor	Low
Decision-making systems			
The approval process may be delayed causing additional cost and anxiety	Unlikely	Moderate	Medium
Conflicting community feedback and opinions	Unlikely	Moderate	Medium

6 Social impact enhancement, mitigation and residual impacts

This chapter provides an analysis of the positive and negative impacts predicted and the residual risk assessment.

6.1 SOCIAL IMPACTS AFTER MITIGATION

Mitigation measures have been applied to the potential positive and negative impacts of the Proposal and the subsequent residual risk identified, as shown in Table 6-1 and Table 6-2 respectively.

Table 6-1 Summary of positive social impacts and their residual risk ratings after applying mitigation measures

Summary of social benefits	Project phase	Nature of the impact	Stakeholders	Unmitigated risk rating	Mitigation measures	Significance rating after mitigation
Way of life						
Secure water supply maintains quality of life	• Operation	Positive	Residents	High	Education about sustainable water use and project need will continue.	Very high
Livelihoods						
During operation regional communities would be the beneficiaries of additional water supply which may increase agricultural opportunities	• Operation	Positive	Local community	Medium	Council will continue to monitor water consumption and water security.	High
Increased local employment during the construction phase	• Construction	Positive	Labour market, local community	Medium	Procurement contracts for detailed design and construction must include requirements to support Indigenous procurement and employ locally as much as possible.	High
Community						
Additional trade for existing business in local communities	• Construction	Positive	Local business	Medium	Engagement with local businesses to identify capacity and perspectives on risks and opportunities associated with population increases is recommended. This information should be provided to new workers about local businesses.	Medium
Surroundings						
Increased volume and reliability of water supply to residents in the Tweed Shire	• Operation	Positive	Local community, residents	High	Council will continue to monitor water consumption and water security.	High

Summary of social benefits	Project phase	Nature of the impact	Stakeholders	Unmitigated risk rating	Mitigation measures	Significance rating after mitigation
Opportunity to improve existing facilities and public spaces at Crams Farm recreational area and the dam wall	• Operation	Positive	Local community, residents	Medium	Council will investigate the potential to enhance recreational uses of the areas surrounding the dam including walking trails and other facilities in line with a catchment management plan to be developed in consultation with the community. The potential to reuse facilities will be investigated during detailed design.	High

Table 6-2 Summary of negative social impacts, mitigation measures and their residual risk ratings after applying mitigation measures

Summary of social impacts	Project phase	Nature of the impact	Stakeholders	Unmitigated risk rating	Mitigation measures	Significance rating after mitigation
Way of life						
Land loss of properties within the dam footprint	• Construction • Operation	Negative	Land owners	High	Council has purchased or is in the process of purchasing impacted parcels of land from landowners and maintains regular communication. Refer to Chapter 6.07 (Social, Land use and Property) for further information.	Low
Increase in road traffic during construction raising the risk of motor vehicle accidents	• Construction	Negative	Residents, local community	High	A traffic impact assessment has been prepared for the EIS and a traffic management plan will be developed for construction that provides traffic impact mitigation measures. Refer to section 6.14 for further information on the traffic impact assessment, including traffic routes outside of the Tweed Shire.	High

Summary of social impacts	Project phase	Nature of the impact	Stakeholders	Unmitigated risk rating	Mitigation measures	Significance rating after mitigation
Increased housing demand impacting lower income residents already vulnerable to relocation and resettlement	• Construction	Negative	Local community, residents	High	It is proposed to employ local workers; however, workers from outside the area will need to be employed. Temporary accommodation is proposed. The detailed design and construction contractor will undertake a housing supply analysis and develop an accommodation plan.	Medium
Secure water supply leads to unnecessary water usage	• Operation	Negative	Residents	High	Education about sustainable water use and project need will continue.	Low
Increased costs of rent and property values due to increased demand during construction	• Construction • Operation	Negative	Residents	Medium	Undertake a housing supply analysis and develop an accommodation plan for the construction workforce.	Medium
Increased demand and pressure placed on community and support services	• Construction	Negative	Local Community	Medium	Support services are expected to have capacity to cater for the small increase in workers.	Low
Increases in the price of water rates	• Construction • Operation	Negative	Ratepayers	Low	Council included the cost of the project in its long term financial plans for a number of years. The planning has been done to ensure the project will not cause a significant increase to residents over CPI.	Low
Increased demand for local resources raising the price of construction materials	• Construction	Negative	Local community	Low	Most materials will be sourced from the adjacent quarry to be reopened specifically for the Proposal. Ethical, sustainable, local and Indigenous procurement processes will be prioritised. A resource plan will be developed that includes the waste hierarchy so that materials are sourced from reuse and recycling unless engineering requirements preclude this.	Low

Summary of social impacts	Project phase	Nature of the impact	Stakeholders	Unmitigated risk rating	Mitigation measures	Significance rating after mitigation
Community						
Decreased access to Clarrie Hall Dam	• Construction	Negative	Local community	High	Maintain access and communicate any changes to road conditions to residents.	Medium
Decreased visual amenity at Crams Farm and Clarrie Hall Dam because of the induction of vegetation and land	• Operation	Negative	Local community	High	Implement a catchment management plan including future recreation opportunities to be developed with the local community.	Medium
Decreased access to Crams Farm.	• Construction	Negative	Local community	High	Maintain access and communicate any changes to road conditions to residents.	Medium
Anxiety regarding perception of increased flooding risk	• Construction • Operation	Negative	Residents, local community	High	Communicate clearly around the outcomes of assessments regarding changes to flood risk. Continue to educate the community that the Proposal is not for flood mitigation.	Low
Presence of the construction workforce may impact community cohesion	• Construction	Negative	Local community	Medium	Onsite accommodation will mean that the workforce is located separate to local communities. Programs and policies to encourage workforce diversity will focus on reducing gender imbalance and support First Nations participation to support community cohesion. Education and inclusivity activities are provided to workers with guidance from local emergency, health and education services.	Low

Summary of social impacts	Project phase	Nature of the impact	Stakeholders	Unmitigated risk rating	Mitigation measures	Significance rating after mitigation
Reduced amenity due to noise and air pollution	• Construction	Negative	Landowners	Medium	Noise and vibration and air quality impact assessments have been prepared for the EIS, and management plans will be developed for construction that provides impact mitigation measures. Curfews will be in place on the works that produce high levels of noise and vibration.	Low
Accessibility						
Decreased access to Crams Farm and surrounding properties	• Construction	Negative	Local community, residents	High	Maintain access to recreational areas for as long as possible. Keep recreational users informed of progress and when the recreational facilities will be updated for use. A catchment management plan will be developed with community involvement. Maintain access and communicate any changes to road conditions to residents.	High
Decreased access to Clarrie Hall Dam and surrounding properties	• Construction	Negative	Local community, residents	High	Maintain access to recreational areas for as long as possible. Keep recreational users informed of progress and when the recreational facilities will be updated for use. Develop a catchment management plan with community involvement. Maintain access and communicate any changes to road conditions to residents.	Medium

Summary of social impacts	Project phase	Nature of the impact	Stakeholders	Unmitigated risk rating	Mitigation measures	Significance rating after mitigation
Increased traffic associated with construction may impact accessibility to properties, essential services and businesses	• Construction	Negative	Local community, residents	Medium	A traffic impact assessment has been prepared for the EIS, and a traffic management plan will be developed for construction that provides traffic impact mitigation measures. Changes to road conditions will be communicated to impacted residents.	Medium
Limited capacity in the immediate area to respond to the demands of construction workers with limited health and education services	• Construction	Negative	Local community, residents	Medium	A health and safety management plan will be prepared for construction that includes an assessment of access to health services. It is not anticipated that the construction workforce would bring families due to the lack of accommodation options for families.	Medium
Increased demand raising the price of consumables	• Construction	Negative	Local community, residents	Low	No mitigation is proposed.	Low
Culture						
Cultural and heritage impacts of the Proposal during construction and operation through loss of cultural sites	• Construction • Operation	Negative	Traditional Owners	High	An Aboriginal cultural heritage assessment has been prepared for the EIS, and extensive consultation has been conducted with the local Aboriginal community. Mitigation measures have been discussed with the local Aboriginal community and incorporated into a management plan for construction and operation.	Medium

Summary of social impacts	Project phase	Nature of the impact	Stakeholders	Unmitigated risk rating	Mitigation measures	Significance rating after mitigation
Inundation of vegetation impacting peoples' values and beliefs associated with the natural environment	• Construction	Negative	Local community, residents	Medium	A biodiversity impact assessment has been prepared for the EIS that includes potential offset areas. A biodiversity management plan will be prepared for construction. Council is proposing to develop areas of vegetation to offset the impacts. Partnering with local Indigenous communities to support Country restoration and ongoing cultural management will be conducted.	Medium
Impacts and threats to fauna including iconic species such as the koala	• Construction	Negative	Local community	Medium	A biodiversity impact assessment has been prepared for the EIS that includes potential offset areas. A biodiversity management plan will be prepared for construction. Construction specific mitigation measures will include use of registered ecologists / fauna spotters and fauna management plans.	Low
Health and wellbeing						
Increased risk of workplace accidents from use of heavy machinery and undertaking high-risk activities.	• Construction	Negative	Workforce	Medium	All workers must hold relevant and up to date qualifications and licenses to undertake designated activities. Safe work plans will be developed for all construction activities and communicated to workers.	Low

Summary of social impacts	Project phase	Nature of the impact	Stakeholders	Unmitigated risk rating	Mitigation measures	Significance rating after mitigation
Noise impacts, visual amenity changes, traffic and air quality impacts may cause physical or psychological stress	• Construction • Operation	Negative	Local community	Low	Noise and vibration, air quality and traffic impact assessments have been prepared for the EIS, and management plans will be developed for construction that provide impact mitigation measures.	Low
Decision-making systems						
The approval process may be delayed, causing additional cost and anxiety	• Planning and Approval	Negative	Local community	Medium	Council will continue to liaise with the NSW Government to support the progress of the EIS submission and response to submissions.	Low
Conflicting community feedback and opinions	• Planning and Approval	Negative	Local community	Medium	Detailed community and engagement processes will be followed including active involvement in developing the design of recreational spaces and Indigenous involvement in Country restoration and management.	Low

7 Monitoring and management plan

This section includes an outline of a monitoring and management plan applicable to construction and operation of the Proposal. The plan would be used to assess the effectiveness of mitigation actions and would help to identify any issues that may require corrective or preventative action in relation to social impacts identified within the SIA.

7.1 SOCIAL IMPACT MANAGEMENT PLAN OUTLINE

A Social Impact Management Plan (SIMP) is to be prepared for construction and operation of the Proposal to:

- enhance and refine mitigation, monitoring and management of social impacts over the life of the Proposal, and explain how unanticipated impacts would be addressed
- set out how the community can provide feedback as part of adaptive management
- describe requirements of performance-based and prescriptive conditions
- set out elements, indicators, baseline values, frequencies, triggers, stakeholders and responses.

The SIMP will contain:

- a program to monitor predicted social impacts against actual impacts, which describes, for each impact area:
  - the desired outcomes in social terms
  - the indicator(s) that will be used to monitor change
  - the targets against which performance will be assessed
  - the methods that will be used to monitor the social impact
  - the frequency of monitoring
  - the people responsible for monitoring
  - the methods that will be used to respond to monitoring results
- any relevant social incident notification and reporting process, including mechanisms to respond to complaints, breaches and grievances or to inform the community. If the conditions of consent require incident notification processes, note this in the SIMP and only describe any additional processes or mechanisms specifically relating to social impacts
- a program for the ongoing analysis of social risks and opportunities arising from the Proposal, including timing and frequency of review
- a description of how to enhance the quality of life within the study area and ensure the Proposal fits into the community
- research to reduce uncertainties, if needed, setting out why further research is needed; when and how it will be carried out (and by whom); and how the results will be used
- a process for reviewing the SIMP to assess if they are still appropriate, and whether any new issues should be included in ongoing monitoring
- a process to release monitoring results and associated information for periodic audit of monitoring activities and for reviewing the plan itself

- Data-sharing mechanisms will be promoted across projects where cumulative impacts are identified.

The SIMP will include management measures documented in the EIS and conditions of approval issued by the NSW Department of Planning, Housing and Infrastructure, should the Proposal be approved.

8 Conclusion

The Proposal would result in positive and negative social impacts during construction and operation. Impacts have been identified through development of a social baseline, stakeholder consultation and a social impact risk assessment. Most of the impacts would be realised through the construction phase of the Proposal, which is forecast to take 2 years. The strength of impacts depends on the proximity of stakeholders to the construction site and access roads, and how stakeholders utilise recreational facilities at the dam and Crams Farm.

The SIA demonstrates that the Proposal would have various impacts on stakeholders. These include changes to accessibility, amenity and community. These impacts are most relevant for stakeholders located near the construction site and access roads and who access the sites of Clarrie Hall Dam and Crams Farm.

Stakeholder engagement demonstrated public support for an effective and immediate start to the Proposal. Stakeholders also highlighted a key relationship between the local community and the natural environment. They communicated a strong connection with the recreational areas at Crams Farm and Clarrie Hall Dam.

Mitigation measures included in this assessment reduce the risk of impacts from the Proposal to acceptable levels.

The region is experiencing strong population growth, which is forecast to continue and is leading to increases in both rental and property prices. As such, the SIA supports Council's Proposal to provide a secure water resource that can support a growing population.

9 References

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