



Newcastle City Council
Richmond Vale Rail Trail
Socio-Economic Impact Assessment

March 2018

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

Executive summary

The Richmond Vale Rail Trail (RVRT) will be a unique and iconic multi-use recreational trail for non-motorised travel benefits. A rigorous socio-economic assessment has been undertaken that shows that the level of expected benefits provided under the RVRT are more than four times the level of expected costs. As demonstrated this project justifies public expenditure as investment in the RVRT will create lasting community benefits for the region.

Project overview

The RVRT would deliver a 32 kilometre shared pathway from Kurri Kurri to Shortland utilising the former Richmond Vale railway alignment.

There would also be a number of branch lines from the main trail alignment that would provide connections to the suburbs of Tarro, Fletcher and Minmi. The trail would be located within the Newcastle, Cessnock and Lake Macquarie Local Government Areas (LGAs). The trail will utilise the following corridors:

1. Shortland to Tarro utilising a Hunter Water Corporation (HWC) easement.
2. Hexham to Minmi utilising the Richmond Vale rail alignment. A connection to Fletcher is proposed utilising a HWC easement.
3. Minmi to Kurri Kurri utilising the Richmond Vale rail alignment.

The path will typically be a 3 metre wide sealed pavement and 4 metres wide where it is expected that a high number of cyclists and pedestrians will interact such as the connection between Shortland and Tarro (Hexham Wetlands). Formal access points will be provided at Minmi, Dog Hole Road, George Booth Drive (at both Tunnel 1 and Surveyors Creek) and Kurri Kurri. These facilities will include parking, toilets, rest areas and water.

This socio-economic impact assessment has been undertaken to support environmental planning and approvals processes for the project.

Socio-economic profile

The assessment considered the local area of influence for the RVRT to be the twelve state suburb areas that intersect with the proposed cycle way and may be directly impacted by the proposal, both during construction and in relation to future use. A regional study area including the Local Government Areas (LGAs) of Newcastle, Lake Macquarie, Cessnock and Maitland was also considered. In 2016 the local area population was 30,951 persons, and 486,000 for the regional area.

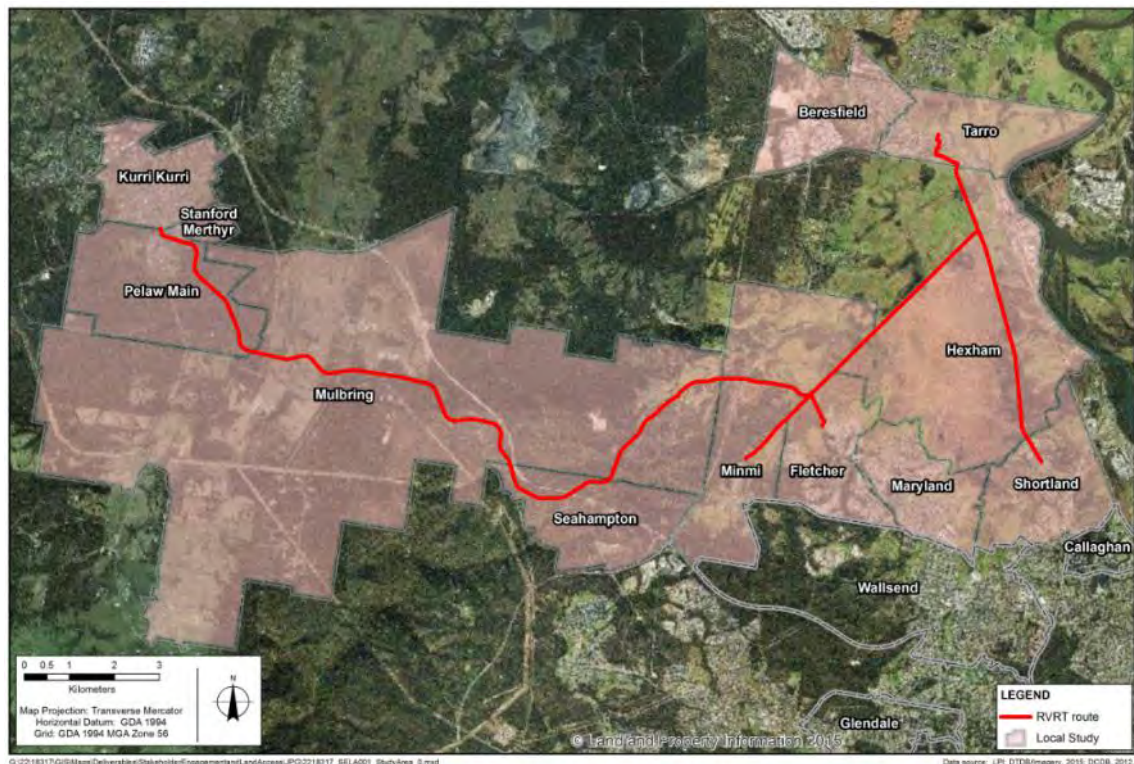


Figure E-1 Local study area

The project links both old and new suburbs with varying characters. Younger families are more common in Fletcher and Seahampton, with older families, and increasingly empty nesters in other suburbs such as Shortland, Kurri Kurri, Pelaw Main, Mulbring, Stanford Merthyr, Tarro and Beresfield. Significant population growth is anticipated in the regional and particularly the local area in coming decades.

Health data indicates that populations in the regional area face significant behavioural health challenges, with the poorest health indicators in Cessnock and Maitland LGA. The RVRT would provide infrastructure to facilitate increased physical activity in the regional area.

The RVRT would be proximal to public schools in Shortland, Minmi and Pelaw Main, and accessible for schools in Maryland, with the potential for the RVRT to be utilised for educational purposes/field trips. Opportunities for local businesses are likely to be located in Shortland, Kurri Kurri, Tarro and potentially Minmi and Fletcher. The RVRT is close to sports fields and facilities at both Shortland (Tuxford Park) and Kurri Kurri (Kurri Kurri sports ground). Walking trails already exist at both ends of the trail (in Hunter Wetlands Centre and Log of Knowledge Park). There is potential for activation and use of these areas by trail users.

The proximity of the RVRT to the University of Newcastle Callaghan Campus creates a significant opportunity for use by commuting students in the local and regional area.

The RVRT has the potential to improve accessibility between areas (perhaps even connecting Seahampton which has limited bus services and connections) as there are no rail services and bus networks and timetables are limited.

Commuter travel in the local area is dominated by a reliance on motor vehicles, a reliance which is greatest in the middle of the route around Fletcher. However less than 40 percent of all trips are commuter related, and average trip lengths are less than 15 kilometres, indicating there is a large potential in the local area for increasing mode change to cycling or walking for both commuter and non-commuter trips.

The RVRT is well supported by State and Local government planning policies. It is consistent with the *Hunter Regional Transport Plan* which includes multiple actions to facilitate and promote cycling, is a priority project in the *Cessnock Cycling Strategy* and would respond to multiple cycle routes noted in the *Newcastle Cycling Strategy and Action Plan*. The RVRT would also be considered an asset to support many of the overall objectives in local government planning including community connectivity, healthier communities, more sustainable travel and recreational assets, improved access to natural areas and to increase tourism.

Consultation

The evolution of the RVRT has been a process that has been cooperatively driven by local government and members of local communities over many years. Consultation for this socio-economic impact assessment has drawn on these evolving consultations, as well as engaging key stakeholders, including those who currently use or have an interest in the area where the route will traverse and those who may in the future.

Future users

Estimating demand for the future use of the RVRT is inherently difficult. Consideration of experience in similar and local trails, local and regional population and other techniques were considered to estimate a future use in the order of 246,385 trips per annum. This approach is outlined in the economic assessment, but included consideration of:

- Experience in Mundaring Shire in Western Australian where 10 percent of users were local but represented 63 percent of trips, and spent on average \$1.44 per trip
- Bicycle counts which found the nearby 15 kilometre Fernleigh Track receives 2,800 trips per week, or ~145,000 trips per annum and is widely considered overused
- Considerable population growth expected in the regional with extensive residential growth also planned and occurring along the route
- Trends in increasing domestic overnight stays and preferences for active and nature based tourism
- Research into cycling which highlights is growth, size, mobility and economic contribution, with potential for events also seen as considerable for the trail
- Potential for commuter use, especially from Tarro to Sandgate, with implications for existing cyclists and in consideration of the proximity to University of Newcastle Callaghan campus

Economic assessment

A benefit-costs analysis (BCA) was undertaken in order to justify public expenditure for the RVRT. A BCA is commonly used to appraise projects to see if they are economically worthwhile (i.e., the project provides an economically efficient use of resources). The analysis provides an economic evaluation of the societal costs and benefits likely to be accrued as a result of the RVRT. Where possible, attempts have been made to quantify all of the benefits and costs for the proposed route.

The decision rules most commonly used in BCA to test the economic justification of a project are the net present value (NPV) and the benefit cost ratio (BCR).

A project is deemed economically worthwhile if the net present value is positive (i.e., the present value of the benefits of the project exceeds the present value of the costs). Alternatively, a project is economically worthwhile if the BCR is greater than 1 (i.e., the present value of the benefits divided by the present value of the costs is greater than 1).

The results of the economic evaluation indicate that a NPV of \$97.3 million would be achieved under the RVRT project. The BCR of 3.87 indicates that the level of expected benefits provided under the RVRT are close to four times the level of expected costs.

The following section identifies the benefits that were either quantitatively or qualitatively assessed to inform the BCA.

Benefits

Increased safety for commuting cyclists between Tarro and Shortland. There have been three cyclist fatalities in six years in this section of the New England Highway. Recent bicycle counts in this section indicate that 23 commuter cyclists use this route daily.

Reduction in disease, morbidity and mortality. The physical health benefits of active use of the trail would be greatest for the inactive and underactive, and by extension in savings in health care costs for individuals and the government. Health data indicates that populations in the regional area face significant behavioural health challenges, with the poorest health indicators in Cessnock and Maitland LGA. The RVRT would provide infrastructure to facilitate increased physical activity in the regional area.

Improved mental health with increased accessibility to natural areas for all ages and abilities. Exposure to nature and natural areas reduces the risk of developing chronic depression and cardiovascular disease. This would be particularly beneficial for children and older people.

Use by regional users will generate economic benefit. Although expenditure per trip by local and regional visitors is generally estimated to be low, evidence from other trails demonstrates that due to their frequent use, the cumulative spend and flow on benefits to the community for local users is significant.

RVRT will attract bicycle tourists and general tourists. The RVRT will diversify current tourism offerings in the region, likely evolving into a significant destination itself and attracting both cycle specific and general tourists. Australians are having more and longer domestic trips and participating in far more outdoor, active, nature-based and cultural activities than before. With the RVRT the regional area is well positioned to capitalise on this growth where an estimated 4.17 percent of jobs and 2.19 percent of the Newcastle LGA economy is generated by tourism, and as high as 13.56 percent of jobs and 7.45 percent of the economy in Cessnock is generated from tourism.

Growth and diversification for local business. Organisations such as the Hunter Wetland Centre and the Richmond Vale Rail Museum would be the main beneficiaries, with other local food and beverage businesses in Shortland, Kurri Kurri, Tarro and potentially Minmi and Fletcher also benefiting from patronage of the RVRT. Opportunities for new businesses or diversified services such as accommodation along the route, bicycle hire and repair services are also anticipated.

Improved journey ambience as a result of improved aesthetic environments from an off-road facility in natural areas and reduced traveller stress resulting from a more reliable and safe route.

Proximity to rail trail expected to enhance property values. Proximity to green infrastructure has been shown to increase property values. Properties proximal to the Fernleigh Track are advertised to highlight their access to the track, and it is likely that this will occur to some degree for properties proximal to the RVRT.

Diverse and equitable active travel access to open spaces and social infrastructure.

Consistent with the *Hunter Regional Plan*, the RVRT would enhance access to recreational facilities and connect open spaces, supporting thriving communities (Goal 3 in the Plan). Additionally, the RVRT is expected to provide greater accessibility for residents and visitors within Newcastle and between Newcastle and the Maitland and Cessnock LGAs, connecting not only recreational and natural areas (including the Hunter Wetlands National Park, Werakata State Conservation Area and Pambalong Nature Reserve), but education (University of Newcastle), health and employment facilities.

Key to this improved accessibility is the safety of the route (being off road and thus free of vehicular traffic risks), and its usability (i.e. a relatively low gradient path making it easily navigable by, and attractive to, people of varied abilities).

The RVRT is likely to be used primarily for recreational purposes (including sporting, fitness, nature and bird watching, tourism and general recreation), but also with some commuting potential. As such, the trail is expected to benefit a diverse cross section of the community, with people at different life stages, with different abilities, and of varied common interests likely to benefit.

With significant population growth anticipated in the regional and particularly the local area, the RVRT is expected to be accessible to a growing catchment and consequently for potential users for both recreation and commuting from adjacent areas. The RVRT would provide equitable access for local residents with varied socio-economic status, with the route passing close to both higher and lower income areas.

Activate local spaces and build social capital. As universally accessible the RVRT would enhance activation of its start, end and access points and create opportunities for interest groups and incidental social interaction between users, reducing social isolation and increasing opportunities for community inclusion.

Daily commuting provides financial and environmental benefits. Users who incorporate cycling as part of their daily commute not only benefit from not having to sit in their car on congested roads, they are also at a financial advantage by not having to incur additional vehicle operating costs. There will be benefits arising as users switch from cars to more active forms of transport like cycling and walking which in turn reduces environmental pollution.

Socio-economic impacts

Some properties would be impacted by land take or by proximity to the route and impacts this has for their privacy and land use. Appropriate measures are expected to mitigate negative impacts whilst the trail also creates some opportunities to provide new services to trail users.

Construction of the trail would generate some short term noise, vibration, traffic and amenity impacts in the local area. In the most part, these would be temporary (in the order of less than a month) as works progress along the route, however these would be longer and more severe at the Tarro overpass and at bridge locations.

Recommended mitigations to avoid or ameliorate negative impacts from the RVRT are:

- Rest areas and trail interpretation locations and content be developed in consultation with local and regional bird observers
- Permit use of motorised cycles/scooter/chairs (adequate to carry birdwatching equipment) and hiring facilities for these at some access points
- Consider lighting of the route (particularly in tunnels and in heavily forested areas) to enhance safety

- Fencing or screening of private properties proximal to the route would be implemented to minimise this overlooking and privacy impact
- Provision of adequate waste facilities should be included to avoid nuisance to other users (e.g., through creation of broken glass and scattered waste) if areas used for social gatherings in the evenings
- Property acquisition would be negotiated with affected land owners in order to reach fair compensation and acquisition arrangements

Enhancement measures

In order to extend local and regional beneficiary groups, to include those with the greatest potential to benefit from the project, a number of enhancement measures are recommended to augment health, access, social connectedness and place activation benefits. The recommended enhancement measures are:

- Explore and promote accommodation options along the trail, including the existing RV friendly site at Kurri Kurri and potentially elsewhere on the route.
- Regional cycle tourism promotion - capitalise on existing and evolving cycle networks in the region to market the region as a cycle tourism destination.
- Joint marketing of the trail and associated “RVRT friendly” businesses to maximise benefits to local business and make users feel welcomed.
- Promote the accessibility features of the RVRT in promotional materials and signage.
- Enhance cycling of the route by local residents and visitors – for place activation, health and social capital by providing easily accessible (automated) bike hire services at key points along the route (e.g. Hunter Wetlands Centre, Kurri Kurri, Fletcher).
- Bike skills workshops and courses aimed at various age groups, including school aged children, mature adults and retirees. Such events could be timed with other events and programs such as Ride to School Days and Seniors Weeks.
- Support the formation of new common interest groups or activity groups such as Heart Foundation walking groups, parent/family cycle or walking groups, birdwatching or seniors walking or cycling groups.

Table of contents

1.	Introduction.....	1
1.1	Background to the proposal.....	1
1.2	Proposed development.....	1
1.3	Surrounding environment.....	5
1.4	Purpose of this report.....	6
1.5	Limitations.....	7
2.	Socio-economic profile.....	8
2.1	Study areas.....	8
2.2	Demographic profile.....	9
2.3	Health.....	13
2.4	Travel and transport.....	14
2.5	Local business.....	17
2.6	Social infrastructure.....	18
2.7	Active travel networks.....	19
2.8	Tourism.....	19
2.9	Implications for the assessment.....	21
3.	Policy and planning context.....	23
3.1	State government.....	23
3.2	Local government.....	25
3.3	Implications for the assessment.....	29
4.	Consultation.....	30
4.1	Issues raised.....	31
4.2	Existing users and uses in the area.....	33
4.3	Survey of potential users of the RVRT.....	34
4.4	How consultation has informed the assessment.....	41
5.	Future users of the trail.....	42
5.1	Expected future use.....	42
6.	Economic assessment.....	48
6.1	Purpose of the benefit cost analysis.....	48
6.2	Assumptions.....	50
6.3	Costs.....	55
6.4	Benefits.....	56
6.5	Results.....	68
7.	Mitigation and impact assessment.....	71
7.1	Place activation.....	71
7.2	Heritage and cultural impacts.....	72
7.3	Property.....	72
7.4	Summary of impacts.....	74

8.	Conclusion and recommendations.....	78
9.	References.....	80

Table index

Table 2-1	Educational achievement and attendance.....	11
Table 2-2	Regional area crime statistics, July 2015 to June 2016	12
Table 2-3	Local area crime statistics, July 2015 to June 2016	12
Table 2-4	Commuting mode share (percentage of area).....	16
Table 2-5	Household travel indicators	16
Table 2-6	Hunter Region tourism statistics	20
Table 2-7	Hunter Region tourism statistics	20
Table 2-8	Visitor expenditure per dollar by LGA	21
Table 4-1	Consultation activities during EIS preparation	30
Table 4-2	Overview of key survey respondents.....	34
Table 4-3	Current frequency of activity by local residents	35
Table 4-4	Purpose for walking/running or cycling in the local area	36
Table 4-5	Frequency of future use of the RVRT by regional residents.....	36
Table 4-6	Purpose for walking/running or cycling in the regional area	37
Table 4-7	Frequency of use of the RVRT by visitors	38
Table 4-8	Current and future cycling.....	39
Table 4-9	Reasons for cycling the RVRT.....	39
Table 4-10	Current behaviour and likely future walking on the RVRT	40
Table 4-11	Current reasons for walking/running.....	40
Table 4-12	Current and likely future birdwatching activity	40
Table 5-1	Current and estimated future cycle commuting on the RVRT	47
Table 6-1	Costs and benefits considered in relation to the RVRT	49
Table 6-2	Economic quantification techniques	50
Table 6-3	Census population data approach (Approach C)	52
Table 6-4	Estimating demand	55
Table 6-5	Infrastructure capital costs.....	55
Table 6-6	Parameters for active transport users.....	56
Table 6-7	Benefit cost ratio and NPV for the RVRT.....	68
Table 6-8	Summary of costs and benefits	68
Table 6-9	Sensitivity analysis.....	70
Table 7-1	Summary of benefits and impacts, enhancements and mitigations	74

Figure index

Figure 1-1	View along the existing trail at Hexham.....	1
Figure 1-2	Richmond Vale Rail Trail alignment.....	3
Figure 1-3	Tunnel 2 near Blue Gum Creek.....	4
Figure 1-4	View of Hexham Swamp.....	5
Figure 1-5	Werakata State Conservation Area.....	6
Figure 2-1	Local study area.....	8
Figure 2-2	Local and regional study areas.....	9
Figure 2-3	Study areas age profile 2016.....	10
Figure 2-4	Health behaviour attributable hospitalisations, 2010-2015.....	14
Figure 2-5	Bus route map – eastern section of the local area.....	15
Figure 3-1	Hunter Plan 2036 - urban release areas.....	24
Figure 4-1	Age of local users.....	35
Figure 4-2	Local user cycling frequency with the RVRT.....	35
Figure 4-3	Age of regional users.....	36
Figure 4-4	Regional user cycling frequency with the RVRT.....	37
Figure 4-5	Age of visitor users.....	38
Figure 4-6	Cycling frequency with the RVRT.....	39
Figure 4-7	Mode of travel to the RVRT.....	41
Figure 5-1	Traffic count data for Fernleigh Track – daily volume.....	43
Figure 5-2	Traffic count data for Fernleigh Track (7-day average).....	44
Figure 5-3	Traffic count data for west of Tarro Rail bridge on New England Highway (7-day average).....	46
Figure 6-1	Fernleigh Track.....	53
Figure 6-2	Hexham Junction to Minmi and Fletcher.....	53
Figure 6-3	Minmi Junction to Kurri Kurri.....	54
Figure 6-4	Shortland to Tarro.....	54

Appendices

Appendix A – Demographic indicators

Appendix B – Local social infrastructure

Appendix C – Community facilities

Appendix D – Strava heat maps

1. Introduction

1.1 Background to the proposal

The Richmond Vale railway is a former rail line that runs from Hexham to Pelaw Main in the Lower Hunter region of NSW. The first section of the railway was opened in 1857 and originally ran from Hexham to Minmi. In 1905 the line was extended from Minmi to the Richmond Main and Pelaw Main Collieries, near Kurri Kurri. A number of small branch lines were also established from the 1920s to the 1950s to service collieries in the Stockrington area to the east of Pelaw Main. Industrial operation of the railway ceased in 1987 following the closure of the collieries in the region. In 1991, a direct passenger line was re-opened along a section of railway from the former Richmond Main Colliery to the former Pelaw Main Colliery. This passenger line continues to operate as a tourism facility managed by the Richmond Vale Railway Museum. The balance of the line has remained closed since 1987 (Richmond Vale Railway Museum, 2016).

An opportunity now exists to utilise the disused sections of the former rail line, along with a disused section of the former Chichester to Newcastle water main corridor, to establish a multi-use recreational trail for non-motorised travel. Once constructed, the trail would extend for approximately 32 kilometres, from Shortland in the east, to Kurri Kurri in the west. There would also be a number of branch lines from the main trail alignment that would provide connections to the suburbs of Tarro, Fletcher and Minmi. The trail would be located within the Newcastle, Cessnock and Lake Macquarie Local Government Areas (LGAs).



Figure 1-1 View along the existing trail at Hexham

1.2 Proposed development

The Richmond Vale Rail Trail (RVRT) would deliver a 32 kilometre shared pathway from Kurri Kurri to Shortland utilising the former Richmond Vale railway alignment. The route is indicated on Figure 1-2 and is generally defined as follows:

1. Shortland to Tarro utilising a Hunter Water Corporation (HWC) easement.
2. Hexham to Minmi utilising the Richmond Vale rail alignment. A connection to Fletcher is proposed utilising a HWC easement.
3. Minmi to Kurri Kurri utilising the Richmond Vale rail alignment.

1.2.1 Cross section and alignment

The path will typically be a 3 metre wide sealed pavement along flat and straight alignments in accordance with shared path standards. It is proposed to widen the path to 4 metres where it is expected that a high number of cyclists and pedestrians will interact, such as the connection between Shortland and Tarro (Hexham Wetlands). Trail grades of less than 2 percent are desirable for walking and cycling.

1.2.2 Access

Formal access points will be provided at Minmi, Dog Hole Road, George Booth Drive (at both Tunnel 1 and Surveyors Creek) and Kurri Kurri. These facilities will include parking, toilets, rest areas and water. This infrastructure has been designed to attract users by providing both functionality and visual appeal to the design. The trail utilises existing facilities at Shortland and Fletcher, being the Shortland Wetlands Centre and the Fletcher Community Centre respectively. Existing water, toilets and parking are available at each location. A café operates at the Wetlands Centre and consultation suggests that a café is likely to be developed by the private sector at Fletcher.

Extension to the University of Newcastle is under consideration by Newcastle City Council separately to this project.

1.2.3 Bridges and other structures

Several bridges will need to be constructed along the path to cross water courses and the New England Highway. Bridge options were assessed in the concept design and include:

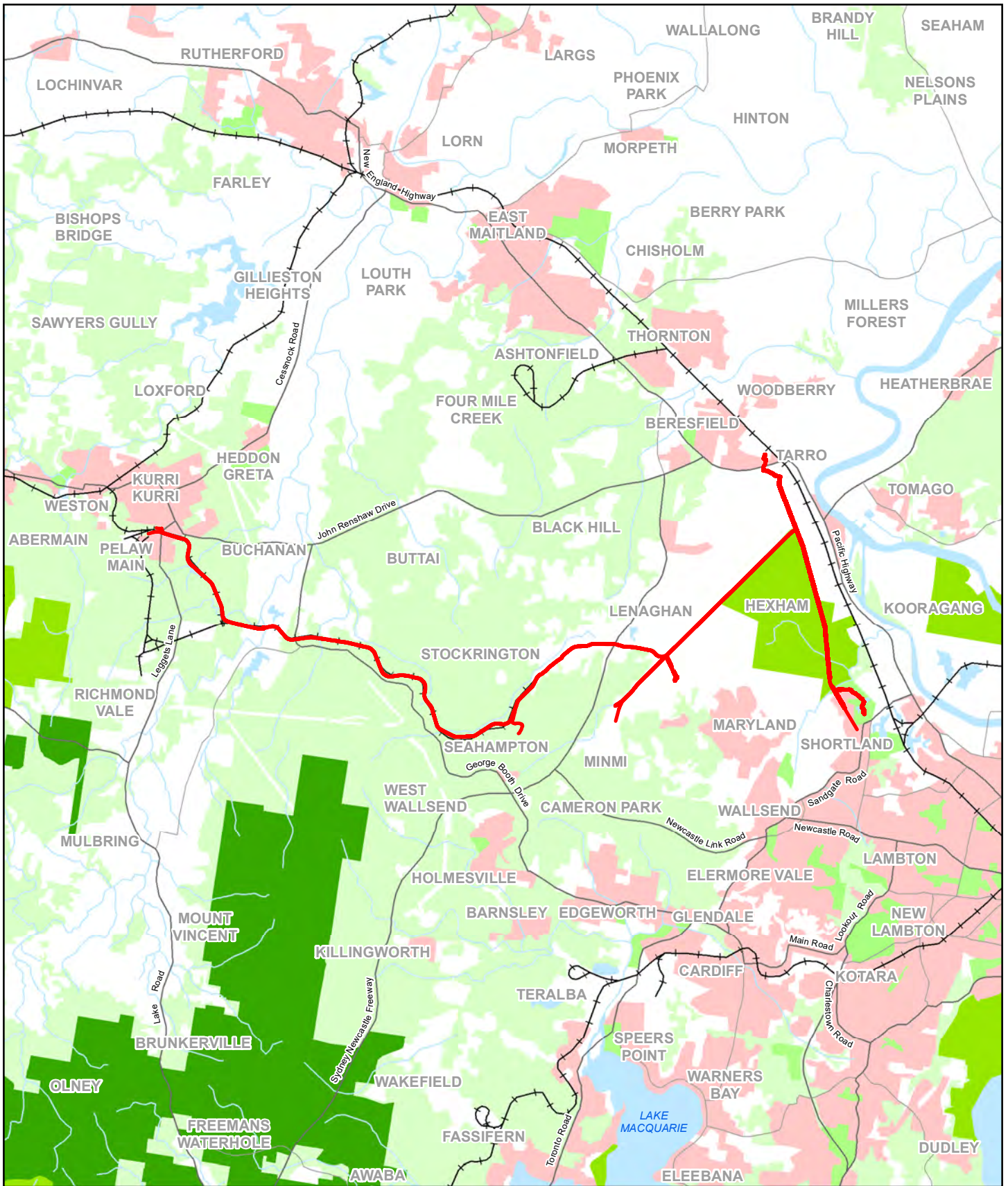
- Multispan low-maintenance concrete structures at Tarro, Ironbark Creek and Surveyor's Creek.
- Lightweight and durable aluminium truss over Fishery Creek.
- An approximately 70 metre suspension bridge over Wallis Creek which has been developed as a cost effective solution which also reduces the environmental impacts to the site. This is expected to be an attractive destination in its own right.

1.2.4 Features

Various observation points, rest areas and shelters have been proposed along the trail. This infrastructure will be important to attract users and provide a pleasant experience along the trail.

A link from the trail into the northern end of the Hunter Wetlands Centre will support universal access to the trail. Toilet facilities are also proposed in the vicinity of the connection, further supporting use by diverse groups.

A number of significant historical items such as three brick lined tunnels have been identified along the trail and where possible these have been retained. It is expected that these items will attract users and where possible access has been provided for pedestrian to easily walk to these features. Where remnant structures require removal, such as Surveyors and Wallis Creek Bridges, signage and signboards are proposed to capture the rich heritage along the trail.

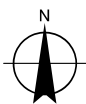


LEGEND

- Proposed route
- Major Road
- Secondary Road
- Railway
- Waterbody
- Watercourse
- + Built Up Area
- + Recreation Area
- State Forest
- National Park
- + Forest

DRAFT

Paper Size A4
 0 1,000 2,000 3,000 4,000
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Newcastle City Council
 Richmond Vale Rail Trail
 Socio-Economic Impact Assessment

Job Number | 22-18317
 Revision | B
 Date | 07 Jun 2017

Richmond Vale Rail Trail Alignment Figure 1-2

© 2017. Whilst every care has been taken to prepare this map, GHD, Geoscience Australia and LPI make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.



Figure 1-3 Tunnel 2 near Blue Gum Creek

1.2.5 Facilities and further attractions

To facilitate diverse and equitable use of the trail the design will include;

- **Viewing and rest areas at key locations** – these will be located to provide rest and shelter for visitors and users (including families with small children and less mobile users) travelling both the length of the route and shorter return trips, from various access points. Rest sites (trail side seating) will be located approximately every kilometre along the route, with larger rest and/or viewing areas off the trail at ten locations along the route (four within the Hexham Wetlands and six along the route or collocated with access points). Locations within the wetlands are being determined in consultation with the Hunter Wetlands Centre and the Hunter Bird Observers Group to ensure they facilitate continued survey of bird populations in the wetlands and are located at key sites for environmental awareness, interpretation and education.
- **Regular access points** – Many visitors will access only sections of the route. Four access points with car parking, universal access and amenities (toilets and water fountains) will be located along the route, in addition to the route end points. These access points will open up the middle sections of the route to diverse user groups. Of note is that two of the western access points would facilitate short return walks of less than 4 kilometres to specific points of interest (e.g. tunnels).
- **A connection to Tarro** – a link route along the pipeline extending to Tarro will make the wetlands accessible from the north and south, creating a link to the suburbs of Tarro and Beresfield and the potential for onward linkages for Maitland communities, including the expanding residential areas near Thornton.
- **Universal access will support diverse user groups** – Universal access will be provided at both ends of the trail and at four other access points along the route. Such access means that less mobile visitors including those in wheelchairs, motorised scooters and families with prams will also have access to the easily traversable trail. Further, boardwalks and viewing platforms would ensure visibility is maintained for people in wheelchairs.

- Whilst current studies are considering only the route from Shortland to Kurri, with extensions into the Hunter Wetland Centre, Tarro, Fletcher and Minmi, the project is envisaged as part of a larger future network of recreational trails with potential extensions, including:
 - Onward to Cessnock and the Hunter Valley vineyards
 - Links to Maitland
 - A connection from Shortland to University of Newcastle Callaghan campus
 - Access into Seahampton
 - Extensions to Pelaw Main and Kurri Kurri
 - Linkage to the Cyclesafe Network in Newcastle
 - Onward connections to the Blue Gum Hills planning precinct

1.3 Surrounding environment

The RVRT commences in Shortland, a low density residential area close to the University of Newcastle Callaghan campus and hosting significant local and regional infrastructure including a private hospital, the Hunter Wetlands Centre and a local commercial and retail precinct (see Section 2.6). The majority of the RVRT study area is located within or immediately adjacent to the Hexham Swamp, which is located within the floodplain of the Hunter River.



Figure 1-4 View of Hexham Swamp

Dominant land uses within the Hexham Swamp are recreation and conservation (Hunter Wetlands National Park). The swamp is of vital importance as a storage area for floodwaters and is also a valuable nutrient sink and nursery for a range of terrestrial, aquatic and marine flora and fauna. The area provides important habitat for at least fifteen internationally protected migratory bird species. Access to the Hunter Wetland National Park is currently very limited with informal access primarily in the east along the pipeline route. Seasonal grazing is also undertaken in some of the outer areas of the swamp. Immediately to the north of the RVRT, across the New England Highway are the residential and industrial suburbs of Beresfield, Tarro (Newcastle LGA), and Woodberry (Maitland LGA). The RVRT here would terminate at Tarro Reserve. The regional centre of Maitland is located 10 kilometres further north. To the east of this section of the RVRT lie the industrialised suburbs of Sandgate and Hexham, which extend along the western bank of the Hunter River.

Land use in the central sections of the proposal site is dominated by low density residential housing within the suburbs of Fletcher and Minmi. These are residential growth areas within the Blue Gum Hills planning district (Newcastle City Council) which extends south to the Newcastle Link Road, and onward to the urban renewal corridor of Glendale to Cardiff (Lake Macquarie City Council). These areas are expected to experience significant population growth in coming years.

To the west, the dominant land uses include agriculture (grazing), and rural-residential housing (as it passes through Stockrington and close to Seahampton), as well as extensive natural areas.

The trail will traverse and link several natural areas along its route, from the state significant Hunter Wetlands National Park at Hexham, skirting the Pambalong Nature Reserve and through the wooded Werakata State Conservation Area in the west. Access to these areas is currently very limited (with the exception of Pambalong Nature Reserve).



Figure 1-5 Werakata State Conservation Area

1.4 Purpose of this report

This report presents an assessment of the socio-economic impacts and benefits of the proposed RVRT. It includes:

- Section 1 – an introduction to the project and its surrounds
- Section 2 – an analysis of the existing social-economic profile of the local and regional area and communities that may be impacted, as well as an overview of the current users of the project route
- Section 3 – a review of planning documents relevant to the project
- Section 4 – outcomes from consultation with residents, councils, key user and likely beneficiary groups, including results of an online survey undertaken to understand current and likely future behaviours of trail users and residents in the region
- Section 5 – an overview of likely future users of the RVRT
- Section 6 – identification of potential social benefits and negative impacts as well as mitigation strategies for each negative impact and recommendations for enhancement strategies to maximise positive social outcomes

1.5 Limitations

This report has been prepared by GHD for Newcastle City Council and may only be used and relied on by Newcastle City Council and partner Councils for this project for the purpose agreed between GHD and the Newcastle City Council as set out in section 1.3 of this report.

GHD otherwise disclaims responsibility to any person other than Newcastle City Council and its partner Councils for this project arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in the relevant sections of this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Newcastle City Council and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

DRAFT

2. Socio-economic profile

This socio-economic profile presents a picture of the people who live, work and recreate in areas potentially affected by the RVRT. The profile defines these areas, how many people live in them, their demographic characteristics and health, how they travel, and the social infrastructure available to them. It also describes the regional economy and the main businesses local to the RVRT. Together, these descriptors provide a basis for understanding potential socio-economic impacts of the project.

2.1 Study areas

The local area of influence includes twelve State Suburbs that intersect with the proposed cycleway and may be directly impacted by the proposal. For the purpose of this report, all twelve suburbs will be referred to as the 'local area', as illustrated in Figure 2-1.

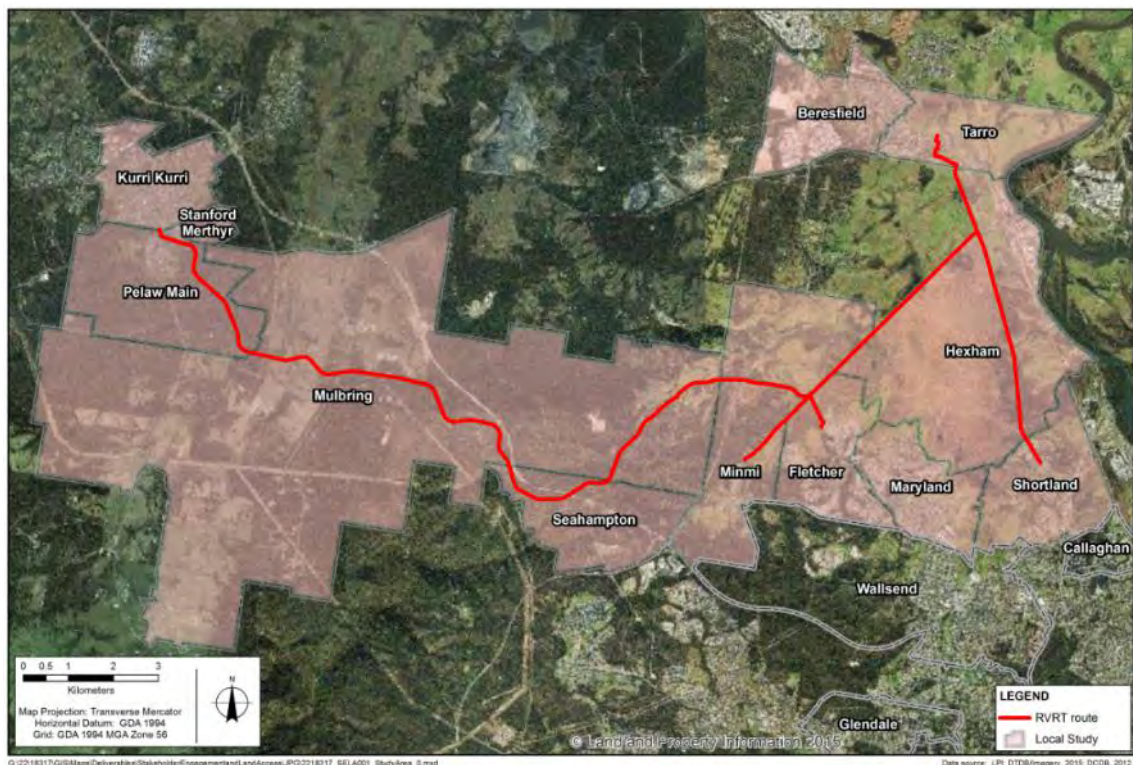


Figure 2-1 Local study area

The local area is situated across three LGAs within the Greater Newcastle Region including Newcastle, Lake Macquarie and Cessnock. For the purpose of this report the regional area has been considered as the wider area of influence and includes these three LGAs and the adjoining Maitland LGA, as it is likely that people from across the four LGAs would be the predominant regional users of the trail.



Figure 2-2 Local and regional study areas

This sections below provides an analysis of the key demographic indicators for the local and regional areas, and has been developed based on 2016 Australian Bureau of Statistics Census data, with additional data referenced as appropriate. Appendix A provides the detailed demographic indicators assessed.

2.2 Demographic profile

2.2.1 Population and age profile

In 2016, 30,951 people lived in the local area, representing roughly 6.4 percent of the regional area's population of around 486,000, Compared to the regional area, the local area is characterised by:

- A younger average age of 37 compared to the regional area, which is 39 years
- Within the local area, the average age is younger within Shortland (33), Maryland (36), Fletcher (31) and Seahampton (35) whereas it is older in Beresfield (40), Tarro (45), Stanford Merthyr (43), Mulbring (43) and Hexham (50)
- The proportion of the population under 18 years is greater in the local area compared to regional area (24.4 percent and 22.3 percent respectively)

The 2016 age profile for the local area compared to the regional area is illustrated in Figure 2-3.

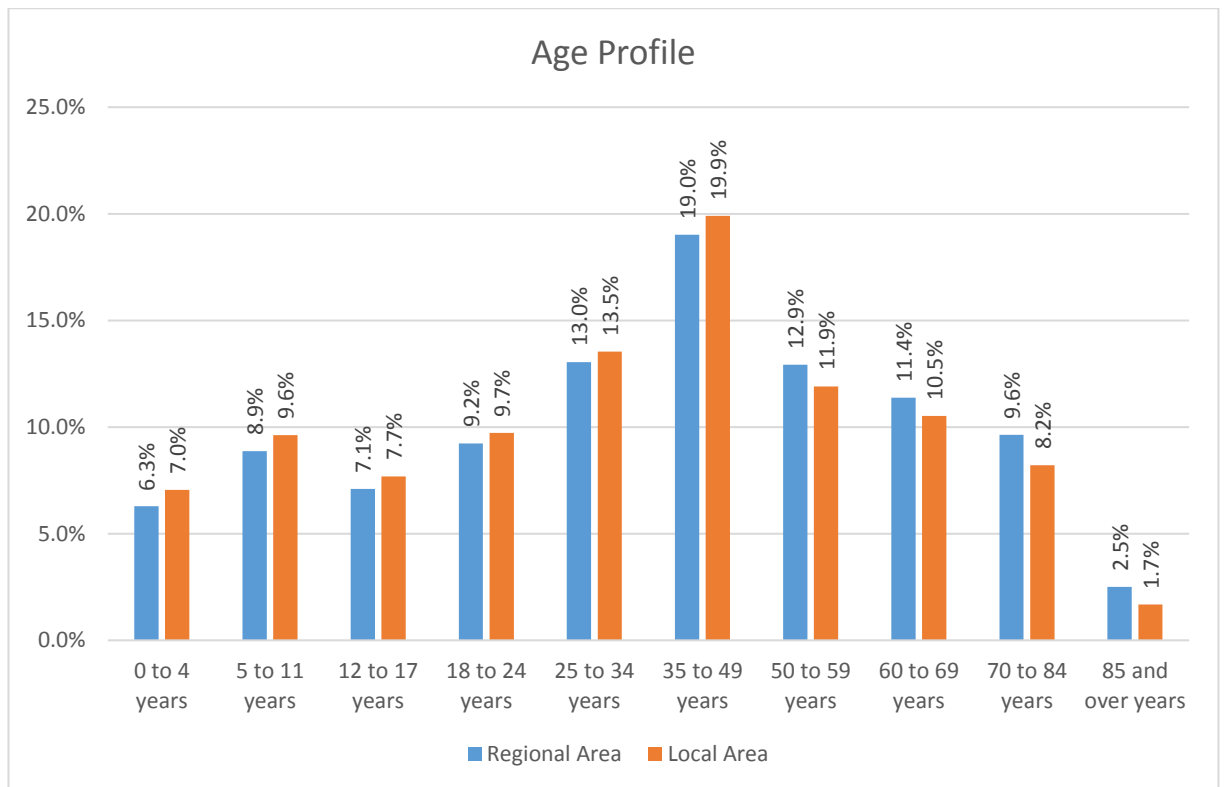


Figure 2-3 Study areas age profile 2016

Source: Australian Bureau of Statistics, Census of Population and Housing 2016. Compiled and presented by GHD.

2.2.2 Cultural diversity

In 2016, the Indigenous population of the local area made up 5.7 percent of the total population. This is slightly higher than the regional area (4.4 percent), with higher representation in Kurri Kurri, Pelaw Main and Hexham (7.6, 7.6 and 8.5 percent) and the lowest representation in Minmi (3.8 percent). The regional and local areas were predominantly English speaking; in the regional area, 89 percent of people speak English only, and 87.9 percent in the local area.

2.2.3 Dwellings and tenure

In the local area, larger households in separate houses were more dominant, with 82.9 percent of properties being separate dwellings with an average household size of 2.7 persons. This is higher than the regional area (74.1 percent and 2.5 percent respectively).

Tenure types in the local area were relatively consistent with the regional area, 72.8 percent of people own their property, either outright or with a mortgage compared to the regional area (70.3 percent). Rentals in the local area make up 27.2 percent of the tenure types compared to 29.7 percent in the regional area.

Within the local area, the suburbs of Shortland, Hexham, Kurri Kurri, Beresfield and Pelaw Main have higher percentages of renters compared to other suburbs.

2.2.4 Households and families

In the local area, 73.5 percent of households are families, which is roughly 2.9 percent higher than the regional area (70.6 percent). Family composition in the local area is relatively consistent with the regional area for most family types. The prevalence of couple families with children is higher in the local area, 44.5 percent compared to the regional area at 42.1 percent.

Couple families without children make up 34.4 percent of families in the local area compared to 38.2 percent in the regional area, similarly, lone person households are higher in the regional area compared to the local area (25.5 percent and 23.2 percent respectively). The dominance of different family types varies within the local area, with younger families in Fletcher and Seahampton, and older families, and increasingly empty nesters in others such as, Maryland, Minmi, Seahampton, Mulbring, and Tarro.

In the local area, group households are 3.4 percent of household types. This is highest in Shortland (9.5 percent), Minmi (3.7 percent) and Beresfield (3.5 percent). The regional area has a higher proportion of group households at 3.9 percent, the higher percent of which are in the Newcastle LGA (6.9 percent) with less than 3 percent in the other LGA's.

2.2.5 Employment and education

In the local area, 59.7 percent of people are actively participating in the labour force, compared to 58.6 percent of the regional area. In the local area there are more people employed full time whereas within the regional area there is a higher number of part time employees. Those employed full time in the local area make up 61.1 percent compared to 59.6 percent and part time are 33.6 percent compared to 35.1 percent. The unemployment rate is consistent across the local area (7.7 percent) and the regional area (7.3 percent).

Table 2-1 demonstrates the distribution of students within the local area and regional area. In the local area 29.8 percent of the population are attending an educational institute of some description, this is consistent with the regional area with 29.6 percent.

Table 2-1 Educational achievement and attendance

Education		Local area (%)	Regional area (%)
Level	Attendance		
Completion of Year 12 (or equivalent)		35.1	40.6
Pre School		7.2	6.6
Infant/Primary School		30.1	28.0
Secondary School		22.5	20.7
Technical or Further Educational Institutes	Full Time	1.6	1.9
	Part Time	5.1	5.0
University or other Tertiary Institute	Full Time	9.6	10.6
	Part Time	4.5	5.1
Other Educational Institute	Full Time	0.4	0.5
	Part Time	1.3	1.3

Source: Australian Bureau of Statistics, Census of Population and Housing 2016. Compiled and presented by GHD.

Within the local area, those attending University or other Tertiary Institutes, either full time or part time, are predominately located in the suburb of Shortland (43.8 percent) whereas suburbs including Hexham, Mulbring, Stanford Merthyr and Pelaw Main all have less than 15 percent each. Minmi has the highest rates of students studying at technical or further education institutes. Similarly, within the regional area, the majority of people attending further education reside within the Newcastle LGA (34.5 percent) compared to Lake Macquarie (20.7 percent), Maitland (19.5 percent) and Cessnock (13.4 percent). This is likely due to the main campus of the University of Newcastle being located in Callaghan, the suburb adjacent to Shortland in the Newcastle LGA and Hunter TAFE campuses throughout the regional area, including Kurri Kurri.

2.2.6 Household income

The average weekly household income in the local area was marginally higher (\$1,376) than in the regional area (\$1,331), however there was a significant range across the suburbs within the local area with Tarro, Hexham, Kurri Kurri and Pelaw Main with averages less than \$1,000/week, and other suburbs more than \$1,000/week. Fletcher had the highest average weekly household income at \$2,296.

2.2.7 Crime and safety

Table 2-2 and Table 2-3 show some of the key crime statistics for the local area in comparison to the regional area and NSW from the NSW Bureau of Crime Statistics and Research (BOCSAR) crime data for July 2015 to June 2016.

Table 2-2 Regional area crime statistics, July 2015 to June 2016

Offence	Rate per 100,000 and 2 year trend			
	Newcastle	Lake Macquarie	Cessnock	NSW
Assault - domestic	429.3 Stable	362.2 Stable	689.4 Stable	388.6 Stable
Assault - non-domestic	661.2 Stable	317.3 Stable	471.1 Up 24.5 percent	415.9 Stable
Theft - dwelling	437.4 Stable	269.4 Stable	482 Stable	277.9 Down 6.6 percent
Theft - vehicle	270 Stable	238.3 Stable	471.1 Stable	175.5 Down 12.6 percent

Source: NSW Bureau of Crime Statistics and Research, 2016

Table 2-3 Local area crime statistics, July 2015 to June 2016

Offence	Rate per 100,000 and 2 year trend					
	Shortland	Maryland	Fletcher	Beresfield	Kurri Kurri	NSW
Assault - domestic	561.5 Stable	294.5 Stable	224.4 Stable	1083.3 Stable	1138.2 Stable	388.6 Stable
Assault - non-domestic	195.3 -	94.2 -	96.2 -	804.7 Stable	894.3 Stable	415.9 Stable
Theft - dwelling	390.6 -	117.8 -	320.5 -	247.6	422.8 Stable	277.9 Down 6.6 percent
Theft - vehicle	366.2 -	94.2 -	192.3 -	1795.1 Stable	357.7 -	175.5 Down 12.6 percent

Source: NSW Bureau of Crime Statistics and Research, 2016. Note: “-“ denotes no trend observed

Overall the tables demonstrate that most crimes have been stable over the last two years. Levels of theft and assault in Lake Macquarie are lower than the NSW average for most offences, but considerably higher for all offences for Newcastle and Cessnock. Most of these rates have remained relatively stable however a notable rise of 24.5 percent compared to the NSW average in non-domestic assault has occurred in the Cessnock LGA. Incidences of offences at the local level are more varied, with certain offences more common in different areas, such as high levels of theft in Fletcher, theft from vehicles in Beresfield, domestic assault in Shortland and all listed offences in Kurri Kurri.

2.2.8 Population growth

The regional area is expected to experience significant growth in the coming decades. The Hunter Regional Plan 2036 (see section 3.1.1) estimates the Hunter region growing from 732,400 in 2016 to 862,250 in 2036, an increase of 17.8 percent.

The City of Newcastle forecasts its population to grow by 16.6 percent to 180,643 by 2036, representing an average annual growth rate of 0.62 percent (Forecast.id 2013). As indicated in the Hunter Regional Plan, outside of the Newcastle city centre, much of this growth is proximal to the RVRT, within the Blue Gum Hills Precinct (including Fletcher, Minmi and Maryland, extending south towards Glendale, and connecting to the urban renewal corridor of Glendale to Cardiff), areas to the east of Kurri Kurri and just to the northwest of Taro and Beresfield near Thornton in Maitland LGA (see Figure 3-1). While Shortland-Sandgate is expected to experience minimal growth of only 0.2 percent per year, and Tarro-Beresfield 0.32 percent, annual population growth to 2036 in Fletcher-Minmi is expected to average 4.65 percent, or a more than three-fold increase by 2036 (Forecast.id 2013).

The project links both old and new suburbs with varying characteristics. Younger families are more common in Fletcher and Seahampton, with older families, and increasingly empty nesters in other suburbs such as Shortland, Kurri Kurri, Pelaw Main, Mulbring, Stanford Merthyr, Tarro and Beresfield. The RVRT would provide a useful and accessible recreational resource for both younger families and an ageing population.

With significant population growth anticipated in the region and particularly the local area, the RVRT is expected to be accessible to a growing catchment and consequently for potential users for both recreation and commuting from adjacent areas. The RVRT would provide equitable access for local residents with varied socio-economic status, with the route passing close to both higher and lower income areas.

2.3 Health

As noted in *Towards a Healthier Hunter*, the region has high rates of behavioural health risk factors:

- Over half of the Hunter residents aged 18 years and over do not eat the recommended two serves of fruit each day and nine in ten do not eat the recommended five serves of vegetables each day.
- Although the smoking rates have declined in recent years, one in seven Hunter residents aged 18 years and over still smoke.
- Over two thirds of Hunter residents aged 18 years and over do not meet the recommended amount of physical activity required each week.
- High risk alcohol consumption was 30 percent greater in the region compared to the nation.
- Seven in every ten Hunter residents aged 18 years and over are classified as overweight or obese (Hunter Medical Local, 2014).

These risk factors are also evident in higher than state average rates of hospitalisation for health behaviour related conditions.

Whilst average obesity related hospitalisations have been decreasing in recent years in NSW, they are higher than the state average in each of the project LGA's with no apparent improvement trend. In New South Wales in 2013/14 the rate of hospitalisations per 100,000 people due to high body mass related issues was 453 for high blood pressure related issues it was 1,115.1, and for smoking attributable conditions it was 542. (HealthStats 2016). For each of these indicators, Lake Macquarie is the closest to the state average, and appears the healthiest in the project region, whilst Maitland and Cessnock show the highest incidents of health behaviour related hospitalisations, significantly above the state averages (see Figure 2-4).

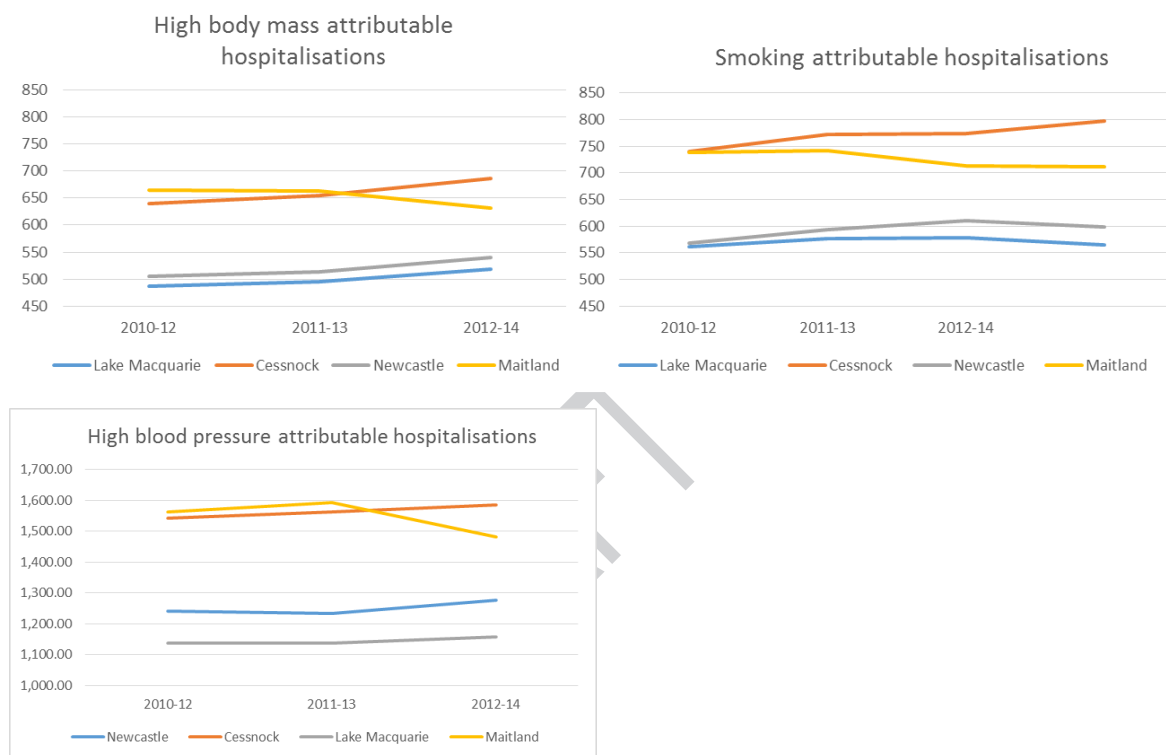


Figure 2-4 Health behaviour attributable hospitalisations, 2010-2015

Source: Centre for Epidemiology and Evidence. HealthStats NSW. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. (Accessed 26 October 2016).

Health data indicates that populations in the regional area face significant behavioural health challenges, with the poorest health indicators in Cessnock and Maitland LGA. The RVRT would provide infrastructure to facilitate increased physical activity in the regional area.

2.4 Travel and transport

Within the local area heavy rail train stations are located at Hexham, Tarro and Beresfield. The next closest train stations are located within surrounding suburbs including Warabrook, (the station at the University of Newcastle), Sandgate and Maitland.

There are several bus services operating within sections of the local area. However, there are no existing bus routes that travel through the entire project area with an average of 3-4 buses and/or train journeys required to travel from Shortland to Kurri Kurri. The standard bus routes include route 235 which runs from Maryland to the Newcastle CBD, route 230 travels through Shortland, starting from Newcastle CBD and finishing in Wallsend.

Bus route 160 travels from Wallsend to Cessnock and operates six days a week express to Cessnock via Newcastle University, Kurri Kurri and Stanford Merthyr along the M15 Hunter Expressway. Bus route 267 occasionally runs through Seahampton but usually runs no further than West Wallsend.

Bus route 166 travels from Kurri Kurri to Maitland via Pelaw Main and Standford Merthyr during weekdays only. Additionally, starting at Cessnock, bus route 163 travels through Kurri Kurri and Pelaw Main with a final destination of Morisset. This bus operates twice every day, with varying times between weekdays and weekends.

Routes 106 and 107 travel through Shortland, starting at Jesmond and looping into the University and Newcastle CBD. The 260 and 261 buses also accommodate the University, taking passengers from Minmi through Maryland and Fletcher to the University. Both buses operate seven days a week averaging one to two trips every hour.



Figure 2-5 Bus route map – eastern section of the local area

Source: Newcastle Buses region guide for Newcastle region (OMBSC 5)

Census data indicates that in the local area, 94.7 percent of residents own one or more cars, which is greater than 93.0 percent in the regional area. Within the local area, the lowest level of car ownership is within the Shortland suburb area with 91.0 people owning one or more motor vehicles compared to 100 percent in Fletcher.

Dependence on motor vehicles is slightly higher in the local area compared to the regional area; in the local area 94.1 percent of people traveling to work by car, either as the driver or passenger, compared to 91.7 percent in the regional area. The RVRT has the potential to improve accessibility between and within the local area (perhaps even connecting Seahampton which has limited bus services and connections) as there are no rail services and bus networks and timetables are limited. The improved active travel infrastructure is also expected to increase commuter cycling both in the local and regional area, with the RVRT presenting an alternate travel route for current cyclists along the New England Highway and the Hunter Expressway.

Active travel rates for commuters also vary across the local and regional area. The regional area averaged 1 percent mode share for cycling and 2.6 percent for walking to work, however, this varied across the LGAs as illustrated in Table 2-4. The local area demonstrated lower rates of active travel with 0.3 percent cycling and 1.3 percent of commuters walking, with the highest rates in Beresfield, Pelaw Main and Kurri Kurri.

Table 2-4 Commuting mode share (percentage of area)¹

Area	Walking	Cycling	Public transport	Vehicle
Regional area LGA's				
Newcastle	4.7	2.2	4.8	88.3
Lake Macquarie	1.7	0.5	2.7	91.9
Cessnock	2.1	0.2	1.2	93.7
Maitland	1.7	0.3	2.3	93.0
Selected local area suburbs				
Tarro	0.5	0.7	2.1	95.2
Beresfield	3.0	0.6	3.8	89.9
Shortland	1.2	0.4	3.1	92.6
Minmi	1.6	0.0	0.0	95.3
Fletcher	0.6	0.5	1.4	93.9
Pelaw Main	2.7	0.0	0.9	92.1
Kurri Kurri	2.3	0.0	1.3	94.3
Maryland	0.7	0.4	2.3	94.2
Standford Merthyr	1.5	0.0	0.0	93.9

Source: Australian Bureau of Statistics, Census of Population and Housing 2016. Compiled and presented by GHD.

The census data noted above refers to modes of travel to work, while the Household Travel Survey presents a more holistic picture of travel habits. As indicated in Table 2-5, travel for commuting or work related purposes accounts for only between 18 and 28 percent of all trips, with social/ recreation, shopping and servicing passengers together accounting for the bulk of trips. Whilst close to eight or nine out of each ten trips are by car (as driver or passenger) a higher proportion of overall trips are made by walking, with higher numbers linked to lower average travel distances in the more built-up areas of Lake Macquarie and Newcastle.

Table 2-5 Household travel indicators

	Cessnock LGA	Lack Macquarie LGA	Maitland LGA	Newcastle LGA
Trips per person (weekday)	3.5	3.7	3.85	4.5
Trips per person (weekend)	3.3	2.9	2.6	3.6
Average trip length (km)	13	9.2	12.8	7.2
Purpose (%)				
Commute and work related	28	18	25	22
Education/childcare	7	7	9	7
Shopping	17	20	18	17
Personal business	7	9	4	6
Social recreation	22	25	21	28
Serve passenger	16	18	19	16
Other	4	3	4	4
Mode (%)				
Car (as driver or passenger)	90	82	85	79

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

Notes: Percentages do not add up to 100%, as worked at home and "other" are not included in the table. Suburbs with 100% vehicle or 100% vehicle/other/working from home are not shown

	Cessnock LGA	Lack Macquarie LGA	Maitland LGA	Newcastle LGA
Public transport	2	3	4	3
Walk only	7	13	9	16
Other	0	2	2	2

Source: 2014/15 Household Travel Survey (HTS) based on five years of pooled data (June 2010 to June 2015) and using 2011 ABS LGA Boundaries

Whilst cycling rates are so low as to be included with “other”, other data sheds light on cycling activities. The Cessnock Cycle Strategy data drew on survey data which indicates that the most common destinations for cyclists are recreational areas, visiting friends and family, going to shops and restaurants and going to sporting facilities. The most common reasons for cycling were fun/recreation (41 percent) and exercise (38 percent) (Cessnock City Council 2014).

The Cycle Safe Network note that high cycle mode share can occur where infrastructure is present such as in Maryville, close to the Throsby Creek Cycleway, with 5.2 percent of commuters travelling by bicycle (Cycle Safe Network, undated).

Commuter travel in the local area is dominated by a reliance on motor vehicles, a reliance which is greatest in the middle of the route around Fletcher. However less than 40 percent of all trips are commuter related, and average trip lengths are less than 15 kilometres, indicating there is a large potential in the local area for increasing mode change to cycling or walking, and that the RVRT could facilitate some of this mode change for both commuter and non-commuter trips.

2.5 Local business

There are a number of businesses in the local area proximal to the proposed cycle route, as discussed below and illustrated in Appendix B.

Within Shortland, at the eastern most point of the route, the most relevant business is the Hunter Wetland Centre as well as a number of convenience and retail food outlets/cafes that are located largely on Sandgate Road. The Hunter Wetland Centre currently hosts approximately 30,000 visitors a year providing a nature based educational and recreational facility for the enjoyment and appreciation of wetlands. Approximately one quarter of visitors to the centre are school groups. The centre also provides function and small conference facilities that are frequently used by local community and environmental organisations. The centre operates a visitor centre, café and kayak hire and facilitates bike and Segway hire (hosted by the centre but owned by external operators). The RVRT will have a universal access link directly into the Centre in its north, drawing users through the wetlands and to its facilities and amenities.

Maryland and Fletcher are new urban release areas that are predominantly residential with two local retail centres, one located off Minmi Road in Fletcher (including Aldi) and one within a village shopping centre further east on Minmi Road in Fletcher (including a Coles and several speciality retailers) which is also close to preschools, health and other services. These facilities are located roughly 1.5 kilometres from the proposed spur to Fletcher.

The quieter locality of Minmi has a liquor store and takeaway shop 700 metres uphill from the RVRT, and a hotel further along the road. The Blue Gum Hills Regional Park (BGHRP) is located between Minmi and Fletcher along Minmi Road and hosts the Tree Top Adventure Park, a commercially operated outdoor activity business. The BGHRP has approximately 100,000 visitors annually, with around 30 percent of these visitors to the Tree Top Adventure Park. Visitors are primarily from within the region, representing close to 25 percent of the total regional population. BGHRP has picnic areas, amenities, multiple tracks and is currently considered to be operating close to capacity.

Kurri Kurri has the largest commercial precinct in the local area located on Lang Street and Barton Street in the centre of Kurri Kurri. This area is located roughly 600 metres from Log of Knowledge Park on the corner of Stanford Street and Mulbring Street, which marks one of the starting points of the route. Directly opposite Log of Knowledge Park is a former hotel (pub) which has gone out of business. Other business such as the local bowling club and a McDonalds are located approximately 400 m away on Victoria Street. There are no bicycle shops in Kurri Kurri, however the local hardware shop does sell some basic spare parts.

The Richmond Vale Rail Museum is a not for profit organisation committed to the preservation and promotion of history of the Richmond Vale Rail. It runs a museum at its Richmond Vale base (approximately one kilometre from the RVRT at its closest point at Richmond Vale) and operates historic steam train rides from there to Pelaw Main Colliery (approximately 600 metres from the RVRT Kurri Kurri end).

This review indicates that the RVRT could bring patronage benefits to a number of existing business/organisations, including the Hunter Wetland Centre, businesses in the Kurri Kurri commercial centre, Minmi, Shortland and the Richmond Vale Rail Museum.

2.6 Social infrastructure

The following provides a summary of the community facilities currently serving the local area proximal to the RVRT, and of relevance for potential users of the RVRT. The locations of these facilities are illustrated in Appendix B and listed in Appendix C.

There are a number of schools and religious organisations within Shortland. The main commercial strip is along Sandgate Road, with multiple cafés and food and beverage businesses and pharmacies. Shortland Public School, a preschool and the Hunter Valley Private Hospital are also close to the start of the RVRT (and would flank a likely extension to the RVRT along an existing easement).

Newcastle University Callaghan campus is located nearby and to the south of the RVRT. The campus has over 17,500 students and promotes active travel to its student and staff body, with cycling rates increasing from around 2 percent in 2014 to 4 percent in 2016. The University offers multiple incentive programs to encourage cycling and active transport use including the development of active travel guides for various areas, providing end of trip facilities (secure storage, change and showering facilities), free repair and maintenance services onsite, cycling skills and cycle repair workshops, and programs for affordable access to bicycles (including safety equipment).

The Tarro Public School and Tarro Reserve are close to the RVRT spur endpoints, with some food and beverage shops located in Tarro and Beresfield on Anderson Drive.

As noted in section 2.5, the main commercial areas in Fletcher-Minmi, including children's and health services are on Minmi Road, approximately 1.5 kilometres from the RVRT spur into Fletcher. The Fletcher community centre is however a short distance (approximately 300 metres from the RVRT spur and adjoined by evolving outdoor sports fields and facilities that are intended to service the growing population. Glendore Public School and Bishop Tyrrell Anglican College are located approximately 2.5 and 1.5 kilometres by road respectively from the Fletcher RVRT spur.

The Minmi Fire and Rescue Station is located adjacent to the Minmi RVRT Spur, and the Minmi Public School is approximately 450 metres to the south. The only social infrastructure in Seahampton is a Fire Station.

The RVRT end point in Kurri Kurri is close to the Pelaw Main Public School, Pelaw Main heated pool, the Kurri Kurri Sports Ground, the Kurri Kurri District Hospital (approximately 1.75 kilometres away) and Pelaw Main Colliery (part of the Richmond Vale Rail Museum). The Log of Knowledge end point park is also the location of a local bush walking path. The Kurri Kurri visitor information centre and many of the murals for which Kurri Kurri is well known are located in the commercial town centre approximately 800 metres from the RVRT. Of note also is that Kurri Kurri is an RV (recreational vehicle) friendly town and has recently established a short term overnight parking area in the Kurri Kurri Sports Ground with an RV dump point. Parking at the site is currently being formalised, and has been developed in response to observed demand.

The RVRT would be proximal to public schools in Shortland, Tarro, Minmi and Pelaw Main, and accessible for schools in Maryland, with the potential for the RVRT to be utilised for educational purposes/field trips. The RVRT is close to sports fields and facilities at Shortland (Tuxford Park), Kurri Kurri (Kurri Kurri sports ground), Tarro Reserve and Fletcher. Walking trails already exist at both ends of the trail (in Hunter Wetlands Centre and Log of Knowledge Park). There is potential for further activation and use of these areas by trail users.

2.7 Active travel networks

Connections to onward active travel networks are currently limited, however regional visions for cycle networks in the longer term include onward connections to the University of Newcastle from Shortland, through Minmi to BGHRP and Blue Gum Hills development precinct, from Kurri Kurri to Cessnock and on to the vineyards and also from Kurri Kurri to Maitland. There is currently a short shared walking and cycling path at Log of Knowledge Park in Kurri Kurri which will link to the RVRT.

Residential developments in the Fletcher and Minmi areas are currently integrating active travel networks into their planning to facilitate links to the RVRT and onward to the BGHRP.

2.8 Tourism

Tourism numbers in the Hunter region have varied over the last seven years, initially declining since a 2011 high and gradually returning, and marginally increasing in 2016 to numbers of visitors and expenditure above 2011 levels. The Hunter currently expects to host close to 10 million visitors per year (Destination NSW, 2016).

Domestic day trippers represent around two thirds of all visitors, and their numbers increased by 13.6 percent between 2015 and 2016. The value of tourism in terms of expenditure is however dominated by domestic overnight visitors, who represent around one third of all visitors but over 60 percent of expenditure, compared with just 30 percent for day trippers.

Council economic strategies recognise tourism as an opportunity to develop (see section 3.2), both in terms of numbers of visitors and diversity of offerings, and thus types of visitors to attract.

It is estimated that 4.17 percent of jobs and 2.19 percent of the Newcastle LGA economy is generated by tourism, and as high as 13.56 percent of employment and 7.45 percent of economic output in Cessnock is generated from tourism (Remplan 2016). Much of the economic benefits of tourism are created through the accommodation and food service industry which delivers a proportionally larger share of employment relative to economic output than other sectors such a manufacturing and construction. In Cessnock this is particularly important as accommodation and food services is the largest employing industry in the LGA.

Table 2-6 Hunter Region tourism statistics

	2011	2012	2013	2014	2015	2016	YE Jun 16 vs. YE Jun 15
Number of visitors (000)							
Domestic overnight	3,102	2,817	2,995	3,057	3,240	3,371	4.10%
Domestic day trippers	6,166	6,198	5,401	5,615	5,762	6,544	13.60%
International overnight	154	128	133	144	164	153	-7.10%
Total visitors	9,269	9,014	8,396	8,673	9,002	9,915	10.10%
Visitor expenditure (\$million)							
Domestic overnight	1,363	1,231	1,238	1,291	1,461	1,425	-2.50%
Domestic day trippers	557	615	520	627	633	694	9.50%
International overnight	175	173	144	167	177	175	-1.40%
Total	2,095	2,019	1,902	2,085	2,271	2,294	

Source: Destination NSW – Travel to the Hunter Tourism Region (year end June 2016)

Table 2-7 Hunter Region tourism statistics

Location	Domestic Day	Domestic Overnight	
	Average Spend per Trip	Average Spend per Trip	Average Spend per Night
Newcastle	99	387	152
Lake Macquarie	103	305	103
Cessnock	113	547	242
Maitland	119	309	137

Source - REMPLAN, 2016. Compilation from Economic Profiles for Newcastle, Lake Macquarie, Maitland and Cessnock LGAs

Tourism expenditure indicates that domestic overnight visitors may spend more than double that of day trippers in Cessnock and Newcastle. However this spend also varies across the Hunter with close to a third of expenditure spent on accommodation and food services in Newcastle and Lake Macquarie and close to two thirds in Cessnock, where wine tourism is prevalent. This large proportion of visitor expenditure on accommodation and food services is relevant for the RVRT as these are the industries likely to benefit from rail trail visitors.

Table 2-8 Visitor expenditure per dollar by LGA

Industry	Visitor Expenditure Per Dollar		
	Newcastle	Lake Macquarie	Cessnock
Accommodation & Food Services	\$0.32	\$0.29	\$0.63
Transport, Postal & Warehousing	\$0.18	\$0.14	\$0.05
Retail Trade	\$0.12	\$0.21	\$0.05
Education & Training	\$0.11		
Ownership of Dwellings	\$0.05		\$0.09
Arts & Recreation Services	\$0.05		\$0.05
Manufacturing		\$0.10	\$0.12

Source - REMPLAN, 2016. *Compilation from Economic Profiles for Newcastle, Lake Macquarie, Maitland and Cessnock LGA's*

The most recent Tourism Research Australia report also notes that Australians are travelling in record numbers (with increases in the number of domestic overnight stays for holidays also increasing 14 percent), and that domestic overnight visitors are participating in far more outdoor, active, nature-based and cultural activities than before (Tourism Research Australia, 2016). Of note with regard to the future tourism offerings on the RVRT is that cycling had increased 23 percent, and bushwalking and rainforest walking had increased 13 percent. Visiting heritage buildings and sites increased 22 percent, and exercise, gym or swimming had also increased 31 percent on the previous year. The report noted that overall the number of domestic overnight stays for holidays also increased 14 percent.

The RVRT would create a tourism opportunity which could deliver on a number of these experiences, including cycling, heritage, and bush-rainforest walking activities.

Events and concerts are important also for the region, with events across both regional and urban areas. The City of Cessnock estimates events in the Hunter Valley during summer 2013/14 attracted approximately 167,800 attendees in the City of Cessnock. Modelling indicated this generated a gross annual stimulus of \$2.2 million and a total value added impact of \$27.7 million, representing approximately 1.3 percent of the total Gross Regional Product for the City of Cessnock (Cessnock City Council, 2015).

The RVRT would have the potential to further diversify this event offering through hosting cycling or walking/running events.

2.9 Implications for the assessment

- The project links both old and new suburbs with varying characters. Younger families are more common in Fletcher and Seahampton, with older families, and increasingly empty nesters in other suburbs such as Shortland, Kurri Kurri, Pelaw Main, Mulbring, Stanford Merthyr, Tarro and Beresfield.
- With significant population growth anticipated in the regional and particularly the local area, the RVRT is expected to be accessible to a growing catchment and consequently for potential users for both recreation and commuting from adjacent areas. The RVRT would provide equitable access for local residents with varied socio-economic status, with the route passing close to both higher and lower income areas.

- Communities at either end of the trail have higher incidence of rental housing, and of tertiary students (university students in Shortland and technical college students in Pelaw Main and Stanford Merthyr).
- Health data indicates that populations in the regional area face significant behavioural health challenges, with the poorest health indicators in Cessnock and Maitland LGA. The RVRT would provide infrastructure to facilitate increased physical activity in the regional area.
- The RVRT would be proximal to public schools in Shortland, Minmi and Pelaw Main, and accessible for schools in Maryland, with the potential for the RVRT to be utilised for educational purposes/field trips.
- Opportunities for local businesses are likely to be located in Shortland, Kurri Kurri, Tarro and potentially Minmi and Fletcher.
- The RVRT is close to sports fields and facilities at both Shortland (Tuxford Park) and Kurri Kurri (Kurri Kurri sports ground). Walking trails already exist at both ends of the trail (in Hunter Wetlands Centre and Log of Knowledge Park). There is potential for activation and use of these areas by trail users.
- The proximity of the RVRT to the University of Newcastle Callaghan Campus creates a significant opportunity for use by commuting students in the local and regional area.
- The RVRT has the potential to improve accessibility between areas (perhaps even connecting Seahampton which has limited bus services and connections) as there are no rail services and bus networks and timetables are limited.
- Commuter travel in the local area is dominated by a reliance on motor vehicles, a reliance which is greatest in the middle of the route around Fletcher. However less than 40 percent of all trips are commuter related, and average trip lengths are less than 15 kilometres, indicating there is a large potential in the local area for increasing mode change to cycling or walking, and that the RVRT could facilitate some of this mode change for both commuter and non-commuter trips.
- Higher than state average levels of assault and theft (from dwellings and vehicles) along the route present issues for safety and security for residents close to the trail and users of the trail.
- Over two thirds of Hunter residents aged 18 years and over do not meet the recommended amount of physical activity required each week, and seven in every ten are classified as overweight or obese. Rates of hospitalisation stemming from health related behaviours are much higher than the state average, especially in Cessnock and Maitland.
- In the local area, 93.3 percent of residents own one or more cars, this is greater than 90.9 percent in the regional area. Within the local area, the lowest level of car ownership is within Shortland suburb area with 89.4 percent of people owning one or more motor vehicles compared to 99.6 percent in Fletcher.
- Tourism is a large contributor to the regional economy, with growth in overnight visits and visits related to nature based and active holidays also showing significant growth. The RVRT would be well positioned to serve this growing tourism market, and diversity tourism offerings in the region.

3. Policy and planning context

The RVRT aligns with a number of local, regional and State government planning instruments aimed at delivering increasingly sustainable and liveable communities and economies. This section outlines how the RVRT aligns with these key planning documents from the local councils, and the State Government *Hunter Regional Plan* and *Hunter Regional Transport Plan*. A summary of the relevant aspects of these documents is presented below.

3.1 State government

3.1.1 Hunter Regional Plan 2036

The Plan has been developed to guide the NSW Government's land use planning priorities and decisions over the next 20 years. It is intended as a framework to guide subsequent and more detailed land use plans, development proposals and infrastructure funding decisions. The Plan also identifies priorities for each council to guide further investigations and implementation. The RVRT aligns with several of the objectives of the Plan and is specifically identified as an action to be advanced. The RVRT is expected to contribute to:

- **Goal 1 – The leading regional economy in Australia.** Direction 9 – Grow tourism in the region.
 - Enable investment in infrastructure to expand the tourism industry, including connections to tourism gateways and attractions
 - Encourage tourism development in natural areas that support conservation outcomes
- **Goal 3 – Thriving communities.** Direction 17 – Create healthy built environments through good design.
 - Enhance the quality of neighbourhoods by integrating recreational walking and cycling networks into the design of new communities to encourage physical activity
- **Goal 3 – Thriving communities.** Direction 18 – Enhance access to recreational facilities and connect open spaces.
 - Facilitate more recreational walking and cycling paths including planning for the Richmond Vale Rail Trail and expanded inter-regional and intra-regional walking and cycling links, including the NSW Coastal Cycleway

The Plan identifies urban release areas closest to Newcastle are centred around Minmi, surrounding Blue Gum Hills Regional Park to the north, west and south, and extending into Glendale south of the Newcastle Link Road, connecting to the urban renewal corridor of Glendale to Cardiff. Of relevance to the RVRT, significant urban release areas are also located in Maitland just to the northwest of Taro and Beresfield.

The Plan also identifies planning and delivery of regional cycleway links along the RVRT as one of the five priorities for the Lower Hunter.

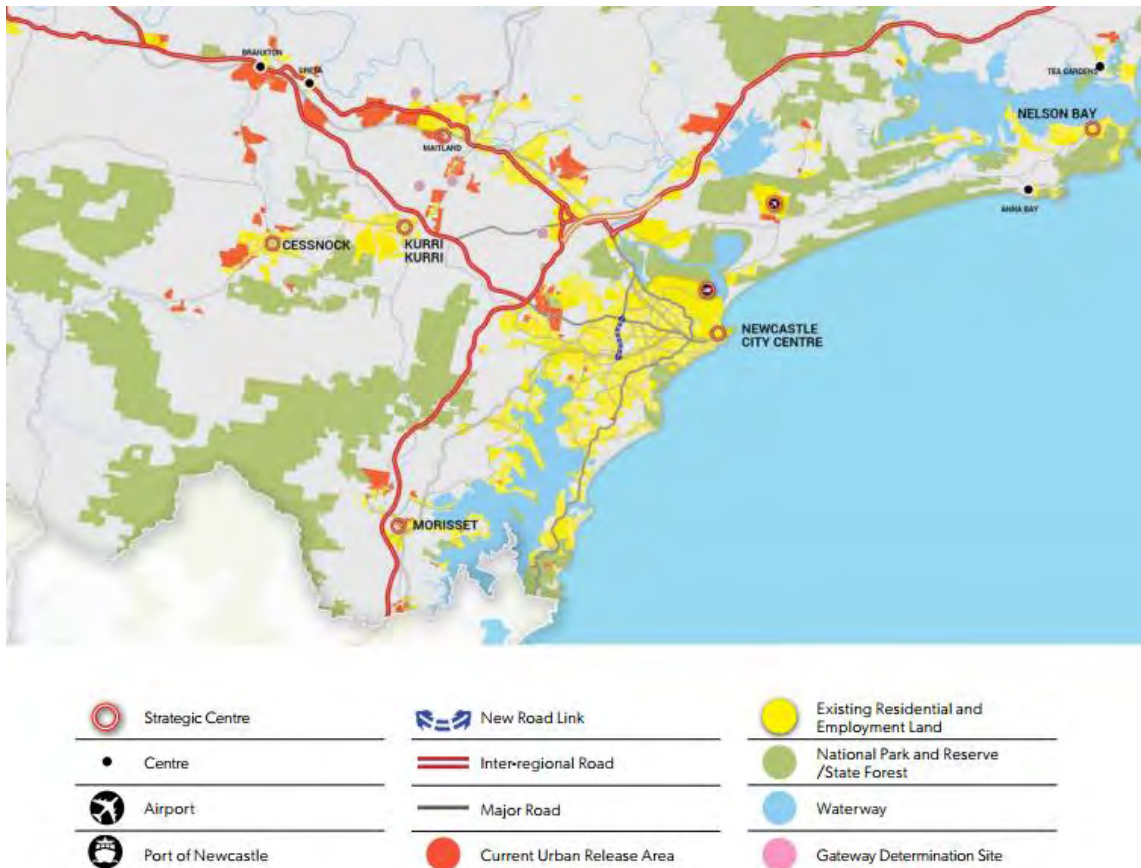


Figure 3-1 Hunter Plan 2036 - urban release areas

Source: Hunter Regional Plan 2036

3.1.2 Hunter Regional Transport Plan, 2014

The *Hunter Regional Transport Master Plan* was developed to support the *NSW Long Term Transport Master Plan (2012)*. The Plan outlines specific actions to address the unique transport challenges for the Hunter region, recognising the key transport challenges include an ageing population, high levels of private car use, and balancing freight and passenger transport needs

Of relevance to the RVRT, the Plan outlines the importance of walking and cycling, with almost 90 percent of people in regions living within easy walking or cycling distance of a local centre, with access to shops, schools, and workplaces. The Plan identifies a number of actions to support walking and cycling, including;

- Promoting and facilitating walking in 2 kilometre catchments, and cycling in 5 kilometre catchments.
- Cycling Town Program that aims to deliver bicycle infrastructure in regional areas to rapidly increase cycling rates locally. The Plan intends to implement this in two regional centres where the infrastructure would link a range of destinations within easy cycling distance from their residential centres.
- Improving information about cycling and walking routes and facilities.

The Plan also notes the importance of cycling infrastructure in supporting tourism. As the RVRT is expected to facilitate both local travel, commuting and tourist use, it reflects the objectives of some of the active travel actions in the Plan.

3.2 Local government

This section reviews council policies, strategies and plans for each of the four regional Councils. Although there is a potential future merger between Newcastle City Council and Port Stephens Council, this area has not been reviewed as it is not within the regional study area.

3.2.1 Community Strategic Plan – Newcastle 2030, 2013

Newcastle 2030 expresses the shared community vision for a smart, liveable and sustainable city and a ten-year strategic plan. The aim of this Plan is for a better, more resilient Newcastle that builds on strengths and sets a positive future direction. The Plan addresses social, environmental, economic and civic issues and goals in an inclusive framework.

The Community Strategic Plan outlines:

- The community's shared vision for a smart, liveable and sustainable city
- Seven strategic directions for Newcastle
- 23 objectives to be achieved over the next 10 years
- Strategies and partnerships to fulfil these objectives

The vision and strategic plan were developed through an extensive collaborative engagement process based on social justice principles to invite as many people as possible to be part of the ongoing conversation.

Elements of the Plan which relate to active travel, and are relevant to the RVRT include:

- Creating and developing transport networks that are well connected and convenient, with walking, cycling and public transport required to be viable options for the majority of trips
- Cycling will play an increasingly important role in helping meet the goals of sustainable, connected and active communities
- An active health and wellness program supported by three levels of government

The Plan recognises the role of various actors in increasing active travel, with the State Government playing a leading role in promoting the health benefits of active travel, and employers delivering important end of trip facilities for cyclists and walkers.

The RVRT would support the Plan in connecting communities, and providing infrastructure for more active communities.

3.2.2 Newcastle City Council Economic Development Strategy 2016-2019, 2015

The Newcastle City Council developed this strategy with a vision that the City of Newcastle will have a healthy, diverse and resilient economy with strong industries that are linked to national and international markets.

The strategy focuses on five key areas:

- The role as the capital of the Hunter Region
- The development of key infrastructure
- Supporting business growth and employment
- Encouragement of innovation and creativity
- Developing the visitor economy of Newcastle

3.2.3 Newcastle Cycling Strategy and Action Plan, 2012

The Newcastle Cycling Strategy and Action Plan represents Council's commitment to enhance cycling in Newcastle. The overall objective of the Plan is to make cycling a safe and attractive travel option to facilitate more people to cycle more often as their preferred mode of transport.

Strategies and action included in the Plan are:

- Provide a safe, continuous and convenient bicycle network
- Enhance support infrastructure, such as end of trip facilities
- Promote cycling, special events and bike routes through a variety of media
- Encourage and support cycling as a mode of transport for Council staff
- Foster staff development
- Advocate for improved bicycle accommodation on public transport and measures to support active transport
- Facilitate active transport in new development
- Develop measures to monitor implementation of actions and progress towards nominated targets

The Plan includes a works plan that identifies several segments of the proposed RVRT, including cycleway needs between Minmi and Hexham, Minmi and Beresfield, and in the vicinity of Hexham Bridge.

3.2.4 Community Strategic Plan 2023 – Cessnock City Council, 2013

Cessnock 2023 expresses the shared community vision for a thriving, attractive and welcoming Cessnock community. The Plan outlines community values and key responsibilities for local government, state and federal government as well as the community itself. The Plan addresses social, economic, environmental, and civic issues. Some of the desired outcomes of the Plan include:

- A connected, safe and creative community
- A sustainable and prosperous economy
- A sustainable and healthy environment
- Accessible infrastructure, services and facilities
- Civic leadership and effective governance

3.2.5 Cessnock Economic Strategy and Action Plan, 2014

The Cessnock community and Cessnock City Council developed the Plan to achieve positive economic development to:

- Initiate and promote growth and investment
- Provide a diverse range of employment opportunities
- Diversify the economic base of the LGA, reducing dependence on a few key activities
- Assist in securing sustainability and social equity
- Enhance and strengthen the overall amenity, resilience and liveability of the community

Objective 2.3 of the Strategy includes increasing tourism opportunities and visitation in the area, and identifies this objective as having a medium to strong growth potential. With relevance to the RVRT, the strategy also identifies the need to grow nature and activity based tourism.

3.2.6 Cycling Strategy - Cessnock City Council, 2016

The Cessnock Cycling Strategy outlines Council's direction and framework to establish a bicycle friendly environment over the next 20 years.

The vision for cycling in Cessnock is to create a safe, attractive and accessible cycleway network that improves the community's connections with key destinations and each other and encourages residents of all ages to use their bicycle for recreation and everyday transport.

The vision is supported by four strategic objectives:

- Provide a cycling environment that is safe, secure and encourages residents to cycle without fear of accident or injury
- Provide a cohesive and integrated bicycle network that is easy for cyclists to use
- Integrate cycling into Council's planning processes
- Promote awareness of cycling amongst the community and road and path user groups

The strategy recognises the central roles of the RVRT in increasing connectivity between Cessnock, Newcastle and Lake Macquarie LGAs.

3.2.7 Community Strategic Plan 2013 – 2023 – City of Lake Macquarie, 2013

The Community Strategic Plan 2013-2023, represents the main priorities of the community, and sets out the long-term strategies developed to respond to these priorities.

Community members provided extensive input into the Community Strategic Plan 2013-2023 through a variety of engagement processes.

Some of the key strategic directions and objectives for the City of Lake Macquarie, as outlined in the Plan include:

- Need to provide a balanced range of well-maintained and accessible recreation, community, education, sporting, arts and cultural facilities across the city
- Ensure recreational facilities, services and programs meet the growing needs of the community

3.2.8 Cycling Strategy 2021 – Lake Macquarie City Council, 2012

The Lake Macquarie City Council Cycling Strategy 2021 outlines a vision for the community to have a much stronger and diverse cycling culture where cycling will no longer be viewed as a marginal activity but rather a viable and attractive alternative for everyone, regardless of age, gender and ability.

The Strategy sets a target for increasing cycling trips by residents from a 2012 level of 1 percent of all travel trips to 5 percent by 2022.

Strategies and actions included in the Strategy are:

- Ensuring there is a high level of awareness of cyclists on the roads and streets of Lake Macquarie
- All road users are courteous and considerate to each other
- A network of safe and comfortable bicycle routes connects Lake Macquarie residents with key destination both within the municipality and adjoining municipalities

- Good end-of-trip facilities at key destinations make cycling an easy and attractive form of transport
- Providing children with a safe and familiar environment to develop the skills, knowledge and experience to make cycling an attractive form of transport throughout their lives

3.2.9 Maitland Community Strategic Plan 2013 – 2023, 2013

The Maitland Community Strategic Plan 2013-2023, was founded on sustainability principles. The purpose of the Plan is to meet the Maitland community's needs without compromising the ability of future generations to be able to meet theirs.

Some of the key goals for Maitland, as outlined in the Plan include:

- Aiming for intergenerational and intra-generational equity
- Achieving a balance between economic activities and conservation of the environment
- Conserving biological diversity
- Identify and explore key challenges and opportunities facing Maitland over the next ten years and beyond
- Establish high level strategies for moving in the right direction
- The strategy also identifies the community's need for better connectivity from train stations, shops and rural areas

3.2.10 Maitland Bicycle Plan and Strategy 2014

The *Maitland Bicycle Plan and Strategy 2014*, expresses the importance of cycling from a sustainability perspective as it is a viable alternative to the use of private cars or public transport. Along with walking, cycling is the only readily available mode of transport that does not produce emissions.

Maitland City Council envisions that there will be an improvement to the amenity for all local residents and visitors to the LGA, as well as improvement to health.

The specific objectives for the Plan are to:

- Provide an overarching strategy for provisions of bicycle facilities within the LGA
- Increase use of bicycles within the community
- Encourage alternative methods of transport
- Improve community health and provide safer routes to school
- Reduce the number of missing links and severance within the existing bicycle network
- Reduce the number of bicycle accidents
- Improve connectivity of the cycle network with other transport modes, primarily bus, car, train and pedestrians
- Complement existing and planned cycleways

3.3 Implications for the assessment

The RVRT is well supported by State and Local government planning policies. It is consistent with the *Hunter Regional Transport Plan* which includes multiple actions to facilitate and promote cycling, is a priority project in the *Cessnock Cycling Strategy* and would respond to multiple cycle routes noted in the *Newcastle Cycling Strategy and Action Plan*. The RVRT would also be considered an asset to support many of the overall objectives in local government planning including community connectivity, healthier communities, more sustainable travel and recreational assets, improved access to natural areas and to increase tourism.

DRAFT

4. Consultation

Consultation has been intrinsic to the development of the RVRT, with many stakeholders involved in the evolving concept and progression of the project. The socio-economic assessment has sought to capture information about key stakeholders and understand their expectations, concerns and ambitions for the project through a range of approaches. The key stakeholder groups engaged for the socio-economic assessment, and the method of engagement are noted below.

Table 4-1 Consultation activities during EIS preparation

Activity	Stakeholders	Detail
Phone/face to face interviews	Existing and potential user groups	<p>15 interviews, either face to face or via telephone were held with existing and potential users during November 2016, including:</p> <ul style="list-style-type: none"> • NPWS • Richmond Vale Rail Museum • Newcastle University • Hunter Wetlands Centre • Towns with Heart/Kurri Kurri Visitor Centre • Kurri Kurri Business Chamber • Newcastle Cycleway Movement • Richmond Vale Rail Inc • Kurri Kurri Mongrels • Hunter Bird Observers Group • Kurri Kurri Motorcycle Club • Boomerang Bike Hire <p>The purpose of the interviews was to discuss the perceived socio-economic impacts (positive and negative), opportunities, and construction impacts of the proposal on potential user groups.</p>
Face to face meetings	Impacted landholders	<p>Six meetings were held with directly impacted landholders.</p> <p>Meetings provided residents with the opportunity to talk directly to the project team and provided an opportunity to discuss the potential impacts of the proposal.</p>
Survey	All	<p>A short survey, consisting of 14 quantitative questions was prepared using SurveyMonkey® to gain a better understanding of the current activities of the local and regional community to understand how the proposal might be used in the future.</p> <p>The survey was available between 3 November and 1 December 2016 and 890 responses were gathered during this period.</p>
Workshop	Council staff from within the regional area and NPWS	<p>A workshop with local government staff was held:</p> <ul style="list-style-type: none"> • Tuesday 1 November 2016, 9:30 am – 12:00 pm • Shortland Wetland Centre <p>The workshop provided a project overview and summary of social impact assessment findings to date.</p> <p>Between 20 and 30 representatives attended the workshop from the following organisations:</p> <ul style="list-style-type: none"> • Newcastle City Council • Lake Macquarie City Council • Cessnock City Council • Maitland City Council • NPWS

Activity	Stakeholders	Detail
Community information sessions	All	<p>Community information sessions were held at the following locations, dates and times:</p> <ul style="list-style-type: none"> Thursday 3 November 2016, 4:00 pm to 7:00 pm, Fletcher Community Centre Tuesday 8 November 2016, 4:00 pm to 7:00 pm, Beresfield Public School Wednesday 9 November 2016, 4:00 pm to 7:00 pm, Kurri Kurri Business Enterprise Centre Thursday 10 November 2016, 4:00 pm to 7:00 pm, Shortland Wetland Centre <p>The community information sessions provided residents and interested community members the opportunity to talk directly to the project team.</p> <p>Attendee numbers ranged from 6 to 43 at each session with 98 community members in total attending the information sessions. 21 completed feedback forms were received.</p>
Community contact and feedback	All	<p>Contact mechanisms were established to enable the community and stakeholders to provide feedback and ask us questions about the proposal via:</p> <p>project information line: 1800 066 243</p> <p>email: community.input@ghd.com</p> <p>All contacts were recorded in a Consultation Manager database set up for the project. 58 phone contacts were made and 67 emails received.</p>
Bulk mail out	Nearby residents	<p>A two page information brochure providing an overview of the proposal and the details of the public consultation process was mailed to over 500 households and properties in the suburbs of Shortland, Tarro, Fletcher, Minmi and Kurri Kurri, in advance of the drop in sessions.</p>
Advertisement	All	<p>Advertisements were placed in:</p> <ul style="list-style-type: none"> Newcastle Weekly on 27 October 2016 Cessnock Advertiser on 26 October 2016 Newcastle Herald Weekender on 29 October 2016 Lower Hunter Star on 29 October 2016 <p>The purpose of advertisements was to provide information about the display locations and information sessions.</p>
Symposium with Newcastle University	University	<p>Council presented an overview of the proposal to the University at a Symposium.</p>
Council website	All	<p>Details of the proposal are provided on the Council website.</p> <p>http://www.newcastle.nsw.gov.au/Council/News/Projects-Works/Richmond-Vale-Rail-Trail</p>

During the socio-economic assessment, attempts were also made to contact bushwalking and orienteering groups and the nearby Sikh Gurdwara (temple) at Shortland with no response.

4.1 Issues raised

The key issues raised during consultation are outlined below.

4.1.1 Benefits

- Tourism potential – diversify tourism offerings and attract new visitors
- Opportunity to boost the profile of Kurri Kurri and enhance its offerings

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

- More visitors to the Hunter Wetland Centre and the wetlands and greater awareness of the value and nature of the wetlands
- Economic benefits for nearby businesses – Wetland Centre (including café and bike and canoe hire), food and beverage stores in Shortland, Kurri Kurri and potentially Minmi
- Health benefits both locally and regionally, but especially in the growth area of Fletcher-Minmi
- Increased safety for Maitland commuters who could avoid dangerous Hexham intersection
- Commuting from Kurri Kurri a great alternative to the Hunter Expressway, also potential for people in Tarro and Beresfield
- Route is proximal to university, with a connection to the university could be good for student commuting
- Boost profile and visitor numbers to Richmond Vale Rail Museum
- Construction employment

4.1.2 Opportunities

- Associated services – cycle shops, hire, repairs/parts, luggage delivery for cyclists etc.
- Potential to cooperatively promote cycle tourism in the region
- Opportunities for Seahampton being close to one of the most scenic points
- Accommodation (including farm stays and RV friendly sites) linked to/close to the RVRT
- Tourism opportunities related to horse riding in some parts of the trail
- Fixed or mobile food and beverage or cycle services related to the track
- Events such as fun runs, distance, family and endurance races and events
- School environmental education and learn to ride route
- Collaboratively market local businesses with the RVRT
- Provide loop tracks –multiple suggestions for Martins Road/Kooyang, within Minmi and Fletcher, to Blue Gum Hills Regional Park etc.
- Potential for links to other areas – onwards to vineyards, Cessnock, Maitland, the Blue Gum Hills Regional Park, to Glendale and Fernleigh tracks. Connect with the CycleSafe network
- Signage to reduce straying off the track, also to interpret and raise awareness of the value and nature of the wetlands and of the historical and heritage values along the route
- Provision of shelters and resting spaces along the route – to support users travelling shorter distances, promote observation and enjoyment of the environment

4.1.3 Issues

- Emergency access, especially in the wetlands and tunnels
- Waste management
- Continued access for bird surveys
- Distances to walk/cycle may discourage a largely older demographic bird watching community (local and regional/interstate visitors) who currently access by vehicle
- Need accessible amenities

- Manage frequency of events to avoid impacts to neighbours
- Privacy and property impacts for nearby neighbours
- Costs of maintenance and mechanisms for management of the trail
- Managing unauthorised access – threats to users safety and to nearby neighbour impacts
- Opportunity loss for rail reinstatement on old line
- Construction transport and noise impacts
- Impacts to users of the Hunter Wetland Centre and Log of Knowledge park during construction
- Access/use for dog walking and horse riding

4.1.4 Network proposal

The Cycle Safe Network (CSN) comprises representatives from Newcastle Cycleways Movement, University of Newcastle, Bicycle NSW and the Heart Foundation. The CSN has developed a proposal that would see a system of family safe, easily navigated and useful shared paths across the Lake Macquarie and Newcastle local government areas. The Proposal would involve the connection of 90 kilometres of existing paths with 140 kilometres of newly built paths to create a network that makes walking and cycling for short trips (less than 2 kilometres for walking and 10 kilometres for cycling).

The network would be located within 500 metres of 93 of the 125 regional schools. The proposal notes that amongst the benefits of the proposal will be an increase in tourism directly related to the CycleSafe Network and its connection to the proposed Richmond Vale Rail Trail.

4.2 Existing users and uses in the area

Consultation has indicated that the RVRT will traverse diverse habitat and landholdings with some existing uses and users of the trail and adjacent lands who may be impacted by construction and operation of the trail. Current users of the route include:

- **Walkers/joggers** – commonly in areas close to Minmi and Kurri Kurri where accessible.
- **Cyclists and mountain bikers** – commonly in areas close to Kurri Kurri as far as is accessible.
- **Motorcycle riders** – recreational use by the Kurri Kurri Motorcycle Club at Stockrington. The club has a membership of around 100, however use of the area is limited by lack of legal access. The RVRT will traverse their leasehold and may isolate part of the land.
- **Birdwatchers and nature enthusiasts** – particularly in the Hexham wetlands, but also in Pambalong Nature Reserve. Currently limited access to the Werakata State Conservation Area. The Hunter Bird Observers Group is the main local and regional user group with around 330 members of a primarily older demographic. Seasonal rare migratory shore birds in Hexham wetlands commonly attract birdwatchers regionally and from interstate.
- **Rural land uses including small farms** – a number of rural land holdings in the Hexham wetlands along the Tarro extension and in Lenaghan and Stockrington, some of whom use the route for stock grazing and incidental uses.
- **Residential land developers** – a number of urban residential land release areas are adjacent to the route in Minmi, with some directly impacted individual properties potentially reducing their yield potential.
- **4WDs** – illegal use of bushland tracks.

- **Illegal waste dumpers** – extensive illegal dumping of waste, primarily commercial building materials, along accessible areas of the route.
- Existing walking and cycling is also evident along sections of the RVRT alignment and within the local area from informal sources such as web based user recorded mapping system Strava (see Appendix D).

Permissible access varies along the route, with many users without legal access to the areas they use.

4.3 Survey of potential users of the RVRT

A brief online survey was distributed throughout the region to understand the likely users and use of the RVRT and also current behaviour related to active travel and outdoor activities.

As discussed at the beginning of this section, the survey was promoted through local government social media channels and shared through diverse interest groups including; local and regional cycling groups, bushwalkers, birdwatchers, and active travel interest groups from the University of Newcastle.

Respondents were asked about their current behaviour (frequency and purpose) with regard to walking/running, cycling and birdwatching. Respondents were provided information about the proposed RVRT and asked to indicate their expected use of the RVRT. Data was also collected about respondent's place of residence, age and gender.

There were 890 responses to the survey, with almost 10 percent (86 responses) of those from postcodes within the local area and 52 percent from within the regional area. Respondents lived as far away as Perth. Women represented 28 percent of respondents.

The survey cannot be considered to be representative of potential users of the RVRT, however it does provide insight into some of the future users and their current and probable future behaviour. As cycling groups were some of the main distributors of the survey, they are heavily represented in the survey with 71 percent of local, 84 percent of regional and 93 percent of tourist respondents cycling at least monthly.

Local and regional respondents were defined by postcodes consistent with the local and regional study areas. Tourists were defined as those outside the regional area.

Table 4-2 Overview of key survey respondents

	Local	Regional	Tourist
Number of respondents	86	467	337
Female respondents	22%	24%	35%
Average distance from the RVRT	2km	13km	N/A
Percent current cyclists	83%	90%	94%
Percent current walkers	93%	92%	93%
Percent current birdwatchers	50%	44%	49%

4.3.1 Local users

The majority of respondents in the local areas were aged between 35 and 69 years. The age data also illustrates that most respondents participate in both walking/running and cycling activities (see Figure 4-1), at least rarely (see Table 4-3). The proportion of local users who also go birdwatching increases in older age brackets.

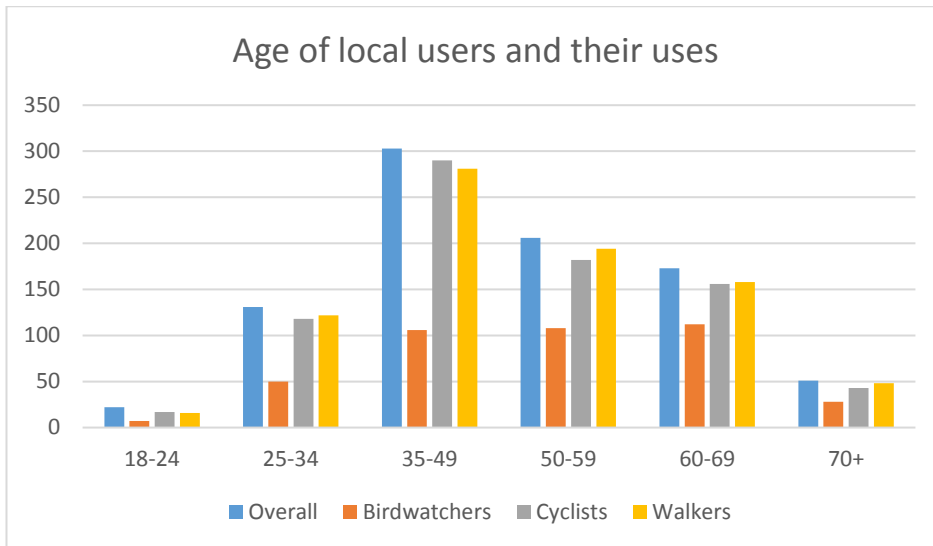


Figure 4-1 Age of local users

Table 4-3 Current frequency of activity by local residents

	Cycling	Walking
Often	46	25
Regularly	21	25
Irregularly/rarely	11	27
Never	2	2
	80	79

Table 4-3 indicates local respondents are more likely to regularly cycle than to regularly walk. Daily local cyclists are expected to be younger (25-34 years old) and older (60 years and older) (see Figure 4-2). Most local users are expected to have weekly and to a lesser extent monthly cycling frequencies (Figure 4-2).

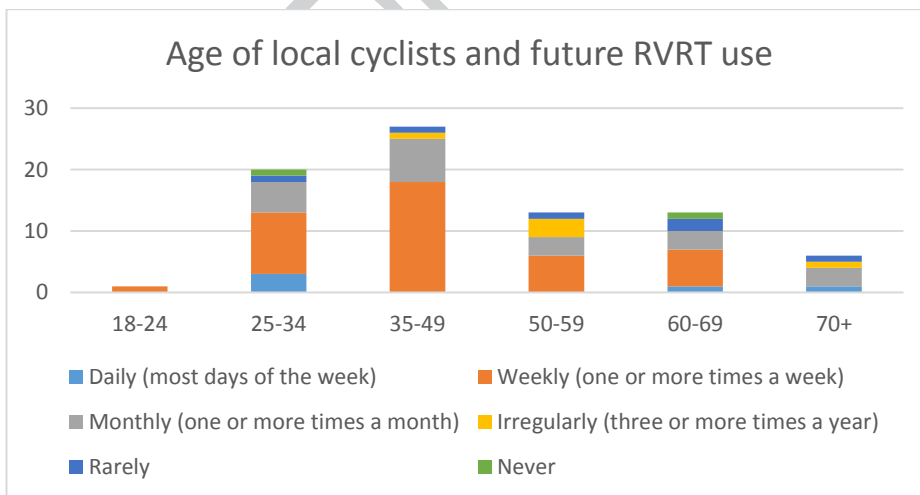


Figure 4-2 Local user cycling frequency with the RVRT

The main purposes for respondents walking/running or cycling in the local area was for fitness/exercise or recreation, with local travel the next most common. Respondents indicate that with the RVRT there will be a small increase in commuting, local travel and training for competitive sports (see Table 4-4).

Table 4-4 Purpose for walking/running or cycling in the local area

	Current		Future
	Walking	Cycling	Cycling
Commuting	11	9	24
Recreation	57	63	63
Fitness/exercise	59	64	61
Competitive sport or sport training		9	16
Local travel	41	21	29
Walk a dog	28		
Don't walk	5		
Other		7	

4.3.2 Users from within the regional area

The age distribution of respondents in the regional area shows a much higher representation by younger users (25 – 34 years old) than in the local area majority of respondents in the regional area were aged between 35 and 69 (see Figure 4-3). The age data also illustrates that most respondents participate in both walking/running and cycling activities, at least rarely (see Table 4-4). A larger proportion of older users also birdwatch.

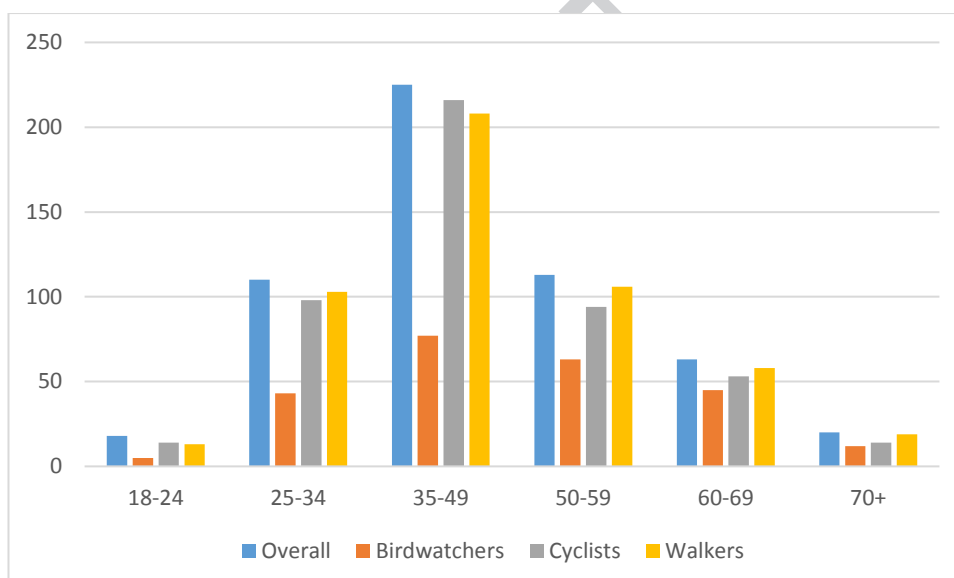


Figure 4-3 Age of regional users

Table 4-5 Frequency of future use of the RVRT by regional residents

	Cycling	Walking
Often	166	97
Regularly	147	89
Irregularly/rarely	123	207
Never	12	49
Total	448	442

Table 4-5 indicates regional respondents, as with local respondents are more likely to regularly cycle the RVRT than to regularly walk it. Daily cyclists from the regional area are likely to be from more diverse age groups than local users. Most regional users expect to have weekly and to a lesser extent monthly cycling frequencies (Figure 4-4) similar to the local area, and facilitated by the proximity of route and unique riding experience it provides.

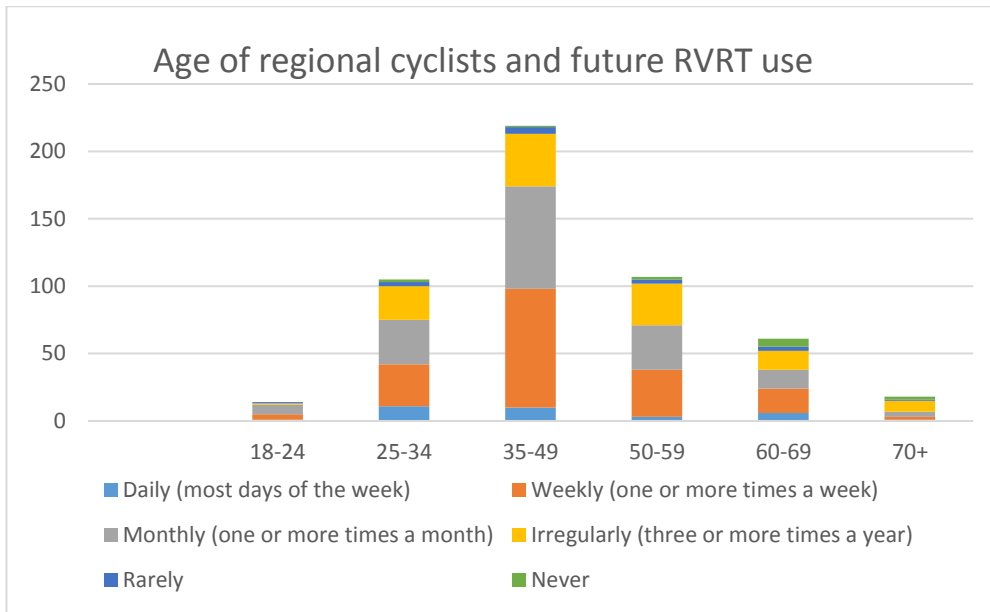


Figure 4-4 Regional user cycling frequency with the RVRT

The main purpose for respondents walking/running or cycling in the regional area was for fitness/exercise or recreation, with local travel the next most common. A considerable number of respondents also cycle for competitive sports or sports training (see Table 4-6).

Responses indicate that with the RVRT rates of commuting would almost quadruple. Cycling for local travel would almost triple and significant increases in the number of people undertaking or training for competitive cycle sports would also occur.

Table 4-6 Purpose for walking/running or cycling in the regional area

	Current		Future
	Walking	Cycling	Cycling
Commuting	98	52	198
Recreation	339	368	379
Fitness/exercise	332	368	388
Competitive sport or sport training		127	162
Local travel	255	71	213
Walk a dog	182		
Don't walk	24		
Other		7	

4.3.3 Visitors

The highest number of potential visitor respondents were from those in their sixties, however there was also significant response from people from age 35 to 49. While most respondents both walked and cycled (at least rarely), close to a half undertook birdwatching, with this likelihood increasing with age.

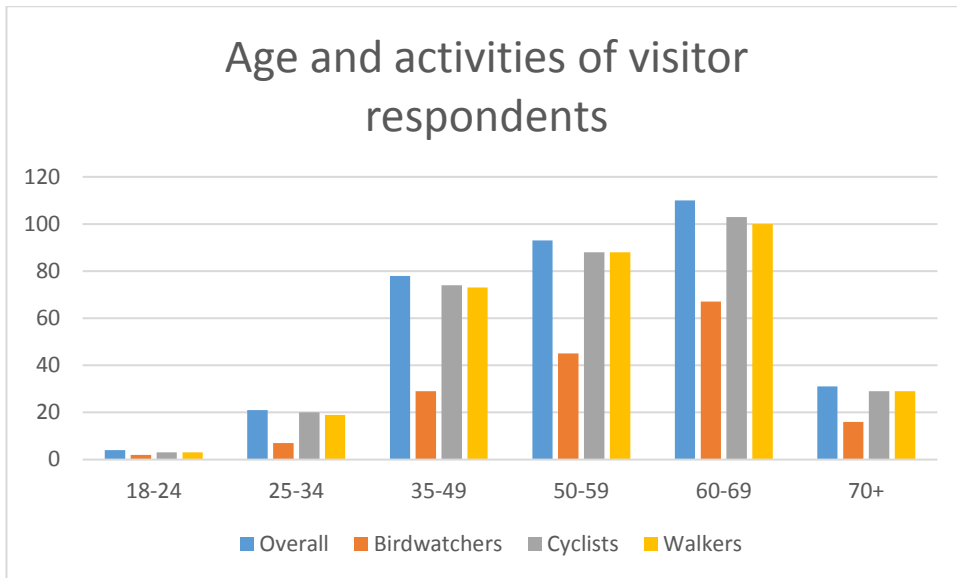


Figure 4-5 Age of visitor users

Table 4-7 Frequency of use of the RVRT by visitors

	Cycling		Walking
Frequency of use	Current	On RVRT	On RVRT
Daily (most days of the week)	157	2	1
Weekly (one or more times a week)	140	10	7
Monthly (one or more times a month)	17	39	18
Irregularly (three or more times a year)	2	195	123
Rarely	1	67	89
No response or none	0	4	79
	317	313	238

Visitors from outside the regional areas are likely to use the area less frequently, as indicated by the results in Table 4-7. More than one in five respondents are likely to cycle the route monthly, with the majority of respondent expecting to use the route at least three times a year.

Whilst most respondent visitors noted recreation and fitness/exercise as the main purpose for cycling, many also noted tourism and cycling with a group/club as the main purpose. Given that cycling enthusiasts were strongly represented in the survey, this result largely reflects the nature of potential future cycling tourism.

4.3.4 Cycling

The survey indicates that respondents have a high incidence of very regular cycling (daily or weekly). Indications of future cycling activity demonstrates that a variety of regional visitors can be expected at the RVRT, with most respondents likely to use the trail both weekly, monthly or several times a year. As expected the trail will draw much use from cyclists who are already very regular cyclists in the region. Responses from the local area indicate a decline in very frequent cycling but an increase in regular monthly cycling. Potential tourists indicated a clear intention to visit the RVRT, with the majority expecting to visit three or more times a year.

Table 4-8 Current and future cycling

	Current			Future		
	Local	Regional	Tourists	Local	Regional	Tourists
Often	50	348	297	46	166	12
Regularly	11	43	17	21	147	39
Irregularly/rarely	10	31	3	11	123	262
Never	11	29	5	2	12	6
	82	451	322	80	448	319

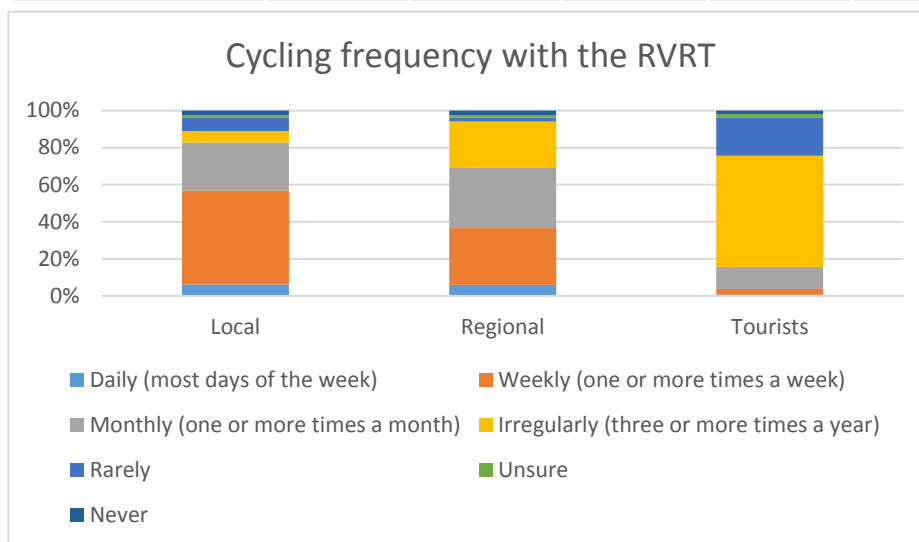


Figure 4-6 Cycling frequency with the RVRT

The survey reinforces the key role the RVRT would play as a mechanism for active recreation for all users (local, regional and tourists). The length of the trail also lends itself to its use as a regional route for competitive cycling training and activities.

Both local and regional users also noted their intention to cycle the route to facilitate birdwatching, to attend cycle racing activities in Kurri Kurri, for regional respondents, as part of bike group activities and for family and social activities. The key “other” responses from tourists were also for tourism and bike tours.

Table 4-9 Reasons for cycling the RVRT

	Local	Regional	Tourist	Grand Total
Commuting	24	198	129	351
Recreation	63	379	303	745
Fitness/exercise	61	388	281	730
Competitive sport or sport training	16	162	64	242
Local travel	29	213	200	442

4.3.5 Walking, running and jogging

Survey results indicate that future use of the RVRT for walking/running/jogging may not be taken up by the most active walkers in the local area (see Table 4-10), with less than half of the most active expecting to use the RVRT on a daily or weekly basis.

This low result for future walking use is likely influenced by a number of factors:

- i) The survey was not completed extensively by respondents in the local areas in closest proximity to the route.

- ii) Respondents likely had limited information at the time of the survey in regard to specific facilities, rest areas, and access points.
- iii) Very regular walking is most often undertaken in close proximity to people's homes so travelling for appropriate routes is less likely at this frequency.

Table 4-10 Current behaviour and likely future walking on the RVRT

	Current			Future		
	Local	Regional	Tourists	Local	Regional	Tourists
Often	68	374	284	25	97	8
Regularly	6	39	14	25	89	18
Irregularly/rarely	6	18	14	27	207	212
Never				2	49	68
	80	431	312	79	442	306

Table 4-11 Current reasons for walking/running

	Local	Regional	Tourist	Total
Commuting	11	98	86	195
Recreation	57	339	254	650
Fitness/exercise	59	332	216	607
Local travel	41	255	197	493
Walk a dog	28	182	97	307
Don't walk	5	24	11	40

For all respondents the main reasons for walking/running was for recreation, fitness/exercise and local travel.

4.3.6 Birdwatching

As noted in section 1.3 the Hexham wetlands are a bird watching location of state significance, drawing birdwatchers from within the region and beyond. The survey indicates that around 22 percent of respondents birdwatch at least 3 times a year with slightly more birdwatching at least rarely (see Table 4-12). Survey results indicate a significant increase in both local and regional birdwatching is expected with the RVRT and a comparable increase in irregular birdwatching from visitors from outside the region. It is possible that these visit intentions may not be exclusively for the purpose of birdwatching, and may also represent the multifaceted natural experience expected by those travelling for cycling or walking.

Table 4-12 Current and likely future birdwatching activity

	Current		Future	
	More than three times a year	Rarely	More than three times a year	Rarely
Local	27	16	37	18
Regional	98	106	133	126
Tourist	77	89	74	111
	202	211	244	255

Section 6.4.2 discusses the health benefits of the RVRT and how the greatest health gains would be achieved by inactive or underactive people becoming more active. In the survey 77 respondents, or 8.6 percent indicated that they either do not currently cycle, or do not currently walk. However, of these, 22 percent indicated that with RVRT they expected they could cycle or walk at least monthly, with a higher proportion of local residents likely to indicate this level of frequency. Although almost 40 percent of people expected either that they would not cycle, or they would not walk on the RVRT, most would do at least one of these, even if rarely, with only 4 respondents indicating they would neither cycle nor walk.

4.3.7 Likely modes of travel to the RVRT

The survey indicates the dominant form of transport by local users is expected to be cycling, followed by driving, then walking. For regional users driving would represent a larger portion, whereas for tourists, driving and public transport are expected to be the dominant modes.

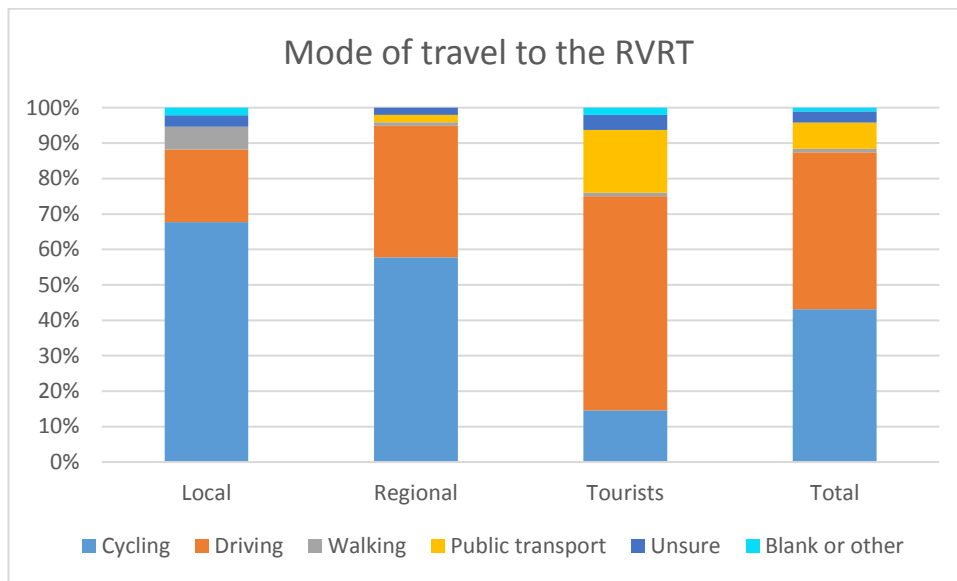


Figure 4-7 Mode of travel to the RVRT

4.4 How consultation has informed the assessment

The evolution of the RVRT has been a process that has been cooperatively driven by local government and members of local communities over many years. Consultation for this socio-economic impact assessment has drawn on these evolving consultations, as well as engaging key stakeholders, including those who currently use or have an interest in the area where the route will traverse and those who may in the future.

These consultations have significantly informed the understanding of the local and regional area and potential users and in the impact identification and quantification process. Consultation has also input to the development of mitigation and opportunity enhancement strategies presented in Section 6.

The survey of potential users, has provided an understanding of some likely future use of the RVRT, with particular insight into the likely future use by the local and regional cycling community and cycling tourism.

5. Future users of the trail

Estimating the demand of active transport (cyclists and pedestrians) and other users involves the most uncertainty and is difficult to define, particularly for a completely new off-road facility. The anticipated number of users will determine the level of expected benefits for the RVRT. In order to estimate demand for the RVRT a combination of techniques have been adopted, as described in section 6.2.3. This approach estimates 246,385 trips per annum.

The Richmond Vale Rail Trail Feasibility Analysis (Mike Halliburton Associates et al 2014) reviewed experience from rail trails in other parts of Australia. Key comparative findings from this report are provided below, together with relevant local and regional tourism and population data to understand potential future usage trends for the RVRT. It also provides additional context with regard to local cycle trails, recent research in cycle tourism, and current and potential commuter use.

5.1 Expected future use

5.1.1 Local and regional use

The Richmond Vale Rail Trail Feasibility Analysis cites research into urban and peri-urban trails in other parts of Australia. Whilst monitoring and measurement of trails is limited and not all trails are comparable, the Mundaring Shire in Western Australia which supports a number of rail trails and other trails is cited. In Mundaring it was found that whilst only 10 percent of users of the trails were local (or regional) residents (the remainder being tourists), they represented 63 percent of all visits, meaning local residents undertook an average of 75 trips per year on the trails (an average of almost 1.5 times a week). The number of trips however, must be considered in the context of the trail being a more extensive network of trails, rather than a specific segment. Nevertheless, the relative proportions of users and use can be demonstrative for RVRT.

The Mundaring study also found that local users, whilst spending less than tourists, averaged \$1.44 per person per trip, primarily of food and drinks. This expenditure is consistent with the social nature of a large proportion of recreational cycling and walking where coffee stops and café visits are frequent conclusion points.

Tracks in the region

The Fernleigh Track is a rail trail developed jointly by City of Newcastle Council and Lake Macquarie Council. It runs 16 kilometres between Adamstown and Belmont, traversing both suburban and dense bushland areas, including the Glenrock State Recreation Area and wetland areas. Whilst it is not directly comparable, it is demonstrative of high local and regional demand for quality off-road cycle facilities.

Traffic count data for the Fernleigh Track was commissioned specifically for this project at two sites on the Fernleigh Track. The seven day average was used to estimate the average week day usage of the Fernleigh Track at the two sites. These are depicted in Figure 5-1 and Figure 5-2.

- Site 1 - Fernleigh track at the end of the car park adjacent to Railway Parade (Eastbound and Westbound)
- Site 2 - Fernleigh track 30 m north of Burwood Road (Northbound and Southbound)

This data was collected over a seven day period in May 2017 at hourly intervals and shows a consistent usage on weekdays with higher patronage on the weekends. Usage is fairly evenly spread between the hours of 5:00 am – 6:00 pm.

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

In March 2016 the Bicycle Network cycle counts (in cooperation with Lake Macquarie Council and the Newcastle Cycleway Movement) undertaken on the Fernleigh track during weekday peak hours (7:00 am to 9:00 am) indicate over 245 bicycle riders. This number grew in the first two years of operation and has since been relatively stable. Approximately one in five cyclists was female. However, this count does not include other users (e.g. pedestrians, dog walkers etc.). Measurements taken over four hours on a weekend (9:00 am to 1:00 pm) in March 2016 indicate 489 users, but includes cyclists (who make up about four out of five users), walkers (10 percent) and runners (4 percent). Dogs and others make up the remainder.

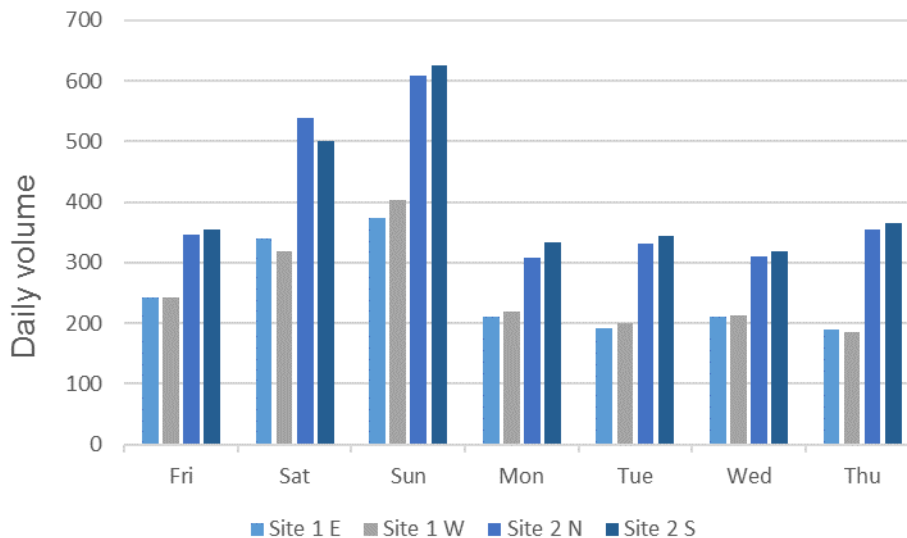


Figure 5-1 Traffic count data for Fernleigh Track – daily volume

Whilst the bulk of trips on the Fernleigh track are expected to be by local users, it is also understood that it draws day tripping visitors from within the region and beyond². The track also hosts events (the Fernleigh 15 kilometre fun run and an electric vehicle race) as well as incidental uses including as a venue for personal training sessions and wedding photography (particularly at the tunnels). The Fernleigh Track is widely regarded as overused, with a very high number of users. Recent traffic count data reveals that the Fernleigh Track receives 2,800 trips per week (~145,000 per year).

The high volume and diversity of use of the Fernleigh Track suggests that uptake and growth in use of the RVRT may be readily achieved.

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

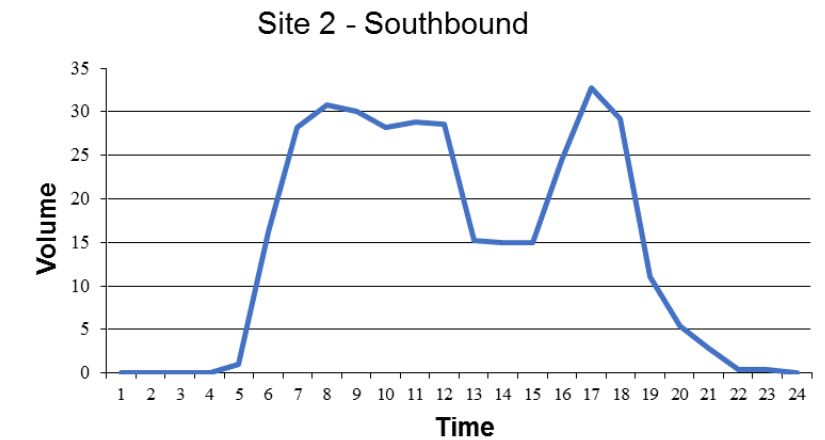
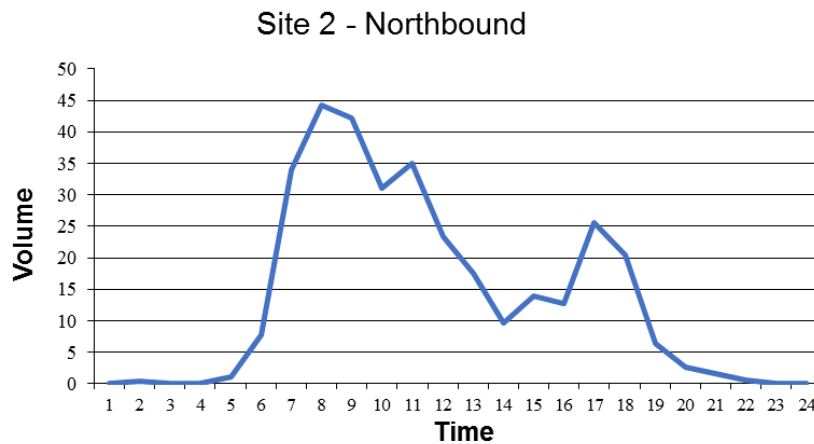
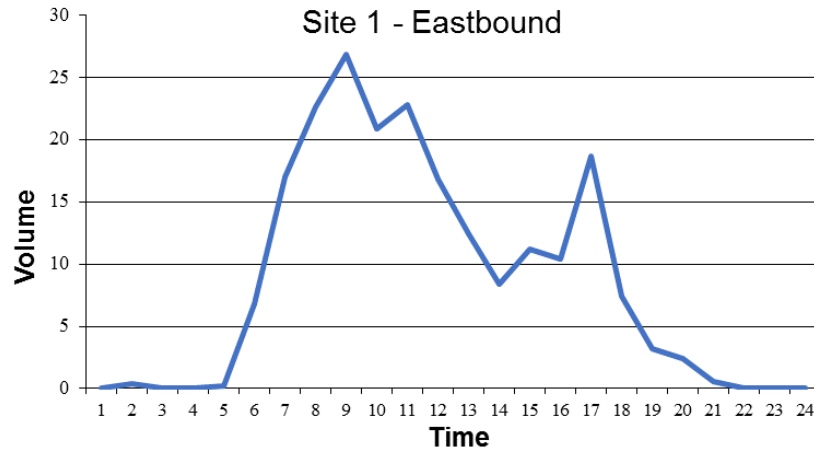


Figure 5-2 Traffic count data for Fernleigh Track (7-day average)

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

Population growth

As discussed in section 2.2.8, the regional area is expected to experience significant growth in the coming decades, with estimates that the Hunter region will grow from 732,400 in 2016 to 862,250 in 2036, an increase of 17.8 percent. Much of this growth would be proximal to the RVRT, including the Blue Gum Hills planning district, areas to the east of Kurri Kurri and just to the northwest of Taro and Beresfield near Thornton in Maitland LGA. Fletcher-Minmi is expected to experience the greatest growth with an average 4.65 percent annual growth, or a more than three-fold increase by 2036 (Forecast.id 2013).

The implications for the RVRT is a significant population growth in the local and regional area and consequently for potential users for both recreation and commuting (see section 5.1.3) from adjacent areas.

5.1.2 Tourism

The RVRT is expected to diversify the tourism offerings in the area, attracting additional tourism and extending the stay of the existing visitor market.

A study of rail trail impacts on tourism in regional Victoria has indicated that cycle tourists are high yield visitors, regularly exceeding expenditure of other visitors in regional areas (Tourism Research Australia, 2015). This is reinforced by surveys as part of a 2009 study that found average per person expenditure was \$244, with half of this on food and beverages (Beeton 2009). Indirect expenditure was also significant with the overall economic contribution of visitors during the period of \$447 per person per day.

As noted in section 2.8, there has been significant recent growth in overnight domestic stays in the Hunter, and increasing traveller preference for active and nature based tourism activities. RVRT would be well placed to attract this growing tourism market and further diversify the tourism offerings in the region, attracting guests to stay longer.

A study into the market for cycle tourism for Victoria (Tourism Research Australia, 2015) found that:

- The market is small (15 percent of respondents) but those who participated are highly engaged and take multiple trips per year.
- Although Victoria, with significant cycle tourism infrastructure was ranked first as a destination, NSW (with limited cycle tourism infrastructure) ranked second.
- Nearly 30 percent of respondents would consider taking a trip including cycling in the next 5 years, including 21 percent of people who had no previous cycle tourism experience.

Consultation with cycling groups and results of the potential user surveys (see section 4.3.3) further support the potential for the RVRT as a cycle tourism destination. RVRT would have the potential to host cycling events and would attract cycling club tours and independent cyclists from outside the regional area. There are a number of successful events in the region that demonstrate this potential including the annual Fernleigh 15 kilometre Run, the Loop the Lake ride in Lack Macquarie and the Port to Port four day ride from Port Stephens to Lake Macquarie.

5.1.3 Enhanced commuting routes

The RVRT lies largely between the Hunter Expressway to the south and John Renshaw Drive to the north, with the Tarro extension also crossing the New England Highway to the north. Traversing multiple scenic natural and rural areas, and skirting both new and established settlements, the trail would present a longer distance recreational route between Kurri Kurri and Newcastle and also presents opportunities for commuter use along the entire route and in specific segments.

The trail from Tarro to Shortland would likely support the greatest number of commuting cyclists as the current route via the New England Highway has seen a number of cyclist fatalities in recent years. The RVRT would therefore likely attract any current cyclists from Maitland and the Newcastle communities of Tarro and Beresfield to this section of the route. It is also expected that it would draw new commuters from these areas by providing a safer route alternative. With residential development also expanding in nearby Thornton, there is a strong potential for future growth in commuting for this segment. Together with a potential future link to the University of Newcastle campus, this active travel link could enhance the desirability of Tarro and Beresfield as more affordable student accommodation.

Traffic count data commissioned for this project revealed that on average 23 people cycle between Tarro and Shortland as part of their daily commute (see Figure 5-3). It is expected that the number of daily commuters would significantly increase if the safety of cyclists was improved through the creation of a new separated off-road cycleway.

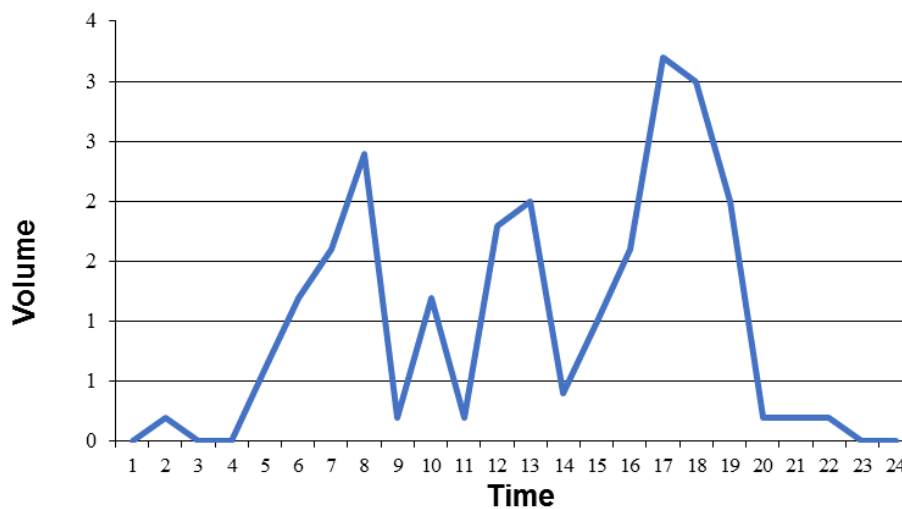


Figure 5-3 Traffic count data for west of Tarro Rail bridge on New England Highway (7-day average)

Public transport between Newcastle and Kurri Kurri currently involves a bus service of about one hour or a mixed bus and train service via Maitland taking about one and a half hours. Commuting the route would likely take between an hour and half and two hours. Whilst commuter numbers may be small initially, as cycling and familiarity with the route grows, mode transfer to cycling may increase for Kurri Kurri residents. The trail may also provide an option for students studying at Kurri Kurri TAFE campus.

Lighting of the route in tunnels and wooded areas could enhance safety, and thus desirability of the route for commuters and recreational users throughout the evenings and early mornings.

Consultation with councils, cycling organisations and review of informal bike tracking sites (see Appendix D) indicate that each of these routes is commonly cycled. The potential user surveys also confirm the likely increase in cycle commuting (summarised in Section 4.3.4). Cycle commuting in Newcastle varies with rates as high as 5.2 percent in Maryville (proximal to the Throsby cycleway) (Cycle Safe Network, undated) and as low as zero in Minmi – Fletcher. Redhead and Dudley, on the Fernleigh track have rates of 0.9 and 1.27 percent (ABS, 2011) respectively, providing a potentially indicative rate for the RVRT. It is considered reasonable that cycle commuting rates with the RVRT could double, resulting in 70 work commuting cyclists, as illustrated in Table 5-1.

Table 5-1 Current and estimated future cycle commuting on the RVRT

Area	Cycling rate (%) ^	Commuters to Newcastle*		Estimated cycle commuters	
		%	Number	Current	Potential Doubling
Beresfield-Tarro	0.3 to 0.5	42	1,669	7	14
Maitland (SA3)	0.4	23	6,355	25	50
Kurri Kurri	0.3	15	376	1	2
Fletcher - Minmi	0.0	60	260	2	4
Total			8,607	35	70

Source: ^ABS Census date 2011, *Bureau of Transport Statistics. Journey to Work 2016. GHD estimates.

Data from the University of Newcastle indicates in the order of 2,700 students and staff live within the RVRT local area (University of Newcastle, 2016). With current rates of cycle commuting at the Callaghan campus at 4 percent, this could represent around 110 commuters to the campus who could utilise the RVRT. Together with the work commuters noted above, cycle commuting could approach 180 people per day.

Whilst the number of commuters may be low, it is estimated that that the benefits to the economy for each commuter cycled kilometre is \$1.43 (Australian Government, 2013), so commuter cycled distances both on and off the RVRT would make significant contributions to the economy.

However the key benefit of the RVRT for commuters is increased safety. The New England Highway in the vicinity of the RVRT has seen three cyclist fatalities over the last five years. The RVRT would provide a safe alternative to this dangerous section of road, and is also expected to draw existing cycle traffic from the New England Highway.

DRAFT

6. Economic assessment

This chapter provides an analysis of the benefits and costs of the Richmond Vale Rail Trail (RVRT). The approach undertaken uses benefit-cost analysis (BCA), which in part, would be used as the justification for public expenditure for the project. The approach adopted in this analysis is consistent with the NSW Government Guide to Cost-Benefit Analysis (TPP17-03) and Transport for NSW – Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives (2016).

The analysis provides an economic evaluation of the societal costs and benefits likely to be accrued as a result of the RVRT. Where possible, attempts have been made to quantify all of the benefits and costs for the preferred option outlined in Table 6-1 below. It is however difficult to obtain economic data on non-market costs and benefits, which contribute to the full economic assessment of the RVRT. Qualitative indications of the possible benefits have been provided for these non-market valuations.

6.1 Purpose of the benefit cost analysis

BCA is a method used to identify and value all benefits and costs involved in the allocation process. It aims to determine a resource allocation leading to an improvement in community welfare. The benefits are reflected in a community's willingness to pay and the costs are reflected in the opportunity cost of production (i.e. value of the next best alternative foregone). A BCA is commonly used to appraise projects to see if they are economically worthwhile (i.e., the project provides an economically efficient use of resources).

The steps involved in a BCA are broadly:

- Define the objective
- Define and describe the base case
- Development and identification of the project options
- Assess the costs and benefits
- Undertake benefit cost analysis
- Calculation of decision criteria
- Perform sensitivity analysis; and
- Reporting

The decision rules most commonly used in BCA to test the economic justification of a project are the net present value (NPV) and the benefit cost ratio (BCR).

6.1.1 Decision rules

A project is deemed economically worthwhile if the net present value is positive (i.e., the present value of the benefits of the project exceeds the present value of the costs).

$$NPV = PV (\text{Benefits}) - PV (\text{Costs})$$

Alternatively, a project is economically worthwhile if the BCR is greater than 1 (i.e., the present value of the benefits divided by the present value of the costs is greater than 1).

$$BCR = PV (\text{Benefits})/PV (\text{Costs})$$

Projects can also be ranked according to their NPV or BCR, with projects with the highest NPV or BCR being preferred from an economic point of view.

Both criteria can be used to assess projects according to their economic acceptability.

6.1.2 Quantifying costs and benefits

Within a BCA, some benefits and costs are more easily quantified than others. Market values have been used where markets exist and therefore values can easily be quantified. The situation is more difficult for environmental and social costs and benefits because markets rarely exist, and indicative values for these costs and benefits must be estimated. Benefit transfer is an approach that can be used to provide an estimate of non-market values. Where possible, the BCA aims to quantify the market and non-market costs and benefits of each option. Broadly the benefits and costs associated with the proposed RVRT are listed in Table 6-1 below.

Table 6-1 Costs and benefits considered in relation to the RVRT

Costs	Benefits
Site Preparation & Establishment	Improvements in cyclist safety
Clearing and grubbing	Health benefits
Demolition	Congestion cost savings
Bulk Earthworks [all areas]	Vehicle Operating Cost Savings
Pavement	Public transport fare cost savings
Drainage & Erosion protection	Air pollution
Structures	Greenhouse gas emission
Fencing	Noise
Signage and linemarking - signs to include posts	Water pollution
Landscaping and trail entry treatments	Journey ambience
Property Acquisition	Average Spend per trip
	Construction and flow-on benefits*
	Tourism benefits*
	Local businesses*
	Avoided costs*
	Property prices*

* Unquantified in this study

6.1.3 Classification of valuation methods

The RVRT will generate benefits and costs that are not readily exchanged in markets and therefore are not readily priced. Some of the unpriced benefits that relate to this project include the additional recreational benefits from the rail trail or the increased opportunities for bird watching by enabling access to the wetlands.

As these unpriced benefits and costs change the overall net benefit to society, they should be valued and included. Table 6-2 below outlines various methods that could be used to provide a monetary estimate. In undertaking this assessment, we have primarily used benefit transfer as the RVRT will likely produce benefits that are similar in magnitude resulting from other active transport use projects that have been previously quantified.

Table 6-2 Economic quantification techniques

Valuation Techniques	Strengths	Weaknesses
<p>Travel Cost Method</p> <p>Uses observed travel and visitation behaviour to a site to derive a demand curve. Quite often used in the valuation of terrestrial and aquatic recreation, fishing and visit to the beaches.</p>	<p>Based on observed behaviour of visitors to different costs of travel.</p>	<p>Based on a number of assumptions.</p> <p>To estimate the demand function, there needs to be enough difference between distances travelled to affect travel costs.</p> <p>Values sensitive to changes in cost assumptions.</p> <p>Measures current demand only.</p> <p>Interviewing visitors on site can introduce sampling biases to the analysis.</p>
<p>Contingent Valuation Method</p> <p>Directly asks people how much they are willing to pay for a change in environmental goods. It asks people to state their willingness to pay, 'contingent' on a specific hypothetical scenario and description of the environmental service.</p> <p>Can be used to measure use and non-use values. Some common applications are for native vegetation, flora and fauna and wetlands.</p>	<p>Consistent with theory and widely used.</p> <p>Can be used to estimate current and prospective values.</p> <p>Can be used to assign dollar values to non-use values of the environment.</p>	<p>Open to biases and misinterpretations as people have practice making choices with market goods, but are often unfamiliar with placing dollar values on environmental goods and services.</p> <p>Strategic bias could arise, if the respondent provides a biased answer to influence a particular outcome.</p> <p>Can be very expensive and time-consuming due to extensive pre-testing and survey work required.</p>
<p>Benefit Transfer</p> <p>Borrows values from 'study site' to apply to 'policy site.' It is only limited by the availability of relevant studies.</p>	<p>Avoid delays in preparing complex surveying techniques</p> <p>More cost effective approach than conducting an original valuation study.</p>	<p>May not accurately reflect chosen site, except for making gross estimates of recreational values, unless the site shares all of the site, location and user specific characteristics.</p>

6.2 Assumptions

In preparing the BCA, the following assumptions have been used in the model.

6.2.1 Discounting

Discounting is used to stream future costs and benefits to a present value using a discount factor based on an estimate of the social cost of capital. The cash flows are projected over a 30-year time period and were discounted back to a present value (2016 dollars) using a real discount rate of 7%. Sensitivity analysis was carried out to investigate the effects of adjusting the discount rate to 4% and 10%, which is consistent with studies of this nature.

Discounting is explained in more detail in the box below.

The Concept of Discounting

The costs and benefits flowing from an investment decision are spread over time. Initial investment costs are borne up front while benefits or operating costs may extend far into the future. Even in the absence of inflation, a dollar received now is worth more than a dollar received at some time in the future.

Conversely, a dollar's cost incurred now is more onerous than a dollar's cost accruing at some future time. This reflects the concept of time preference which can be seen in the fact that people normally prefer to receive cash sooner rather than later and pay bills later rather than sooner. The existence of real interest rates reflects this time preference.

In order to compare the costs and benefits flowing from a project it is necessary to bring them back to a common time dimension. This is done by discounting the value of future costs and benefits in order to determine their present value. The process of discounting is simply compound interest worked backwards.

NSW Treasury (2007) NSW Government Guidelines for Economic Appraisal

6.2.2 Timing of benefits

Benefits and costs are allocated to the year in which they fall due. The future stream of benefits and costs have been calculated to depict the most likely outcomes. Alternative outcomes have been tested using sensitivity analysis.

6.2.3 Estimating demand

Estimating the demand of active transport users (cyclists and pedestrians) for the RVRT is one of the key parameters for economic justification of this project. The prediction of future use for the RVRT involves the most uncertainty and is difficult to define, particularly for a completely new off-road facility. The anticipated number of users will determine the level of expected benefits for the RVRT.

In order to estimate demand for the RVRT we have used a combination of techniques. The first approach (Approach A) uses the low/low scenario from the Richmond Vale Rail Trail Feasibility Analysis (Haliburton and Associates 2014) and has been calculated based on 10% of the combined population within 20 minutes of the RVRT making 10 visits/year to the RVRT. This equates to 313,286 annual trips.

The second method (Approach B) to calculate the estimated demand is to rely on experiences at 'similar' facilities. One 'similar' facility is the Fernleigh Track (see section 5.1.2). A 7 day average count data was used for the Fernleigh Track to observe existing number of users and to use this as a basis to estimate demand for the RVRT. It is necessary to also recognise that this approach may have some limitations due to the different preferences of active transport users.

Approach C used to estimate demand for cycling and walking projects has been adopted by New Zealand Transport Agency. This method is based on a similar model developed in the United States for the 'twin cities' of St Paul and Minneapolis, Minnesota. These approaches use census population data for designated buffer areas surrounding the cycling/walking facility. Buffer areas are assigned for different areas and assigned different weights. This assumes that the further away someone lives from the facility, the less likely they are to use the facility.

GIS analysis was used to analyse the number of suburbs located within 2 and 5 km buffers of the RVRT. 2016 ABS Census data was obtained for the suburbs within the buffers. The buffers are measured as 'the crow flies' and therefore actual travel distances would be longer due to path and road networks. The analysis was also undertaken for the Fernleigh Track as a 'similar facility.' Due to the proposed length of the RVRT and the unique setting it is expected that users would be more willing to travel greater distances than 2 or 5km to use these facilities, therefore using this approach might underestimate total demand. The other limitation of this approach is that it does not include users from intra and interstate.

Using the traffic count data for the Fernleigh Track we then have analysed this as a percentage of the population within a 2 km and 5 km buffer. Using this approach we obtain multipliers of 1.3 for the 2 km and 0.53 for the 5 km buffer. Using these multipliers generates an annual usage for the RVRT of 348,020.

Table 6-3 Census population data approach (Approach C)

Route	Suburbs within 2 km	Population	Suburbs within 5 km	Population
Fernleigh Track (FT)				
Total FT	28	109,771	80	274,929
Richmond Vale Rail Trail - Stages				
Hexham Junction to Minmi and Fletcher	13	37,093	37	143,939
Minmi Junction to Kurri Kurri	2	3,760	46	111,116
Shortland to Tarro	14	38,834	58	206,129
Total RVRT	29	79,687	141	461,184

Source: Population data compiled for suburbs from 2011 Census

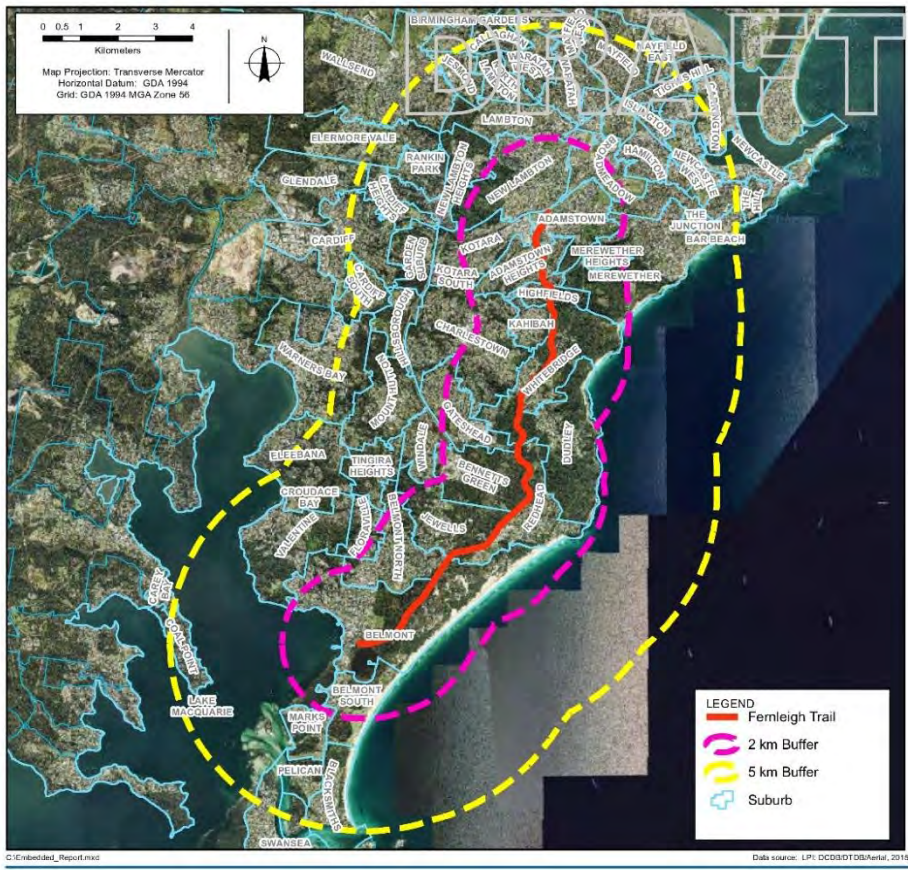


Figure 6-1 Fernleigh Track

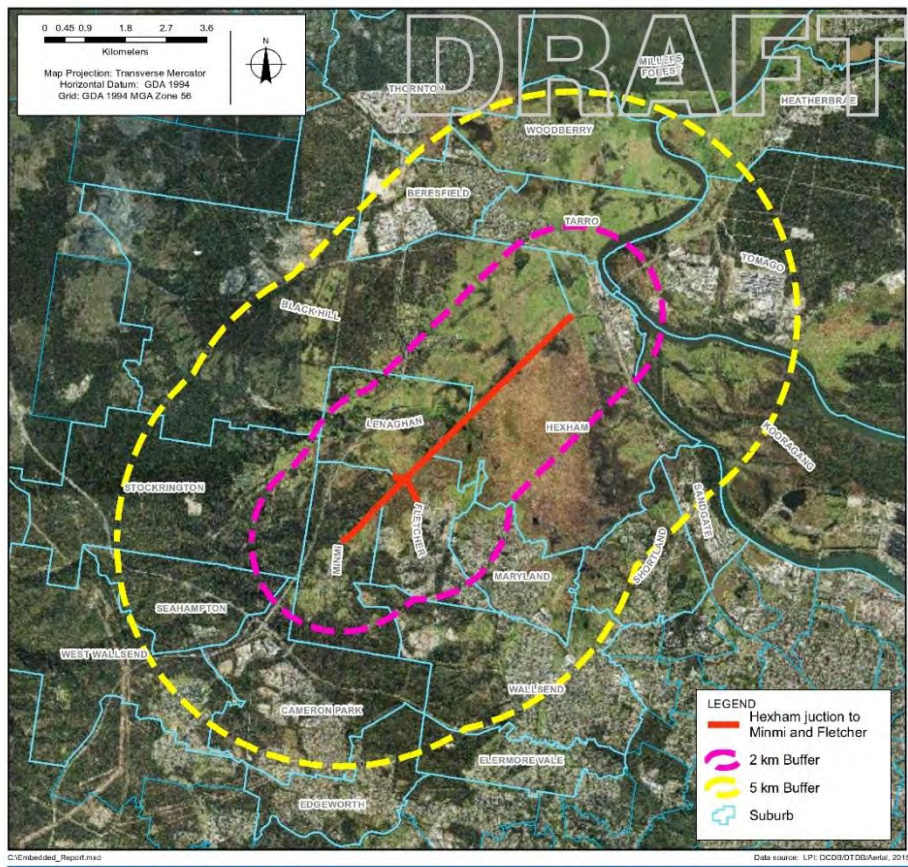


Figure 6-2 Hexham Junction to Minmi and Fletcher

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

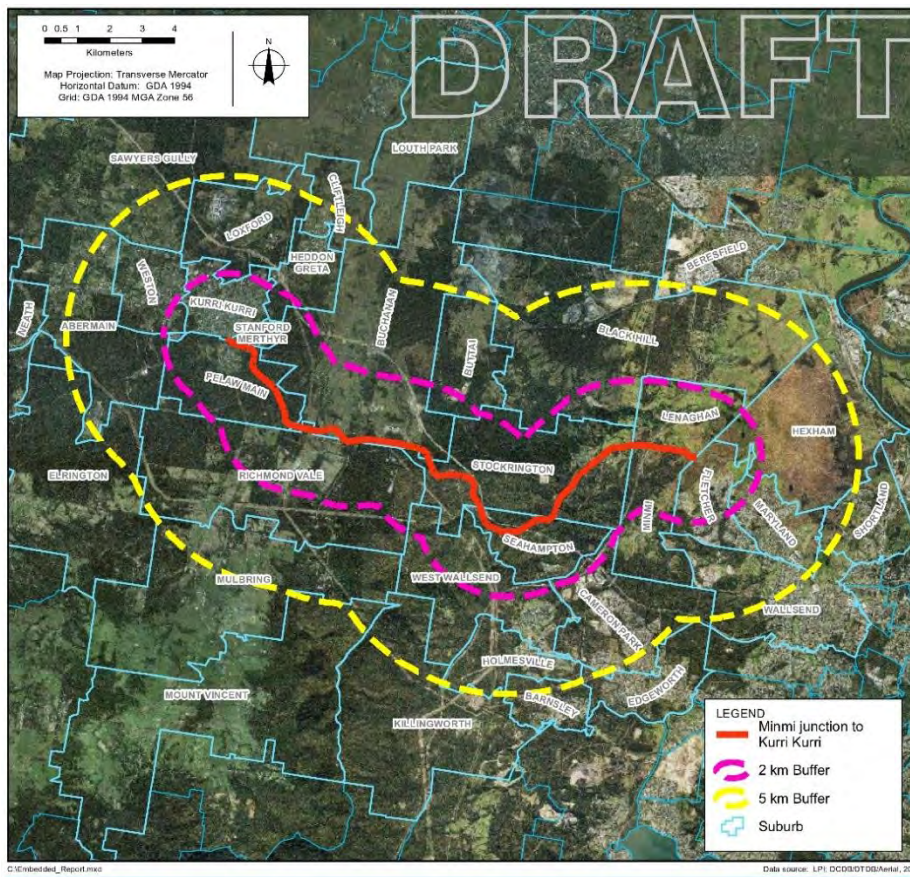


Figure 6-3 Minmi Junction to Kurri Kurri

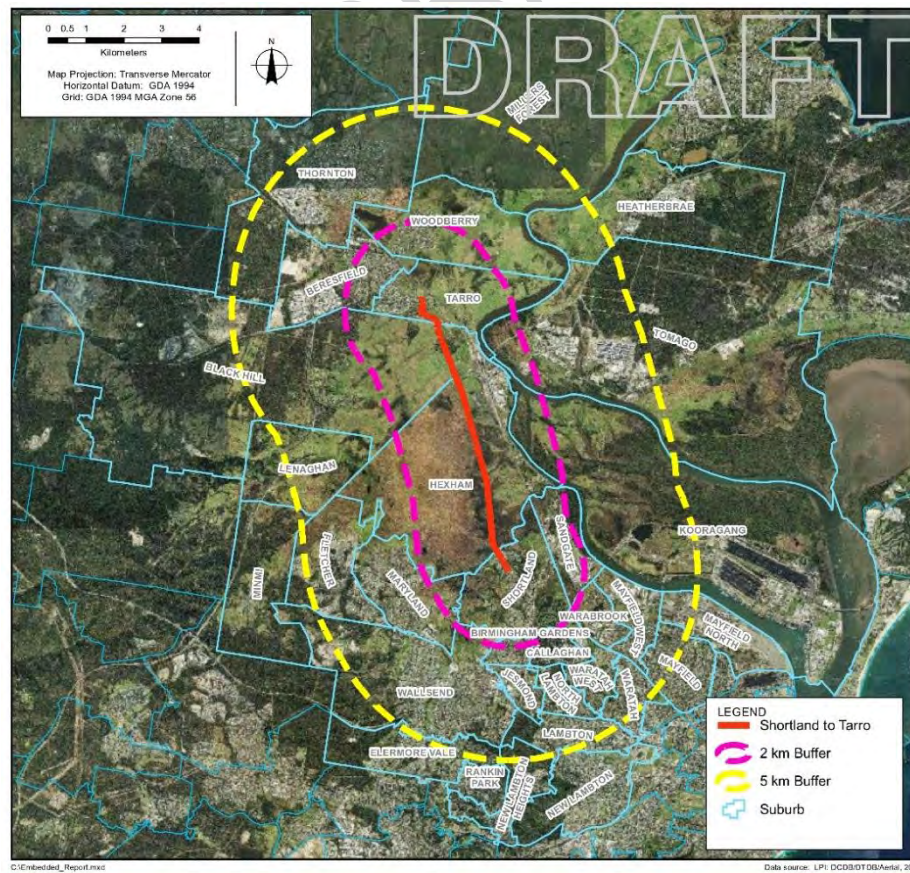


Figure 6-4 Shortland to Tarro

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

The other approach we have used (Approach D) to estimate demand is to use the results of the survey undertaken as part of this project (see Section 4.3) with 22% of respondents indicating that they would use the track at least once a month. We have applied this estimate to those who reside within 2 km of the RVRT and will use the facility at least once a month. This equates to 193,813 annual trips. As discussed previously this survey cannot be considered to be representative of the potential users of the RVRT, however provides insight into future users and probable future behaviour.

The final approach (Approach E) applies the average of approaches A-D to estimate annual demand for the RVRT. Given the variability in the approaches outlined above, we have used Approach E for the BCA with sensitivity analysis undertaken on lower and higher estimated annual usage rates. For completeness, we have also reported the results using Approaches A-D. Based on Transport for NSW guidelines we have assumed an annual growth rate of 1.1% for active transport users, which is also the same as the NSW population growth rate.

Table 6-4 Estimating demand

Approach	Annual estimated demand
A). Richmond Vale Rail Trail Feasibility Analysis (Haliburton Associates) – Low usage scenario	313,286
B). 'Similar Track' Scenario based on Traffic Count	145,000
C). Census Population data scenario	348,020
D). Survey Results Data	193,813
E). Average estimated demand scenario	250,030

6.3 Costs

Costs can be categorised as either capital or recurrent costs.

6.3.1 Capital costs

Capital costs are those costs which must be spent initially. The individual infrastructure components of the RVRT are set out in Table 6-5 below. As our analysis includes sensitivity testing of the results (including increase or decrease in capital costs) allowances for contingency have been excluded from this analysis. Inflation has also been removed to ensure that it does not bias the results as benefits and costs that appear later would appear higher in cash terms. Capital costs have been allocated over a three year construction period.

Table 6-5 Infrastructure capital costs

Cost item	Cost
Site Preparation and Establishment	\$1,661,865
Clearing and grubbing	\$140,358
Demolition	\$257,363
Bulk Earthworks [all areas]	\$1,611,194
Pavement	\$8,580,185
Drainage and Erosion protection	\$941,785
Structures	\$6,057,428
Fencing	\$1,395,420
Signage and linemarking - signs to include posts	\$390,820
Landscaping and trail entry treatments	\$2,859,089
Property Acquisition	\$5,610,000
Design	\$2,212,913
Project Management	\$1,475,275
Total	\$33,193,695

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

6.3.2 Recurrent costs

Recurrent costs include all the annual operating and maintenance (O&M) costs associated with the RVRT after construction has been completed. In the absence of available data relating to the annual O&M costs for the RVRT, a default cost of 1% of the capital costs of construction has been adopted (Transport for NSW, Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives March 2016).

6.4 Benefits

The economic benefits with the RVRT will largely comprise of the benefits arising by improving the safety of cyclists. Almost 25 cyclists commute daily from Tarro to Shortland via the New England Highway. This has resulted in three fatalities over a five year period. The proposal includes a new separated off-road cycleway to be constructed and will improve the safety of commuters (see Improvements in cyclist safety).

In addition to improvements in cyclist safety, Table 6-6 outlines the other benefits that have been investigated and quantified based on the number of potential users undertaken in Section 6.2.3. These benefits have been measured as \$/km with the exception of average spend per trip which is calculated as \$/visit.

Table 6-6 Parameters for active transport users

Benefits	Cycling	Walking
Health benefits	\$1.14	\$1.71
Congestion cost savings	\$0.35	\$0.35
Vehicle Operating Cost Savings	\$0.33	\$0.33
Public transport fare cost savings	\$0.10	\$0.10
Air pollution	\$0.0316	\$0.0316
Greenhouse gas emission	\$0.025	\$0.025
Noise	\$0.010	\$0.010
Water pollution	\$0.0048	\$0.0048
Journey ambience	\$0.13	\$0.13
Average Spend per trip	\$2.11	\$2.11

Source: Transport for NSW – Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives (2016).

6.4.1 Improvements in cyclist safety

A number of studies have valued the cost of a statistical life and serious and minor injuries. It is however often very challenging to value the statistical cost of a human life relating to road crashes. A vehicle can often be replaced or repaired (using market demand prices) – a human life cannot be replaced.

The Bureau of Infrastructure, Transport and Regional Economics (2010) published a paper that estimated the social cost of road crashes in Australia as \$17.85 billion in 2006 (1.7% of GDP). This approach used a human capital approach which only valued the most significant human component of the costs. The human capital approach still produces values that are significantly lower in magnitude than using a Willingness to Pay (WTP) approach. In estimating the statistical cost of a human life, the WTP approach uses stated preference (surveys) or revealed preference (observed behaviour) to determine the value of specific safety improvements. Respondents are asked to choose between hypothetical scenarios that are systematically varied for safety, travel time and cost.

In estimating the statistical cost of a human life, it was found that the human capital approach was conservative and therefore the WTP was the preferred basis for policy analysis. In particular, the WTP approach is consistent with other government agencies (United States, Canada, United Kingdom and New Zealand) in estimating the statistical cost of a human life. The human capital approach was based on lost productivity (future year's productivity and income) and does not make allowance for pain and suffering or apply to fatalities for non-working individuals.

The WTP approach values the statistical cost of a human life in NSW at \$6.7 million and the value of a statistical life year at \$325,434 (indexed to 2016 figures). In particular this WTP approach recognises that road crashes with cyclists generally affect a younger cross section of the population compared to other causes of death, therefore a higher statistical cost of a human life is applied. Between June 2010 and April 2015, there has been three fatalities³ on the New England Highway where cyclists currently use the Highway as part of their daily commute between Tarro and Shortland. For the purpose of this study, it is assumed that the RVRT would result in the avoidance of one fatality every five years or six fatalities over a 30 year period. This estimate is considered conservative when compared against actual deaths for the corresponding stretch of the New England Highway over the past five years. The statistical cost of a human life has been annualised in line with the Transport for NSW Guidelines relating to accident costs.

6.4.2 Health benefits

The RVRT would generate health benefits for all users of the trail. These benefits can be both physical, social and physiological.

Physical health benefits

Inadequate physical activity is a major factor contributing to high levels of obesity and rates of hospitalisation for health behaviour related conditions. As discussed in section 2.3, in the Hunter, over two thirds of adult residents do not meet the recommended amount of weekly physical activity, and seven in ten are overweight or obese. Research globally indicates that physically active people have approximately half the per capita health care costs of their inactive counterparts (Shephard and Tudor-Locke, 2016). The greatest health benefits therefore are to be derived from increasing the activity of the currently inactive or underactive.

Research has shown that physical activity is declining worldwide, and this is partly attributable to a reduction in active commuting, where people incorporate cycling or walking as part of their daily commute and incorporate more physical activity into their daily routine.

Health benefits are extremely difficult to quantify in an economic capacity, partly due to the lack of research and information available in this area (WHO 2014). Some health benefits include a reduction in; the likelihood of heart disease, stroke, some cancers, and some mental health conditions (WHO 2014). The full health benefits produced by "newly induced physical activity" take around 5 years to come into effect (WHO 2014). These benefits are faster to come into effect than the longer-term goal of reduced mortality, however there is currently very little scope to account for the reduction in disease accurately in economic estimates of health benefits. A report in 2012 estimated health and fitness benefits of cycling to be 49 cents per kilometre (Ker 2012).

AECOM made an estimate in a report for a new cycle path in Sydney for 16.7 cents per kilometre of benefits incorporating a reduction of sick days and increased worker productivity (Garcia et al. 2010).

A major study recently published in the British Medical Journal (Celis-Morales et al 2017) found that people who are less physically active are both more likely to develop health problems like heart disease and Type 2 diabetes and also have a higher risk of dying younger. This study found that active commuting was associated with a lower risk of adverse cardiovascular outcomes. The study adds that commuting by cycling was associated with lower risk of all causes of mortality and adverse cardiovascular disease and cancer outcomes and for walking, commuting was associated with lower risk of cardiovascular disease incidence and mortality.

Transport for NSW (2016) have estimated a number of parameters to be used in economic evaluations and have estimated that health benefits attributed to cycling and walking can lead to improved health outcomes and reduced morbidity and mortality. As walking has been estimated to result in greater health benefits than cycling the figure adopted (per km) is roughly 1.5 times higher.

The conclusion of the Celis-Morales et al (2017) study suggestion that health of a community may be improved by policies that increase active commuting, particularly cycling. This could be achieved through 'creation of cycle lanes, cycle hire or purchase schemes, and better provision for cycles on public transport.'

The RVRT would attract existing active users and generate some use by currently sedentary residents who would be attracted to the new facility. The physical benefits would vary across age groups, however the RVRT provides the opportunity to match these diverse abilities and needs.

The RVRT provides a safe and accessible area for young riders to gain confidence cycling which could increase their incidence of cycling beyond the trail. This is particularly desirable in Fletcher where consultation indicates far fewer primary school students cycle or walk to school than in Minmi. As Fletcher and Minmi would be developed with the RVRT and linking cycle infrastructure, there is a good opportunity to increase physical activity and make walking and cycling regular in these growing communities.

Cycling participation rates generally indicate a fall in cycling for young adults from 18 to 24. This is likely a result of both the attainment of driving licences creating a mode shift and also the move from being students to being in the work force and the change in leisure and travel activities this entails. It is expected that the local availability of rail trails would benefit adults in this cohort for whom the trail may represent an opportunity to meet their changing needs for local or commuter travel or recreation and assist in meeting their physical activity requirements.

The low gradient of rail trails makes them navigable for all ages and abilities. Results of the potential user surveys also indicate that existing activity and future use of the RVRT by local and regional users would include many aged over 60 years. Starting and keeping older Australians active can increase their length and quality of life and reduce health costs.

Whilst it is likely that the majority of users of the rail trail would be those already active. To maximise the mobilisation of currently sedentary or mildly active residents and visitors, the provision of facilities and services to enhance participation is required. This should include:

- **Availability of easily accessible (automated) bike hire services at key points.** It is likely that this could be provided commercially at the Hunter Wetlands Centre, capitalising on tourist numbers at the trail head. Other key locations would be at Kurri Kurri trail head and at Fletcher (potentially at the Fletcher Community Centre). These may not initially be commercially viable and should be considered as an enhancement measure to instigate local active travel behaviour. These stations should have bikes available for hire with helmets and water bottles, and also have an air pressure hose for public use. Consideration should also be given to the potential for provision of baby seats and or trailers. This is particularly relevant at Fletcher where the residential population in the area is expected to more than triple by 2036, and where neighbourhoods are being planned to integrate with the cycle network. At Kurri Kurri, provision would create the opportunity for opportunistic hire for visitors from this end of the route.
- **Bike skills workshops and courses** aimed at various age groups, including school aged children, mature adults and retirees. Such events could be timed with other events and programs such as Ride to School Days and Seniors Weeks. Such programs are already implemented in Newcastle City Council, and could be targeted in the RVRT local area.

Psychological and social benefits

The psychological benefits of contact and exposure to nature and natural areas are well documented. The benefits include improved mood, lower levels of anxiety, lower stress levels and lower levels of depression. Whilst important across the community, for children and older people this is especially relevant. Research indicates reduced prevalence of depression and anxiety and higher levels of cognitive function and self-worth in children who have higher levels of contact with nature (Deakin University, 2010). With older people more likely to report high or very high levels of physiological distress, the benefits of social contact facilitated during enjoyment of the natural areas is likely to reduce the risk of developing chronic diseases such as depression and cardiovascular disease (Deakin University, 2010). Long term health benefits to users of the RVRT are therefore likely.

6.4.3 Congestion cost savings

Congestion cost savings have only been modelled for those users who use either cycling or walking as their daily commute to replace car trips. Therefore the annual benefit is considered negligible in reducing congestion on roads. As the RVRT is expanded to include other areas and the safety of active transport users is guaranteed then it is expected that there would be an increase in the benefits arising.

6.4.4 Vehicle operating cost savings

As per congestion cost savings, this benefit is also only attributed to those active transport users where cycling/walking replaces car trips and recognises that cyclists save on motor vehicle costs by switching to cycling.

6.4.5 Public transport fare cost savings

This benefit has only been attributed where active transport replace public transport trips where daily commuters save public transport fares. It has also only been applied to cyclists/walkers who use the RVRT as part of their daily commute.

6.4.6 Air pollution, greenhouse gas emission, noise and water pollution

The above factors are predominately urban issues and relates to the population density and distances vehicles are driven. For active transport users, the above factors have modelled to reflect that there will be benefits arising as users switch from cars to more active forms of transport like cycling and walking. These parameters have been modelled using a WTP approach and have been adopted from the Transport for NSW guidelines (2016) for active transport.

6.4.7 Journey ambiance

Journey ambiance refers to the additional enjoyment that cyclists derive from the use of safer facilities. In relation to the RVRT, journey ambiance could include:

- Views experienced by the traveller: the RVRT would run through relatively undisturbed vegetation, iconic wetlands and heavily forested sections
- Traveller stress; frustration, fear of potential accidents and route uncertainty
- Quality and cleanliness of facilities and information provided

In particular, some of the above factors will be very important for users of the RVRT including the views experienced by the traveller along the route and the improved safety by having a separated off-road cycle route. In particular there will be significant improvements in journey ambiance as the trail from Tarro to Shortland will likely support the greatest number of commuting cyclists as the current route via the New England Highway has seen a number of cyclist fatalities in recent years (three in the past five years) and will remove cyclists and commuters onto a separated off-road pathway (see following section for statistical cost of a human life). Wardman et al (2007) and Hopkinson & Wardman (1996) has undertaken research in the UK on journey ambiance and to forecast trends in urban commuting and predict the impacts of different measures to encourage cycling (e.g. separated cycle ways, wider lanes etc.). Garcia et al (2010) in a study for the Inner Sydney Regional Bicycle Network, Demand Assessment and Economic Appraisal reviewed the research from Wardman (2007) and Hopkinson & Wardman (1996) and adopted a value of 13 cents/cycle km for separated cycleway travel including travel along shared paths. (This figures has been updated to reflect 2016 dollars).

6.4.8 Regional spend per trip

Cyclists are a particularly advantageous group of tourists to attract as they have been demonstrated to be a high spending market, with cyclists on the Murray to Mountains Rail Trail recorded as spending significantly more per night (\$244 vs \$159) over the Easter period than the average tourist (Beeton 2009). Tourists typically spend money on accommodation, food and beverages, fuel and transport, and bicycle goods and services (Beeton 2009), therefore hospitality and transport industries are the most likely to benefit from this project.

The Warburton Rail Trail in Victoria, Australia, has many similarities to the proposed Richmond Vale Rail Trail. The Warburton to Lilydale Trail is a similar length (40 km), connects two small local centres, and is situated along a scenic disused railway line. This trail gives a contribution of \$206.40 (\$2003) per day to the local economy (Beeton, 2006), demonstrating the significant value of shorter rail trails which are easily accessible. This economic value was comparable to longer rail trails attracting multiple day trips necessitating overnight accommodation.

Birdwatching tourism is a growing area with an affluent, well-educated market (Jones & Buckley 2001). The position of the Hunter Valley Wetland Centre allows for an increase in this area, with new access tracks to the centre via bike trail.

The RVRT Feasibility analysis reported that for similar type of rail trails (Mundaring Shire Trail Network in Western Australia) that have been established in other areas that local users still remain the largest group of users (63%). As the majority of users are local, the expenditure per individual visit is considered low, however the cumulative impact and flow on benefits to the community were significant. This would be similar for the RVRT as there would be a high proportion of local users and travel costs and expenditure per individual visit is considered low. Local users for the Mundaring Shire Trail Network spent an estimated \$2.11 per visit (present value).

6.4.9 Construction and flow-on benefits

Construction of the RVRT may extend in the order of 12 months, with up to 100 workers at any time. The workforce is expected to be sourced from within the region. The direct impact of construction creates a flow-on effect caused by the spending of construction firms and their employees in the local economy. These flow-on impacts are either indirect (business-to-business) impacts or induced (business-to-household) impacts. Indirect (business-to-business) impacts are goods and services purchased by the construction firms from other firms in the local economy. Induced or business-to-household impacts are goods and services purchased by employees of the construction firms or in the indirect support industries.

6.4.10 Tourism benefits

A key objective of the RVRT is to create a recreational facility for use by local and regional communities and visitors, and in doing so diversify the current tourism offerings in the region. The contribution of tourism to the economy in the region varies, with only 4 percent of jobs in Newcastle LGA derived from tourism, compared with 13.6 percent in Cessnock. However, tourism generates proportionally more jobs than it contributes to overall economic output, meaning tourism expenditure in the region is likely to generate a higher proportion of jobs than does construction or manufacturing, primarily through employment in the accommodation and food service industries. Research on Australian rail trails also indicates this is the main area of expenditure for cycle tourists, for whom the largest portions of their expenditure is food and beverages, with generally less spent on accommodation (section 5.1.2).

As discussed in section 5, rail trails have the potential to become significant destinations for tourists and local users. A segment of this market would be specific cycle tourists. This is particularly evident in Victoria, the number one cycle tourism destination in Australia, where rail trails are seen to be reinvigorating the economies of many drought challenged rural towns, and are being pursued strategically through initiative's such as the *Growing Cycling Tourism in Victoria* (Tourism Research Australia, 2015). Although NSW ranks second as the destination of choice, NSW is far behind Victoria in terms of rail trail infrastructure⁴. Key findings from the report of relevance to the RVRT is that although the cycle tourism market is rather small (15 percent of respondents in the study survey), those involved often take multiple trips, and many who had not taken cycling holidays before also indicated they would consider them in the future. The study also found that cycle tourists engage in a broad range of activities, and whilst the capital cities are most visited, regional areas are also popular.

Results of the potential user survey for the RVRT reinforce these findings, with more than three quarters of visitor respondents indicating they would cycle the route more than three times a year, and only four of the 313 respondents indicating they would not cycle the route. Importantly, the survey found that visits by cycle tour groups would be common.

The RVRT would therefore be well positioned as a tourism offering, in the mix of coastal, urban, natural and vineyard experiences already drawing visitors to the area.

The Lower Hunter also hosts a number of other popular cycleways including the Fernleigh Track, Tramway Track and routes around Lake Macquarie that collaboratively promoted with the RVRT would further enhance the cycle tourism offering for the region.

The RVRT is also expected to draw extensive use by general tourists. As is noted in section 2.8, domestic holiday travel has been increasing in Australia, with a growth in overnight stays and a significant shift away from sedentary activities to outdoor, active and nature based activities. The RVRT is well positioned as a destination for such travellers, especially as it represents a shared path that complements existing routes in the area, offering a longer trail through extensive natural areas. Key to the RVRT attraction would also be activated start and end points. The facilities and tourism offerings of the Hunter Wetlands Centre at Shortland would create a synergistic attraction at the eastern end of the route. At Kurri Kurri, existing facilities and attractions such as the Richmond Vale Rail Museum and the Towns with Heart murals would be further enhanced by the trail and demonstrate opportunities for further connection. At the Log of Knowledge park, Cessnock City Council proposes to undertake an upgrade and expansion of facilities, including an amenities block, updated playground and an information board with map for activities and attractions in Kurri Kurri. An RV overnight camping site is also close by and would enhance tourism opportunities for overnight stays in Kurri Kurri.

Increasing tourism in the Cessnock economy is particularly important for the profile and evolving identity of Kurri Kurri where closure of the main aluminium smelter caused a collapse in local accommodation services linked to the facility, and negatively impacted the overall economy.

The RVRT would provide access to places of interest along the route such as the rail heritage tunnels, retained bridges and places of natural beauty and environmental interest, making the route an overall attraction, not only to cycle tourists. The overall length of the trail would attract cyclists and long distance walkers traversing the entire distance, and the well-spaced access points would facilitate return cycle or walking trips along the route, particularly to key points of interest (i.e. the tunnels, wetlands, forested areas).

Studies from other rail trails (see section 5.1) indicate that whilst local and regional users are often a small proportion of the total number of users, they are more frequent visitors. Similarly, although their expenditure may also be low, it is considerable due to its frequency, and is usually related to consumption of food and drinks.

Using the most conservative estimates from the business case, it is estimated that the RVRT may generate in the order of \$3.2 million in tourism expenditure:

- Local expenditure of \$626,000 per year from regional users⁵
- Regional expenditure by tourists converted from day tripping to overnight stays – \$1,290,000 per year⁶
- Regional expenditure by tourists attracted to stay additional night - \$1,290,000 per year⁷

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To ⁵ Based on 313,000 visits per year and an average spend of \$2 per visit

⁶ Based in 10,000 visitor conversions and an increase in expenditure of \$129 based on Cessnock average spend data in 2016, which was more conservative than inferred from the Hunter Region.

⁷ as above

6.4.11 Local business

Development and use of the rail trail would bring benefits to existing business and create opportunities for diversification and for new businesses. Expenditure by trail users in the local area would not only support those businesses but also create opportunities for new enterprises. Existing local businesses/operations expected to benefit from the RVRT include:

- **Hunter Wetland Centre** – visitor numbers to the wetland centre are expected to increase significantly, from the current levels of approximately 30,000 per year. This could increase demand for all current services at the centre, including bike and Segway hire, the café and kayak hire. With a direct link onto the trail at its northern extent, the centre is likely to develop as a key origin and destination point, providing related services and facilities.
- **Richmond Vale Rail Museum** – is relatively close and accessible to the route, and it is already common that some visitors to the museum would ride the museum train to Pelaw Main with their bikes and cycle the return leg. The RVRT would likely enhance the exposure of the museum to trail users and conversely draw museum visitors onto the trail. The museum also hosts a number of events such as the Steam Fest, the Cranky Handle Rally and events as part of the Kurri Kurri Nostalgia Festival. Potential extensions to the museum and to the Pelaw Main Colliery could further enhance this synergistic benefit. Operation of the RVRT would however prevent realisation of the long term ambitions of the museum to reinstate a circuit of the old rail line.
- **Local food and beverage businesses** – At both the start and end points in Sandgate and Kurri Kurri and also access points such as Fletcher and Minmi and Tarro, food and beverage expenditure by RVRT users is expected to positively impact local businesses. Multiple businesses along Sandgate Road at Shortland, and businesses in Kurri Kurri town would benefit. There is also the potential for the small retail businesses at Minmi and the hotel to attract additional patronage from the trail and for any future café opposite the Fletcher community centre. Use of the Tarro extension would also likely increase patronage of businesses along Anderson Drive in Tarro.

Opportunities for new and or diversified businesses are also likely as a result of the RVRT. Cycle tourists are more likely than other visitors to participate in activities like eating out, visiting art galleries and shopping, creating local economic opportunities. Opportunities identified during consultation include:

- Provision of accommodation/camping on rural properties along the route
- Enhanced demand for horse riding activities near Stockrington
- Mobile café services at various access points along the route
- Mobility scooter rental
- Bike hire services
- Bike servicing and parts
- Transport services for riders and their luggage between end points and/or accommodation

Accessible information and appropriate marketing of rail trails are essential to their success as tourism destinations and activities (Tourism Research Australia 2015). Collaborative themed promotion of the route with associated services and attractions would enhance awareness and uptake of use of the trail and of associated businesses and attractions. The development and promotion of events on the RVRT is expected to further enhance business and tourism benefits related to the trail and more broadly to regional tourism attractions in Newcastle and the Cessnock vineyards. Consultation indicates that proximity to cycle trails is a desirable feature highlighted in property sales advertisements along with other key social infrastructure.

The desirability of active travel resources can also have a positive impact on sense of place for both individuals and the business community. Particularly for Kurri Kurri, economic stimulus through tourism and the associated improvement in sense of place and pride would be a significant positive impact.

6.4.12 Avoided costs

A benefit of the RVRT are the avoided costs (i.e., the expenditures that would be incurred) if the rail trail was not constructed and the existing scheme remained in place. Examples of avoided costs include on-going costs of operation and maintenance of the existing scheme (weed slashing, vegetation management, discarding of illegally dumped rubbish and maintenance of structures).

Due to the different number of land management authorities involved in the management of the proposed RVRT route, it was difficult to ascertain estimates of the avoided costs.

6.4.13 Property prices

Although not quantified in this study, it is expected that properties adjoining or within close proximity to the RVRT would yield higher values than those further away as this project will enhance liveability and other neighbourhood attributes. Local real estate agents have indicated that proximity to cycle trails is a desirable feature highlighted in property sales advertisements along with other key social infrastructure. Living in close proximity to the RVRT is expected to yield benefits for home owners as they get a long term premium in house value, with local and state government earning higher revenue through higher stamp duty and other property related tax income.

A recent research report into Melbourne property 'found that property next to park land showed stronger sales prices. Property with direct park land views as well as close proximity, out-performed most other properties in a given suburb, even those that enjoy proximity without a view' (Australian Financial Review 2016).

Further studies are currently being undertaken to quantify the non-financial benefits of green infrastructure including those associated with health, amenity, liveability and sense of community. Hedonic pricing is the economic approach used to link a good traded in the market place (e.g. real estate) with an environmental good (e.g. amenity or green infrastructure) that is not traded in the market at a point in time. The increase in property prices has not been quantified in this study.

6.4.14 Access and connectivity

The RVRT has been conceived and designed to deliver extensive socio-economic benefits related to access and connectivity, tourism and the economy and health outcomes. The following sections outline the scope of these likely benefits and their beneficiaries.

Consistent with the *Hunter Regional Plan*, the RVRT would enhance access to recreational facilities and connect open spaces, supporting thriving communities (Goal 3 in the Plan). Additionally, the RVRT is expected to provide greater accessibility for residents and visitors within Newcastle and between Newcastle and the Maitland and Cessnock LGAs, connecting not only recreational and natural areas, but education, health and employment facilities.

Key to this improved accessibility is the safety of the route (being off road and thus free of vehicular traffic risks), and its usability (i.e. a relatively low gradient path making it easily navigable by, and attractive to, people of varied abilities).

The RVRT is likely to be used primarily for recreational purposes (including sporting, fitness, nature and bird watching, tourism and general recreation), but also with some commuting

potential. As such, the trail is expected to benefit a diverse cross section of the community, with people at different life stages, and of varied common interests likely to benefit.

The key accessibility benefits for the projects include:

- Equity and diversity of access
- Enhanced access to natural areas
- Active travel links and infrastructure for communities along the route
- Enhanced commuting routes

Diverse and universal access

Key to the appeal and utility of a rail trail is the diverse range of interests and uses it supports and the diverse cross section of people who engage in these. The RVRT would aim to maximise this diversity creating a rich and inclusive environment for local, regional and broader communities to use.

Potential users of the trail are outlined throughout this impact assessment, and are expected to include:

- **Cyclists** – for fitness, recreational users (to explore the route and area), for local travel, work and education commuters, endurance and racing cyclists in training and competition, mountain bikers, children learning to ride, cycle clubs and informal groups and hand cyclists.
- **Walkers/runners/joggers**– localised fitness and social walkers and runners, local residents walking between communities (especially Minmi and Fletcher), recreational walkers, fun runners, dog walkers, family walkers, older walkers, personal trainers.
- **Nature and heritage enthusiasts** – bushwalkers, bird watchers, those interested in local history, Aboriginal heritage and in rail and coal history.
- **Less mobile visitors** – those in wheel chairs, motorised scooters/chairs or other walking aides, and families with children in prams.
- **Photographers** – wedding photographers (especially at tunnels and bridges), nature photographers, amateur recreational photographers.

There is also a potential for use of the route for events such as fun runs/walks and cycle events, as is the case at Fernleigh Track.

The inclusion of viewing and rest points, regular access points, a connection to Tarro, and universal access and toilet facilities at Shortland enhances accessibility for diverse users. In addition, the RVRT provides the opportunity for new or enhanced recreation, outdoor and fitness-related activities for people with a disability.

In addition to the benefits to these users of the routes diverse appeal, the health benefits this generates for users, and the social benefits of increased inclusion and place activation that accrues to both users and the community are considerable. These benefits are discussed in section 6.4.2.

Prohibiting some existing informal uses (such as 4WDing, trail and quad biking and horse riding) from the route may result in displacement into surrounding bushland areas, and/or conflicts between these users on the trail. Management of trail heads to restrict and discourage some of this access would be undertaken. However activation of the trail by approved users is likely to create the main deterrent to these conflicting uses through passive surveillance.

Access to natural areas

As noted in section 1.3, the RVRT will traverse and link several natural areas along its route, from the state significant Hunter Wetlands National Park at Hexham, skirting the Pambalong Nature Reserve and through the wooded Werakata State Conservation Area in the west. Access to these areas (with the exception of Pambalong Nature Reserve) is currently very limited. With habitat restoration over recent years the Hunter Wetland National Park now represents a significant wetland environment which regularly provides a breeding ground for rare and endangered migratory shore birds. Access to the Hunter Wetland National Park is currently very limited with informal access primarily in the east along the pipeline route. The trail will represent improved infrastructure in this area and new access to the western areas of the Hunter Wetland National Park, making it more accessible for a greater diversity of users. Improved access to these natural areas would support the conservation goals of enhanced awareness and appreciation of conservation and natural areas.

It is expected that this increased visitation would also complement and benefit the Hunter Wetland Centre through increased visitation. The trail would augment the environmental offerings currently provided by the Hunter Wetland Centre which hosts in the order of 30,000 visitors per annum. Visitors to the centre include schools, preschools, government agencies, environmental and community groups and corporate organisations as well as individuals. These visitors would have quality access beyond the centre and into the National Park, with a direct connection linking paths in the Centre to the RVRT.

It is likely that the route would facilitate increased access to natural areas for local schools and preschools in Shortland, Kurri Kurri/Pelaw Main and Fletcher for field visits given the safe and easy access and affordability.

Potential future connections to BGHRP would further this connection of natural areas and enhance visitation to both areas. Given that the BGHRP is somewhat out of the way (located along Minmi Road), current visitation indicates a strong demand for local and regional facilities in natural areas and a significant future synergy, particularly given the urban expansion and renewal in the vicinity of the park. It is expected that a large proportion of visitors to this park would also be attracted to the RVRT as an active recreational area in a natural environment.

Development of the RVRT has the potential to limit the access of some existing user groups to natural areas. This is considered a benefit where this involves deterring or prohibiting use by currently unauthorised motor and quad bikes and 4WDs. Birdwatchers however currently access eastern areas of the Hunter Wetlands by vehicle using existing tracks. It is expected that this vehicular access would cease with the RVRT, and there is concern that many birdwatchers (both from within and outside the region) may be deterred from visiting the area, as many would be reluctant to walk or cycle longer distances, including with their equipment. Making permitted motorised transport (such as motorised scooters or chairs) accessible for general users (including birdwatchers) could facilitate continued access for this user group.

The socio-economic impact of increased access to natural areas would accrue to local and regional users, and visitors. It would deliver a greater quality, diversity and accessibility of natural and recreation areas, contributing to the achievement of the *Hunter Regional Plan* Thriving Communities goal, and complementary to the objectives of local government community strategies which include access to open space and recreational areas.

Access to social and recreational infrastructure and communities

As a local recreational resource, the RVRT would provide increased opportunities for active recreation, primarily through localised return trips along the route. These trips may be walking, jogging, cycling, skating or scooting. Whilst much local use of the RVRT may not be destination based, the route is expected to enhance and develop existing destinations along the route. This

would be beneficial for all communities along the route including Shortland, Tarro/Beresfield, Fletcher, Lenaghan, Minmi, Seahampton and Stockrington who would have alternate access between them and to their facilities, in addition to access to recreational facilities at the route end points. As discussed in section 2.2.1, the population of this local area in 2011 was 28,185, and by 2036 this is expected to increase by at least 8,000, primarily through further residential development in the Blue Gum Hills planning district, where the 2011 population is expected to more than triple. New developments in this area are being planned to include cycleways and to integrate with the RVRT to enhance and facilitate local active travel. In this way the RVRT would contribute to increased connectivity within and between communities on the route.

Whilst commuter cycling is discussed in the following section, recreational use of the route would predominate. The potential user survey highlighted that recreation and fitness/exercise were the most common reasons for both current cycling and walking and anticipated future cycling of the RVRT, and that of regional respondents.

Access to active travel and recreational infrastructure is an important requirement for healthy and sustainable communities. The diversity and equity of access that is integral to the RVRT would be particularly valuable with both the young families of new communities in the area and an ageing of the population.

The route would also enhance local access. Destinations and attractors in the Blue Gum Hills area may include activities at the community centre and adjacent sports fields in Fletcher (the end point for the Fletcher RVRT spur). The potential future private development of a café opposite the Fletcher community centre would also enhance this destination for both local and regional users of the RVRT. The primary school and small selection of shops and hotel at Minmi would be readily accessible from route, and particularly so if a further connection to new Minmi residential developments is created. Seahampton residents may also benefit from alternative access to Minmi and Fletcher, facilitating social networks. In addition to these smaller improvements in local connectivity, potential onward connections to recreational facilities in Kurri Kurri (shopping, sports grounds, pools, restaurants etc.) and to Shortland and beyond, including the University of Newcastle. It is likely that greater connectivity would be particularly beneficial for residents of Tarro and Beresfield accessing Shortland and on to the facilities of the University of Newcastle and Newcastle city itself.

Further, as is discussed in section 2, the route provides access to numerous places of natural and heritage interest, with rest and viewing points along the route which themselves would attract local and regional recreational users.

It is estimated that 10 to 30 percent of residents within a 20-minute travel time of the trail would visit the trail between 10 and 30 times per year, resulting in visits by local residents ranging from 313,000 to 2,819,000 visits (see section 5.1). It is likely that there would be a great diversity of uses and levels of use of the route ranging from daily to rare or irregular use. Local respondents to the potential user survey indicated that they would cycle the route more frequently.

Whilst the RVRT would be broadly accessible, uptake of use of the route is expected to vary considerably, with greater use by people who are already active. Section 2.3 discusses the implications of uptake for health benefits.

The RVRT is expected to have a regional impact on recreational infrastructure, with the transfer of some current usage of the Fernleigh Track (which is considered by many to currently be over used) to the RVRT, resulting in improved user scenarios for Fernleigh Track.

6.4.15 Place activation and social capital

Use of the RVRT would activate local spaces both along the route, its start and end points, and areas near to the access points along the route as visitors explore these areas and beyond.

Active travel infrastructure also creates the opportunity for formal and incidental social interaction. The formation or growth of common interest groups such as walking groups, birdwatching, cycling or dog walking groups builds social networks and cohesion, avoiding the negative impacts of social isolation. Even informal incidental use of the trail would expose users to potential social interactions and reduce social isolation. These interactions are particularly valuable for the RVRT as it would draw a diverse range of users of different ages and interests, providing opportunities for intergenerational social interaction. Such interaction is an important contributor to social capital, and is particularly important in growth areas where new social networks (both within new residents and between existing and new residents) need to be developed to support healthy communities.

For younger local residents, the RVRT provides an opportunity for a greater sense of personal independence, with access to a safe and navigable trail for recreation and local travel.

6.5 Results

The result of the BCA of the RVRT is outlined in Table 6-7. The core evaluation results shown in the table are calculated at a 7% discount rate.

Table 6-7 Benefit cost ratio and NPV for the RVRT

	Present Value Cost	Present Value Benefit	NPV	BCR
RVRT	\$31,923,949	\$123,412,916	\$97,296,350	3.87

As outlined in section 6.2, the NPV is the amount that is generated over the 30 year evaluation period calculated in today's dollars.

$$NPV = PV (\text{Benefits}) - PV (\text{Costs})$$

Alternatively, this project is economically worthwhile as the BCR is greater than 1 (i.e., the present value of the benefits divided by the present value of the costs is greater than 1).

$$BCR = PV (\text{Benefits})/PV (\text{Costs})$$

The results of the economic evaluation indicate that a NPV of \$97.3 million would be achieved under the RVRT project. The BCR of 4.14 indicates that the level of expected benefits provided under the RVRT are more than 4 times the level of expected costs.

Table 6-8 Summary of costs and benefits

Costs	\$ million
Site Preparation & Establishment	\$1,453,753
Clearing and grubbing	\$122,781
Demolition	\$225,134
Bulk Earthworks [all areas]	\$1,409,427
Pavement	\$7,505,706
Drainage & Erosion protection	\$823,847
Structures	\$5,298,868
Fencing	\$1,220,674
Signage and linemarking - signs to include posts	\$341,878
Landscaping and trail entry treatments	\$2,501,051
Property Acquisition	\$4,907,471
Design	\$1,935,794
Project Management	\$1,290,530
Annual O&M Costs	\$2,887,033
Total	\$31,923,949

Costs	\$ million
Benefits	
Improvement in Cyclist Safety	\$24,229,943
Health benefits	\$82,765,826
Congestion cost savings	\$1,085,921
Vehicle Operating Cost Savings	\$1,023,869
Public transport fare cost savings	\$310,263
Air pollution	\$2,196,167
Greenhouse gas emission	\$1,737,474
Noise	\$694,990
Water pollution	\$333,595
Journey ambience	\$9,034,866
Regional spend per trip	\$7,248,578
Total	\$123,412,916
BCR	3.87

6.5.1 Sensitivity analysis

Sensitivity tests were carried out to investigate the effects of adjusting key variables within the analysis, and see what effect this had on the base result. A number of key risk factors have been identified and were adjusted in the analysis, these included:

- Capital and maintenance costs e.g. construction costs (increase and decrease of 20%)
- Changes to the project evaluation discount rate (4% and 10%)
- Changes to estimated number of users including results using different approaches to estimating demand

The results of sensitivity analysis of changes in the key parameters are outlined in Table 6-9 below. The range of NPV's from \$49 million to \$136 million, and BCRs, ranging from 2.56 to 5.08, and demonstrates that the results are sensitive to changes in the key variables, however remain positive. This is particularly the case using a very conservative approach for estimating demand of total annual trips. Importantly, even with a 20% increase in costs, the NPV is still significantly positive at \$85.7 million and maintains a BCR of close to 3.3.

Table 6-9 Sensitivity analysis

	Present Value Cost	Present Value Benefit	NPV	BCR
Construction costs decrease by 20%	\$26,116,565	\$123,412,916	\$97,296,350	4.73
Construction costs increase by 20%	\$37,731,332	\$123,412,916	\$85,681,584	3.27
4% discount rate	\$34,988,473	\$171,976,240	\$136,987,767	4.92
10% discount rate	\$29,563,636	\$93,754,464	\$64,190,827	3.17
Increase in annual usage by 20%	\$31,923,949	\$143,249,510	\$111,325,562	4.49
Decrease in annual usage by 20%	\$31,923,949	\$103,576,321	\$71,652,373	3.24
Approach A	\$31,923,949	\$148,505,577	\$116,581,628	4.65
Approach B	\$31,923,949	\$81,749,165	\$49,825,216	2.56
Approach C	\$31,923,949	\$162,284,009	\$130,360,060	5.08
Approach D	\$31,923,949	\$101,112,515	\$69,188,567	3.17

DRAFT

7. Mitigation and impact assessment

This section identifies potential negative impacts that will require management, and opportunities to enhance and expand the socio-economic benefits of the project. The impact assessment has been extensively informed by consultation with relevant stakeholders (as summarised in section 4), by an understanding of the local and regional communities and their planning contexts (sections 2 and 3), and from relevant experience in similar trails (see section 5).

7.1 Place activation

7.1.1 Privacy

Passing through primarily rural and natural areas, the increase in users along the route have the potential to negatively impact on the privacy of nearby neighbours. Whilst the volume of users and the fact that they are passing through would limit the extent of these privacy concerns, when larger events are held with higher volumes of users, the noise and privacy would be more apparent. Fencing or screening of private properties proximal to the route would be implemented to minimise this overlooking and privacy impact. The nature and type of screening along the route would be determined in the detailed design in accordance with relevant Australian Standards and design specifications.

7.1.2 Safety

The presence of users along the route would generate a degree of safety through passive surveillance. It is expected that such passive surveillance would largely prevent use of the route by unauthorised motorised vehicles (such as current trail and quad bikes users and 4WDs) and significantly reduce or prevent illegal dumping that currently occurs along the route. The influence of this passive surveillance is therefore the maintenance of a high amenity for users and level of personal safety through this activation.

Particularly at night, the use of rest areas for social gatherings may occur. Provision of adequate waste facilities should be included to avoid nuisance to other users (e.g., through creation of broken glass and scattered waste).

Lighting of tunnels and wooded areas would enhance user safety, especially for potential commuters.

Safety issues will be addressed in the detailed design in accordance with relevant Australian Standards and design specifications. This is expected to confirm safety considerations related to:

- Emergency vehicle access
- Hours of operation
- Intersections with roads and footpaths
- Lighting placement
- Use of vandal resistant materials
- Signage

7.2 Heritage and cultural impacts

The RVRT is located in predominantly previously disturbed corridors resulting in few directly affected Aboriginal artefacts, but many in proximity. The route traverses the highly archaeologically significant landforms of spur crests surrounding the Hexham Swamp and the ridge crests and creek valleys near Mount Sugarloaf and Black Hill. The Hexham Swamp was a significant source of plant and animal resources for Aboriginal people before the wetland was partially drained and converted to pasture for European animals, and the landscape and sites retain archaeological heritage. The ridgelines and spur crests to Mount Sugarloaf and Black Hill were used as pathways for Aboriginal people to travel across country and as well the summits being important spiritual places. Representatives of the Awabakal Local Aboriginal Land Council, the Mindaribba Local Aboriginal Land Council and the Awabakal and Guringai people Native title Claim participated in the archaeological survey and considered the cultural significance of these findings.

Recognition and interpretation of the existing and historical significance of areas along the route to Aboriginal people and for non-Aboriginal heritage should be incorporated into route design at appropriate locations. The locations and nature of Aboriginal cultural recognition should be developed in cooperation with local Aboriginal stakeholders.

7.3 Property

Much of the land required for the RVRT is currently under the ownership or management of the government or utility organisations. There are several locations where land required for the RVRT is owned or leased by private individuals or organisations, and others where informal use is made of government land.

In some instances, the RVRT currently dissects adjacent land holdings. Council is consulting with these land holders to determine a necessary mitigation measures to ensure continued use of these lands is not compromised. If continued use would be compromised, acquisition of both the trail area and any “orphaned”⁸ land would be pursued.

Privately owned land in Stockrington (near Wallis Creek Bridge) that is affected is currently used for rural purposes including cattle grazing, with some land approved for potential subdivision. Some sections of the RVRT route are also privately owned in this section and would be acquired. The socio-economic impact of such acquisitions is not expected to be significant as they would not compromise the viability of the remaining land for continued rural use or development, with some property owners also noting the RVRT introducing the potential for providing accommodation options or trail users.

Car park construction at the Minmi spur would require the acquisition of land that is currently vacant but which could potentially be developed for residential housing in the future, however no socio-economic impact is expected from this impact with a fair purchase price.

Other property impacts relate to informal users of land over which they have no rights. There are a number of property owners using adjoining Crown land for various residential and rural uses. Cessation of use of the affected land would be required, however this is not expected to alter the viability of use of the remaining properties. Some impacts to privacy and amenity may however result with trail users passing in close proximity to some properties which are currently remote or seldom trafficked.

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD and its consultants accept no liability to any third party for any loss or damage arising from the use of this draft document.

Privacy provisions would be relevant for several properties in Stockrington and Richmond Vale as well as Shortland, and may require fencing and/or screening to prevent overlooking. Fencing would also be required at some properties to prevent trespassing and to control the movement of stock. These provisions are expected to adequately mitigate privacy impacts for adjacent land owners and users (as discussed in section 7.1). All such fencing or screening would be designed in consultation with affected land owners.

7.3.1 Construction

Construction is expected to last in the order of 12 months, although staging of construction may be pursued. Construction times are expected to be within standard hours of 7:00 am to 6:00 pm Monday to Friday and 8:00 am to 1:00 pm Saturdays, with no work on Sundays or public holidays. An exception to this would be the overpass for the Tarro extension over the New England Highway which would require work at night to avoid traffic impacts on this major road.

Access and Connectivity

During construction, access to the route would be restricted, affecting any current recreational users of the alignment (low numbers of birdwatchers, walkers, cyclists).

The Traffic and Transport Assessment (GHD 2016) found that access for construction vehicles would be via proposed access points spread throughout the route, resulting in a dispersed distribution of construction traffic. Existing traffic networks are expected to readily support this temporary increase in vehicle traffic, though upgrades to some intersections (Woodford Street, Minmi and the intersection of George Booth Drive with the former Hunter Expressway Construction Access Road at Blue Gum Creek) may be desirable to minimise delays to through traffic and facilitate accessibility.

Construction management plans should consider transport routes which minimise or avoid passing sensitive social infrastructure such as the Minmi and Tarro Public Schools and avoid impacting parking at the Fletcher Community Centre.

The potential for cumulative impacts of construction of new residential areas in Minmi and of M1 extensions near Tarro could exacerbate any minor traffic impacts brought about by the RVRT construction should development schedules overlap.

Amenity and aesthetics (noise/vibration/visual)

Properties proximal to the RVRT route may experience temporary amenity impacts resulting from construction activities including:

- Increases in noise, vibration and dust from construction activities
- Visual impacts
- Minor increases in construction traffic

The proposal would generate temporary visual and dust impacts however as these are these are not expected to have any socio-economic impacts.

The route, whilst preserving and promoting heritage along the route would also require the removal of derelict heritage infrastructure. Documentation and interpretation of these losses should be included in the interpretive narrative of the trail.

The linear nature of the project means that in most locations works would proceed over only a few weeks, and any noise and vibration impacts associated with these works would thus be short lived. The areas most impacted however are some properties at Minmi, properties adjoining the trail on King Street at Shortland, Stockrington and Pelaw Main. The exception is at Tarro where night works would be undertaken to complete the overpass and where construction may last several months with some works at night, affecting some properties. Standards construction management plans and appropriate mitigations developed through engagement with affected property owners are expected to adequately manage these impacts.

Privacy and safety

As noted in section 7.3, privacy impacts may occur at several properties in Stockrington and Richmond Vale as well as Shortland. This is particularly so with the presence of a construction workforce however except where properties are close to compounds these impacts are expected to be of short duration as works move along the alignment. Fencing may be required at some properties to prevent trespassing and to control the movement of stock during construction and into operation.

Management of recreational use of the route during construction would need to be closely enforced to ensure the safety of any permitted or unauthorised users.

7.4 Summary of impacts

Socio-economic impacts and opportunities generated by the RVRT have been outlined in the impact assessment and are compiled below in Table 7-1. The table notes benefits and associated enhancement measures in normal font. Negative impacts and mitigation measures are highlighted in bold.

Table 7-1 Summary of benefits and impacts, enhancements and mitigations

Category	Benefit or impact	Enhancement or mitigation
Access	Enhanced access to natural areas, for recreational use	
	Equity of access—navigable for users of varied mobility	Promote the accessibility features of the RVRT in promotional materials and signage
	Discourage existing birdwatchers (regional and visitors) and other less mobile users due to return trip distances	Rest areas and trail interpretation locations and content be developed in consultation with local and regional bird observers Permit use of motorised cycles/scooter/chairs (adequate to carry birdwatching equipment) and hiring facilities for these at some access points
	Tarro connection improves active accessibility for Maitland residents	
	Local recreation option for communities along and adjacent to the route	
	Active local travel along the route, with benefits particularly for Minmi, Seahampton and Stockrington	

Category	Benefit or impact	Enhancement or mitigation
	Connectivity for social infrastructure and commercial services such as Fletcher Community Centre, University of Newcastle, shops and services in Minmi and Kurri Kurri	
	Increased cycle commuting both locally and regionally, especially along the Tarro to Shortland section of the trail Limitations on the utility of the trail as a safe commuter cycling route	Consider lighting of the route (particularly in tunnels and in heavily forested areas) to enhance safety
	Enhanced desirability of Tarro/Beresfield for student accommodation	
Tourism / Economy	Increase tourism by capitalising on demand for active and nature based domestic tourism	
	Attract the high expenditure cycle tourism specific tourist market with benefits primarily in food and beverage sectors and accommodation	Regional cycle tourism promotion - Capitalise on existing and evolving cycle networks in the region to market the region as a cycle tourism destination
	Local and regional employment growth due to tourism expenditure	
	Increased demand for accommodation, including for the new RV overnight parking site close to the trail at Kurri Kurri	
Local Business	Enhanced activation, and synergistic visitation of the Hunter Wetlands Centre, Richmond Vale Rail Museum and attractions and services in Kurri Kurri including the Towns with Heart murals	Joint marketing of the trail and associated “RVRT friendly” businesses to maximise benefits to local business and make users feel welcomed
	Increased revenue for organisations such as the Hunter Wetlands Centre and the Richmond Vale Rail Museum	

Category	Benefit or impact	Enhancement or mitigation
	Stimulation of food and beverage businesses along and proximal to the route, in Tarro/Beresfield, Shortland, Minmi and Kurri Kurri, also existing accommodation, cultural and retail businesses	Run events that bring large diverse user groups, e.g. fun runs, endurance bike races etc. Explore and promote accommodation options along the trail, including RV friendly site at Kurri Kurri and potentially elsewhere on the route
	New business opportunities including: <ul style="list-style-type: none"> • bike hire services • bicycle repairs and sales • accommodation/camping on rural properties • horse riding activities near Stockrington • mobile café services at access points • mobility scooter/chair/electric bike rental • transport for riders and their luggage between end points and/or accommodation 	
Health	Increased physical activity of already active population	
	Accessible and navigable path for all age groups and life stages	Enhance cycling of the route by local residents and visitors – for place activation, health and social capital by providing easily accessible (automated) bike hire services at key points along the route (e.g. Hunter Wetlands Centre, Kurri Kurri, Fletcher)
	Uptake a more regular cycling and walking by the less active and sedentary population, with benefits to overall health including mental health and savings in health care	Bike skills workshops and courses aimed at various age groups, including school aged children, mature adults and retirees. Such events could be timed with other events and programs such as Ride to School Days and Seniors Weeks
	Positive impacts for mental health due to improved access to natural areas	
Place activation	More people in public spaces, creating active, vibrant places. Simultaneously this can increase safety through passive surveillance	Support the formation of new common interest groups or activity groups such as Heart Foundation walking groups, parent/family cycle or walking groups, birdwatching or seniors walking or cycling groups
	Creates opportunities for social interaction and development and strengthening of social networks, whilst addressing feelings of isolation	
	Loss of privacy for nearby properties due to trail use	Fencing or screening of private properties proximal to the route would be implemented to minimise this overlooking and privacy impact

Category	Benefit or impact	Enhancement or mitigation
	Safety in remote rest areas	Provision of adequate waste facilities should be included to avoid nuisance to other users (e.g., through creation of broken glass and scattered waste) if areas used for social gatherings in the evenings
Property impacts	Some property acquisition required however no socio-economic impacts expected with fair compensation.	Property acquisition would be negotiated with affected land owners in order to reach fair compensation and acquisition arrangements

DRAFT

8. Conclusion and recommendations

The RVRT is expected to become a significant tourist attraction within the region, diversifying the already favourable tourism offerings and attracting expenditure which would benefit local communities through increased employment and economic output. As a recreational resource for local and regional communities, the RVRT would also play an important role in facilitating active recreation for communities along the route and beyond, including key growth areas in the Blue Gum Hills planning district. The links would also enhance active local travel, increasing connectivity between communities and their social infrastructure along the route. The route is expected to stimulate local enterprises, particularly in the tourism, and food and beverage sectors, as well as create new opportunities for business and services related to the trail.

The RVRT is expected to provide a venue for recreation for active members of the community, and also increase the activity and frequency of activity for those less active members of the local and regional community. With high rates of inactivity and obesity in the region, potential health benefits, particularly in the local community are considerable. Enhancing recreational use of the trail by the most sedentary members of these communities could generate even greater significant health benefits. Increasing accessibility to natural areas would also be of benefit to the mental health of users.

The RVRT would create a space where diverse users would share infrastructure, creating opportunities for social interaction, both structured and incidental. Increasing familiarity and/or interaction between users can alleviate feelings of isolation in individuals and increase the feeling of connectedness, simultaneously increasing social capital within communities (both spatial communities, and communities of users). With appeal to diverse user groups this social interaction is expected across generations. The RVRT would increase safety and security through passive surveillance and enhance sense of place and identity, which are particularly important in the changing town of Kurri Kurri and the evolving communities of Minmi and Fletcher.

Some properties would be impacted by land impacts or by proximity to the route and impacts this has for their privacy and land use. Appropriate mitigations are expected to mitigate negative impacts whilst the trail also creates some opportunities for new services to trail users.

Construction of the trail would generate some short term noise, vibration, traffic and amenity impacts in the local area. In the most part, these would be temporary (in the order of less than a month) as works progress along the route, however these would be longer and more severe at the Tarro overpass and at bridge locations.

In order to extend local and regional beneficiary groups, to include those with the greatest potential to benefit from the project, and to avoid or ameliorate negative impacts from the RVRT, a number of mitigations and complementary programs are suggested to augment health, access, social connectedness and place activation benefits.

Recommended mitigations are:

- Rest areas and trail interpretation locations and content be developed in consultation with local and regional bird observers
- Permit use of motorised cycles/scooter/chairs (adequate to carry birdwatching equipment) and hiring facilities for these at some access points
- Consider lighting of the route (particularly in tunnels and in heavily forested areas) to enhance safety
- Fencing or screening of private properties proximal to the route would be implemented to minimise this overlooking and privacy impact
- Provision of adequate waste facilities should be included to avoid nuisance to other users (e.g., through creation of broken glass and scattered waste) if areas used for social gatherings in the evenings
- Property acquisition would be negotiated with affected land owners in order to reach fair compensation and acquisition arrangements

Recommended enhancement measures are:

- Explore and promote accommodation options along the trail, including the existing RV friendly site at Kurri Kurri and potentially elsewhere on the route.
- Regional cycle tourism promotion – Capitalise on existing and evolving cycle networks in the region to market the region as a cycle tourism destination.
- Joint marketing of the trail and associated “RVRT friendly” businesses to maximise benefits to local business and make users feel welcomed.
- Promote the accessibility features of the RVRT in promotional materials and signage.
- Enhance cycling of the route by local residents and visitors – for place activation, health and social capital by providing easily accessible (automated) bike hire services at key points along the route (e.g. Hunter Wetlands Centre, Kurri Kurri, Fletcher).
- Bike skills workshops and courses aimed at various age groups, including school aged children, mature adults and retirees. Such events could be timed with other events and programs such as Ride to School Days and Seniors Weeks.
- Support the formation of new common interest groups or activity groups such as Heart Foundation walking groups, parent/family cycle or walking groups, birdwatching or seniors walking or cycling groups.

9. References

- Australian Financial Review (2016) *Improved neighbourhoods generate higher property prices* – James Dunn, Available [Online]: <http://www.afr.com/news/special-reports/202020-vision/generating-higher-property-prices-through-improved-neighbourhoods-20160204-gmlsxf>
- Australian Bureau of Statistics (ABS) 2011, Census data
- Australian Bureau of Statistics (ABS) 2014/15. Household Travel Survey (HTS)
- Australian Government 2013, Walking Riding and Access to Public Transport, quoting Qld Dept of Transport and Main Roads 2010, Benefits of inclusion of active transport in infrastructure projects, by SKM and PWC
- Beeton, S. (2009) *Cycling in Regional Communities: A Longitudinal Study of the Murray to Mountains Rail Trail*, Victoria, Australia, Research Report, La Trobe University, Bundoora
- Beeton, S. (2006) *Regional Communities and Cycling: The Case of the Murray to the Mountains Rail Trail*, Victoria, Australia, School of Sport, Tourism and Hospitality Management, La Trobe University, Research Report
- Celis-Morales, C. Lyall, D. Welsh, P. Anderson, J. Steell, L. Guo, Y, Maldonado, R. Mackay, D. Pell, J. Sattar, N and Gill, J, (2017) *Association between active commuting and incident cardiovascular disease, cancer, and mortality: prospective cohort study*, The British Medical Journal (2017) Vol. 357 j1456
- Centre for Epidemiology and Evidence 2016, *HealthStats NSW*. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. Accessed (26 October 2016)
- Cessnock City Council 2013, Cessnock 2023 Community Strategic Plan
- Cessnock City Council 2014, Cessnock Economic Strategy and Action Plan
- Cessnock City Council 2014, Cessnock Cycle Strategy
- Cessnock City Council 2015, The Economics of Tourism in Cessnock LGA, Nov 2015. www.advancecessnockcity.com.au <http://advancecessnock.com.au/wp-content/uploads/2015/07/Tourism-Economic-modelling-nov-2015.pdf> accessed 26 October 2016
- Cycle Safe Network (undated)
- Deakin University. 2010, Beyond Blue to Green: The Health Benefits of Contact with Nature in a Park Context – Literature Review
- Destination NSW 2016, Travel to the Hunter Tourism Region (year end June 2016)
- Forecast.id. 2013 City of Newcastle Population and Housing Forecasts
- Garcia, C., Chandra, P. & Yi, M. (2010) *Inner Sydney Regional Bicycle Network, Demand Assessment and Economic Appraisal*. Prepared by AECOM for City of Sydney
- GHD 2012, *Cycling Strategy 2021* Lake Macquarie City Council
- GHD 2016, *NCC Richmond Vale Rail Trail Pathway – Traffic and Transport Assessment*
- Hunter Medicare Local, 2014. *Towards a Healthy Hunter: Priorities, Partnerships and Actions*
- Jones, D. N. & Buckley, R. (2001) *Birdwatching tourism in Australia*, CRC Sustainable Tourism
- Ker, I.R. (2004) *Perth Bicycle Network Stage 3: Evaluation*, ARRB Transport Research for Bikewest, Department of Planning and Infrastructure, Western Australia Government, Perth

Ker, I. () Business Case for Investment in. Prepared for RAC WA

Lake Macquarie City Council 2013, Community Strategic Plan 2013 – 2023 Our Shared Vision

Lake Macquarie City Council 2012, Cycling Strategy 2021

Maitland Council 2014, Maitland Bicycle Plan and Strategy 2014

Maitland Council 2013, Maitland Community Strategic Plan 2013

Mike Halliburton Associates and Transplan Pty Ltd 2014, Richmond Vale Rail Trail – Feasibility Analysis

Newcastle City Council 2012, Newcastle Cycling Strategy and Action Plan

Newcastle City Council 2013, Newcastle 2030 Newcastle Community Strategic Plan

Newcastle City Council 2015, Economic Development Strategy 2016-2019

New South Wales Bureau of Crime Statistics and Research 2016 NSW Crime Tool accessed from <http://crimetool.bocsar.nsw.gov.au/bocsar/>

New South Wales Bureau of Transport Statistics 2016, Bureau of Transport Statistics. Journey to Work <http://visual.bts.nsw.gov.au/jtwbasic/#6638,6639,6309,6307,6308>, accessed 17 November 2016

New South Wales Government 2010, New South Wales BikePlan.

New South Wales Treasury (2017) NSW Government Guide to Cost-Benefit Analysis (TPP17-03)

REMPPLAN 2016. Newcastle Economic Profile. http://www.economicprofile.com.au/newcastle/tourism/employment_October_2016.

Ross Planning Pty Ltd 2016, Cessnock City Council Draft Cycling Strategy

Shephard, R.J. 2016, The Economic Benefits of Increased Physical Activity as Seen Through an Objective Lens. in The Objective Monitoring of Physical Activity: Contributions of Accelerometry to Epidemiology, Exercise Science and Rehabilitation

Strava Heat Maps 2016 <http://labs.strava.com/heatmap/#12/-208.42764/-32.86459/blue/bike>. Accessed 12 December 2016

Tourism Research Australia 2015, Growing Cycling Tourism in Victoria, December 2015

Tourism Research Australia 2016, Travel by Australians – year ending June 2016

Transport for NSW (2016) *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives – Transport Economic Appraisal Guidelines*

University of Newcastle 2016, Management Information System – Student and Staff Postcode data, June 2016. Confidential

Wardman, M.R., Tight, M.R. and Page, M. (2007) Factors influencing the propensity to cycle to work. *Transportation Research A*, 41 (4). Pp 339 – 350. ISSN 0965-8564

World Health Organization (2014) Health economic assessment tools (HEAT) for walking and for cycling (Methods and user guide, 2014 update)

DRAFT

Appendices

Appendix A – Demographic indicators

DRAFT

2016	Basic Community Profile File Name (Incl File Extension .xls or .xlsx) SEIFA FILE File Name (Incl File Extension .xls or .xlsx)	GCP_LGA11720.xls			GCP_LGA14650.xls			GCP_LGA15050.xls			GCP_LGA15900.xls			Regional Area	
		Cessnock			Lake Macquarie			Maitland			Newcastle			No	%
		No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	%
	Population:														
G04	Total Persons	55560	100.0%	11.4%	197371	100.0%	40.6%	77905	100.0%	15.9%	155411	100.0%	32.0%	485,647	100.0%
	Age groups:														
G04	0 to 4 years	3792	6.8%	12.4%	11845	6.0%	38.8%	5761	7.5%	18.9%	9113	5.9%	29.9%	30,511	6.3%
G04	5 to 11 years	5511	9.9%	12.8%	17190	8.7%	39.8%	8056	10.4%	18.7%	12319	7.9%	28.6%	43,076	8.9%
G04	12 to 17 years	4178	7.5%	12.1%	14579	7.4%	42.3%	6160	8.0%	17.9%	9571	6.2%	27.8%	34,488	7.1%
G04	18 to 24 years	4786	8.6%	10.7%	15595	7.9%	34.8%	6877	8.8%	14.9%	17806	11.5%	39.7%	44,864	9.2%
G04	25 to 34 years	7154	12.9%	11.3%	21739	11.0%	34.3%	10575	13.7%	16.7%	23897	15.4%	37.7%	63,364	13.0%
G04	35 to 49 years	10479	18.9%	11.3%	36650	18.6%	39.7%	15310	19.8%	16.6%	29939	19.3%	32.4%	92,378	19.0%
G04	50 to 59 years	7104	12.8%	11.3%	26518	13.4%	42.3%	9534	12.3%	15.2%	19581	12.6%	31.2%	62,737	12.9%
G04	60 to 69 years	6651	12.0%	12.0%	24971	12.7%	45.2%	7941	10.3%	14.4%	15707	10.1%	28.4%	55,270	11.4%
G04	70 to 84 years	4852	8.7%	10.4%	22604	11.5%	48.3%	6018	7.8%	12.9%	13337	8.6%	28.5%	46,811	9.6%
G04	85 and over years	1050	1.9%	8.6%	5680	2.9%	46.7%	1278	1.7%	10.5%	4145	2.7%	34.1%	12,153	2.5%
G04	Under 18 years	13481	24.3%	12.5%	43614	22.1%	40.4%	19977	25.8%	18.5%	31003	19.9%	28.7%	108,075	22.3%
G04	15 years and over	44184	79.5%	11.2%	161262	81.7%	40.8%	60404	78.1%	15.3%	129204	83.1%	32.7%	395,054	81.3%
G02	Median Age (years)	38			42			36			37			39	
	Cultural Diversity:														
G01a	Indigenous persons	4007	7.2%	18.5%	8032	4.1%	37.2%	4087	5.3%	18.9%	5476	3.5%	25.3%	21,602	4.4%
G09e/ G09f	Persons born in Non Main English Speaking countries	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	-	0.0%
G13f	Language spoken at home other than English	1055	1.9%		8752	4.4%		3065	4.0%		15386	9.9%		28,258	5.8%
G13e	Speaks English Only	49842	89.7%		180098	91.2%		70392	91.1%		131814	84.8%		432,146	89.0%
G11c	Speaks other language and speaks English very well or well	647	1.2%		5252	2.7%		1868	2.4%		9392	6.0%		17,159	3.5%
	Household Characteristics:														
G31	Family households	14,021	72.4%	11.1%	53,698	73.5%	42.3%	20,758	75.9%	16.4%	38,386	64.0%	30.3%	126,863	70.6%
G31	Lone person household	4,827	24.9%	10.5%	17,610	24.1%	38.4%	5,948	21.7%	13.0%	17,490	29.2%	38.1%	45,875	25.5%
G31	Group household	514	2.7%	7.3%	1764	2.4%	25.0%	659	2.4%	9.4%	4109	6.9%	58.3%	7,046	3.9%
G02	Average household size (number of persons)	2.6			2.5			2.7			2.4			2.5	
	Family Characteristics:														
G25	Total families	14,392		11.1%	55,032		42.4%	21,220		16.4%	39,068		30.1%	129,712	
G25	Couple family with children	5,869	40.8%	10.8%	23,096	42.0%	42.3%	9,533	44.9%	17.5%	16,046	41.1%	29.4%	54,544	42.1%
G25	Couple with children under 15 years	3,986	27.7%	10.8%	14,981	27.2%	40.8%	6,627	31.2%	18.0%	11,153	28.5%	30.4%	36,747	28.3%
G25	Couple with children over 15 years	1,883	13.1%	10.6%	8,115	14.7%	45.6%	2,904	13.7%	16.3%	4,892	12.5%	27.5%	17,794	13.7%
G25	Couple family without children	5,256	36.5%	10.6%	21,711	39.5%	43.8%	7,558	35.6%	15.3%	15,018	38.4%	30.3%	49,543	38.2%
G25	One parent family	3,057	21.2%	12.9%	9,566	17.4%	40.4%	3,840	18.1%	16.2%	7,198	18.4%	30.4%	23,661	18.2%
G25	One parent with children under 15 years	1,779	58.2%	14.8%	4,646	48.6%	38.6%	2,158	56.2%	17.9%	3,447	47.9%	28.7%	12,030	50.8%
G25	One parent with children over 15 years	1,275	41.7%	11.0%	4,920	51.4%	42.3%	1,681	43.8%	14.5%	3,755	52.2%	32.3%	11,631	49.2%
G25	Other family	211	1.5%	10.7%	661	1.2%	33.4%	291	1.4%	14.7%	817	2.1%	41.3%	1,980	1.5%
	Other characteristics:														
G18	Need for assistance	4,001	7.2%	13.0%	13,085	6.6%	42.6%	4,448	5.8%	14.5%	9,197	5.9%	29.9%	30,731	6.3%
	Dwellings:														
G32	Separate House	17,418	81.3%	11.9%	62,390	77.9%	42.6%	23,848	81.0%	16.3%	42,634	64.1%	29.1%	146,290	74.1%
G32	Semi-detached, terrace house, townhouse	1482	6.9%	7.3%	7106	8.9%	35.1%	2435	8.3%	12.0%	9215	13.9%	45.5%	20,238	10.2%
G32	Flat, unit or apartment	293	1.4%	2.6%	2788	3.5%	24.6%	607	2.1%	5.4%	7644	11.5%	67.5%	11,332	5.7%
G32	Other dwellings	57	0.3%	5.7%	630	0.8%	62.5%	108	0.4%	10.7%	213	0.3%	21.1%	1,008	0.5%
G32	Not stated	116	0.5%	12.5%	162	0.2%	17.4%	381	1.3%	41.0%	271	0.4%	29.1%	930	0.5%
G32	Total occupied private dwellings	19,968	90.4%	10.8%	73,075	91.2%	40.6%	27,374	92.9%	15.2%	59,974	90.2%	33.4%	179,791	91.1%
G32	Unoccupied private dwellings	2,047	9.6%	11.6%	7,031	8.8%	39.8%	2,078	7.1%	11.8%	6,499	9.8%	36.8%	17,655	8.9%
	Tenure Type:														
G33	Fully owned	6,380	34.2%	10.7%	27,569	39.1%	46.1%	7,902	29.9%	13.2%	17,928	30.9%	30.0%	59,779	34.4%
G33	Owned with a mortgage	6,839	36.7%	11.0%	26,186	37.1%	42.0%	10,479	39.6%	16.8%	18,773	32.4%	30.1%	62,277	35.9%
G33	Rented (Total)	5,416	29.1%	10.5%	16,794	23.8%	32.6%	8,073	30.5%	15.7%	21,295	36.7%	41.3%	51,578	29.7%
G33	Real estate agent	3,505	64.7%	11.5%	9,175	54.6%	30.2%	5,137	63.6%	16.9%	12,537	58.9%	41.3%	30,354	58.9%
G33	State or territory housing authority	624	11.5%	7.2%	3,215	19.1%	0.0%	1,349	16.7%	#REF!	3,449	16.2%	#REF!	8,637	16.7%
G33	Person not in same household	1,003	18.5%	10.5%	3,326	19.8%	0.0%	1,094	13.6%	0.0%	4,174	19.8%	0.0%	9,597	18.6%
G33	Housing co-operative/community/church group	56	1.0%	5.6%	414	2.5%	0.0%	91	1.1%	0.0%	432	2.0%	0.0%	993	1.9%
G33	Other landlord type	128	2.4%	9.9%	413	2.5%	0.0%	318	3.9%	0.0%	437	2.1%	0.0%	1,298	2.5%
G33	Landlord type not stated	101	1.9%	14.4%	244	1.5%	0.0%	87	1.1%	0.0%	268	1.3%	0.0%	700	1.4%
G33	Other Tenure Type	133	2.5%	8.2%	798	4.8%	49.1%	257	3.2%	15.8%	437	2.1%	26.9%	1,625	3.2%
G33	Not stated	601	11.1%	13.2%	1741	10.4%	38.2%	666	8.2%	14.6%	1,552	7.3%	34.0%	4,560	8.8%
	Individual Income:														
G02	Median Individual Income (\$weekly)	540			609			644			660			623	
G17b	Negative/Nil Income	3,419	7.7%		12,221	7.6%		4,818	8.0%		9,749	7.5%		30,207	7.6%
G17b	\$1-\$149	1,705	3.9%		6,939	4.3%		2,690	4.5%		5,216	4.0%		16,550	4.2%
G17b	\$150-\$299	3,611	8.2%		11,664	7.2%		4,527	7.5%		9,924	7.7%		29,726	7.5%
G17b	\$300-\$399	5,122	11.6%		17,222	10.7%		5,894	9.8%		11,970	9.3%		40,208	10.2%
G17b	\$400-\$499	4,694	10.6%		16,807	10.6%		5,448	9.0%		11,906	9.2%		38,853	9.8%
G17b	\$500-\$649	3,611	8.2%		13,553	8.7%		4,853	8.0%		10,202	7.9%		32,619	8.3%
G17b	\$650-\$799	3,546	8.0%		12,961	8.0%		4,896	8.1%		9,827	7.6%		31,230	7.9%
G17b	\$800-\$999	3,343	7.6%		13,275	8.2%		5,314	8.8%		10,538	8.2%		32,470	8.2%
G17b	\$1,000-\$1,249	3,129	7.1%		13,546	8.4%		4,996	8.3%		10,854	8.4%		32,525	8.2%
G17b	\$1,250-\$1,499	1,870	4.2%		8,605	5.3%		3,355	5.6%		7,581	5.9%		21,311	5.4%
G17b	\$1,500-\$1,749	1,468	3.2%		7,287	4.8%		2,846	4.6%		6,086	5.0%		18,007	4.6%
G17b	\$1,750-\$1,999	1,056	2.4%		5,179	3.2%		2,087	3.5%		4,561	3.5%		12,883	3.3%
G17b	\$2,000-\$2,999	1,754	4.0%		7,096	4.4%		3,137	5.2%		6,831	5.3%		18,818	4.8%
G17b	\$3,000 or more	693	1.6%		3,371	2.1%		1,266	2.1%		3,645	2.8%		8,975	2.3%
G17b	Individual income not stated	5,166	11.7%		11,227	7.0%		4,281	7.1%		9,907	7.7%		30,581	7.7%
	Household Income:														
G02	Median Household income (\$weekly)	1,177			1,313			1,415			1,368			1,331	
G29	Negative/Nil income	229	1.2%		731	1.0%		250	0.9%		744	1.2%		1,954	1.1%
G29	\$1-\$149	107	0.6%		434	0.6%		159	0.6%		357	0.6%		1,057	0.6%
G29	\$150-\$299	447	2.3%		1,341	1.8%		465	1.7%		1,431				

2016	Basic Community Profile File Name (Incl File Extension .xls or .xlsx) SEIFA FILE	GCP_LGA11720.xls			GCP_LGA14650.xls			GCP_LGA15050.xls			GCP_LGA15900.xls			Regional Area	
		Cessnock			Lake Macquarie			Maitland			Newcastle				
		No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	%
G48a	Clerical and administrative	2,402	11.1%	8.4%	12,170	14.3%	42.4%	4,586	13.2%	16.0%	9,555	13.1%	33.3%	28,713	13.4%
G48a	Sales	2,200	10.2%	10.4%	8,597	10.1%	40.8%	3,547	10.2%	16.8%	6,715	9.2%	31.9%	21,059	9.8%
G48a	Machinery operators and drivers	2,838	13.1%	18.0%	5,768	6.8%	36.5%	3,408	9.8%	21.6%	3,781	5.2%	23.9%	15,795	7.4%
G48a	Labourers	3,009	13.9%	14.1%	8,395	9.8%	39.2%	3,696	10.7%	17.3%	6,305	8.6%	29.5%	21,405	10.0%
G48a	Not Stated	358	1.7%	11.3%	1,253	1.5%	39.6%	516	1.5%	16.3%	1,034	1.4%	32.7%	3,161	1.5%
Key Industry:															
G48b	Agriculture, Forestry and Fishing	251	2.2%	25.6%	219	0.5%	22.2%	280	1.5%	28.5%	233	0.6%	23.7%	962	0.9%
G48b	Mining	1,856	16.3%	25.4%	2,014	4.6%	27.5%	2,217	12.3%	30.3%	1,227	3.3%	16.8%	7,314	6.6%
G48b	Manufacturing	1,230	10.8%	11.6%	4,382	10.0%	41.2%	1,940	10.7%	18.2%	3,093	8.3%	29.1%	10,645	9.7%
G48b	Electricity, Gas, Water and Waste Services	237	2.1%	9.5%	1,096	2.5%	44.1%	399	2.2%	16.1%	751	2.0%	30.2%	2,483	2.3%
G48b	Construction	1,560	13.7%	9.3%	7,764	17.7%	46.4%	2,584	14.3%	15.5%	4,814	13.0%	28.6%	16,722	15.2%
G48b	Wholesale Trade	313	2.7%	9.9%	1,347	3.1%	42.6%	532	2.9%	16.8%	972	2.6%	30.7%	3,164	2.9%
G48b	Retail Trade	769	6.8%	8.8%	3,551	8.1%	40.6%	1,470	8.1%	16.8%	2,949	8.0%	33.7%	8,739	7.9%
G48b	Accommodation and Food Services	798	7.0%	11.4%	2,429	5.5%	34.7%	958	5.3%	13.7%	2,817	7.6%	40.2%	7,002	6.3%
G48b	Transport, Postal and Warehousing	684	6.0%	9.9%	2,865	6.5%	41.5%	1,216	6.7%	17.6%	2,141	5.8%	31.0%	6,906	6.3%
G48b	Information Media and Telecommunications	64	0.6%	5.1%	506	1.2%	40.7%	148	0.8%	11.9%	525	1.4%	42.2%	1,243	1.1%
G48b	Financial and Insurance Services	83	0.7%	3.7%	960	2.2%	42.8%	274	1.5%	12.2%	927	2.5%	41.3%	2,244	2.0%
G48b	Rental, Hiring and Real Estate Services	139	1.2%	9.0%	592	1.4%	38.5%	246	1.4%	16.0%	560	1.5%	36.4%	1,537	1.4%
G48b	Professional, Scientific and Technical Services	348	3.1%	5.4%	2,363	5.4%	36.6%	804	4.5%	12.4%	2,947	8.0%	45.6%	6,462	5.9%
G48b	Administrative and Support Services	398	3.5%	12.4%	1,311	3.0%	41.0%	502	2.8%	15.7%	990	2.7%	30.9%	3,201	2.9%
G48b	Public Administration and Safety	549	4.8%	7.5%	2,808	6.4%	38.2%	1,174	6.5%	16.0%	2,813	7.6%	38.3%	7,344	6.7%
G48b	Education and Training	275	2.4%	5.1%	2,159	4.9%	39.7%	616	3.4%	11.3%	2,392	6.5%	44.0%	5,442	4.9%
G48b	Health Care and Social Assistance	441	3.9%	5.9%	2,898	6.6%	38.5%	770	4.3%	10.2%	3,418	9.2%	45.4%	7,527	6.8%
G48b	Arts and Recreation Services	136	1.2%	9.8%	532	1.2%	38.2%	153	0.8%	11.0%	571	1.5%	41.0%	1,392	1.3%
G48b	Other Services	637	5.6%	12.8%	1,998	4.6%	40.1%	919	5.1%	18.5%	1,423	3.8%	28.6%	4,977	4.5%
G48b	Inadequately described/Not stated	624	5.5%	12.6%	1,979	4.5%	39.9%	865	4.8%	17.4%	1,490	4.0%	30.1%	4,958	4.5%
Educational attainment:															
G16	Completion of Year 12 (or equivalent)	11,990	27.1%	7.5%	61,387	38.1%	38.2%	22,310	36.9%	13.9%	64,900	50.2%	40.4%	160,587	40.6%
B40b	Without post-school qualifications	44,184	100.0%	11.2%	161,282	100.0%	40.8%	60,404	100.0%	15.3%	128,204	100.0%	32.7%	395,054	100.0%
Educational institution attending:															
G15	Total	16,844			54,344			23,334			49,427			143,949	
G15	Pre-school attending:														
G15	Pre-school	1,073	6.4%		3,836	7.1%		1,685	7.2%		2,837	5.7%		9,431	6.6%
Infants/Primary education attending:															
G15	Government	3,691	74.6%		12,191	74.8%		4,968	66.7%		8,341	71.9%		29,191	72.4%
G15	Catholic	742	15.0%		2,345	14.4%		1,751	23.5%		2,195	18.9%		7,033	17.4%
G15	Other Non Government	515	10.4%		1,763	10.8%		729	9.8%		1,066	9.2%		4,073	10.1%
G15	Total	4,950	29.4%		16,304	30.0%		7,451	31.9%		11,599	23.5%		40,304	28.0%
Secondary education attending:															
G15	Government	2,390	71.2%		8,746	68.9%		3,122	59.9%		5,583	65.2%		19,841	66.5%
G15	Catholic	452	13.5%		2,036	16.0%		1,348	25.9%		1,671	19.5%		5,507	18.5%
G15	Other Non Government	517	15.4%		1,911	15.1%		741	14.2%		1,306	15.3%		4,475	15.0%
G15	Total	3,357	19.9%		12,691	23.4%		5,210	22.3%		8,557	17.3%		29,815	20.7%
Technical or Further Educational Institution(s):															
G15	Full-time student:														
G15	Aged 15-24 years	158	15.8%		514	14.1%		287	16.8%		571	16.0%		1,530	1.1%
G15	Aged 25 years and over	79	7.9%		358	9.8%		154	9.0%		564	15.8%		1,155	0.8%
G15	Part-time student:														
G15	Aged 15-24 years	323	32.3%		1,265	34.6%		539	31.5%		916	25.7%		3,043	2.1%
G15	Aged 25 years and over	428	42.8%		1,490	40.8%		705	41.3%		1,474	41.4%		4,097	2.8%
G15	Full/Part-time student status not stated	5	0.5%		20	0.5%		25	1.5%		36	1.0%		86	0.9%
G15	Total	1,000	5.9%		3,652	6.7%		1,709	7.3%		3,560	7.2%		9,921	6.9%
University or other Tertiary Institution attending:															
G15	Full-time student:														
G15	Aged 15-24 years	371	2.2%		2,980	45.4%		953	39.6%		6,541	51.7%		10,845	7.5%
G15	Aged 25 years and over	168	1.0%		1,057	16.1%		421	17.5%		2,734	21.6%		4,380	3.0%
G15	Part-time student:														
G15	Aged 15-24 years	101	0.6%		558	1.0%		228	1.0%		792	1.6%		1,679	1.2%
G15	Aged 25 years and over	333	2.0%		1,961	3.6%		798	3.4%		2,544	5.1%		5,626	3.9%
G15	Full/Part-time student status not stated	3	0.3%		19	0.3%		3	0.1%		36	0.3%		61	0.3%
G15	Total	977	5.8%		6,568	12.1%		2,406	10.3%		12,649	25.6%		22,600	15.7%
Other type of educational institution attending:															
G15	Full-time student:														
G15	Part-time student	69	0.4%		243	0.4%		126	0.5%		218	0.4%		656	0.5%
G15	Full/Part-time student status not stated	191	1.1%		752	1.4%		322	1.4%		621	1.3%		1,886	1.3%
G15	Total	278	1.7%		1,012	1.9%		450	1.9%		862	1.7%		2,602	1.8%
G15	Type of educational institution not stated	5,222	11.8%		10,285	6.4%		4,419	7.3%		9,353	7.2%		29,279	7.4%
Mobility:															
B38	Lived at same address 1 year ago	42,279	76.1%		158,538	80.3%		59,698	77.2%		116,905	75.2%		377,420	77.7%
B39	Lived at same address 5 years ago	28,491	51.3%		111,090	56.3%		37,789	48.9%		76,554	49.3%		253,924	52.3%
Transport:															
G30	Households without a motor vehicle	1,002	5.4%		4,186	5.9%		1,387	5.2%		5,550	9.6%		12,125	7.0%
G30	One motor vehicle	6,329	34.2%		24,083	34.1%		8,593	32.4%		22,573	38.9%		61,578	35.5%
G30	Two motor vehicles	7,133	38.5%		27,986	39.6%		10,989	41.5%		21,177	36.5%		67,285	38.8%
G30	Three motor vehicles	2,584	14.0%		9,419	13.3%		3,614	13.6%		6,006	10.4%		21,623	12.5%
G30	Four or more motor vehicles	1,463	7.9%		4,943	7.0%		1,923	7.3%		2,651	4.6%		10,980	6.3%
Journey to work (by one method only):															
B46	Train	86	0.5%		957	1.3%		445	1.5%		757	1.2%		2,245	1.2%
B46	Bus	103	0.6%		965	1.3%		208	0.7%		1,972	3.1%		3,248	1.7%
B46	Ferry	7	0.0%		7	0.0%		3	0.0%		91	0.1%		108	0.1%
B46	Tram (includes light rail)	0	0.0%		0	0.0%		0	0.0%		10	0.0%		17	0.0%
B46	Taxi	21	0.1%		62	0.1%		30	0.1%		113	0.2%		226	0.1%
B46	Car, as driver	15,474	83.9%		62,401	83.3%		25,597	84.4%		49,551	77.3%		153,023	81.5%
B46	Car, as passenger	1,103	6.0%		3,879	5.2%		1,679	6.5%		3,562	5.8%		10,223	5.4%
B46	Truck	269	1.5%		898	1.2%		304	1.0%		389	0.6%		1,860	1.0%
B46	Motorbike/scooter	87	0.5%		519	0.7%		149	0.5%		608	0.9%		1,363	0.7%
B46	Bicycle	30	0.2%		335	0.4%		100	0.3%		1,350	2.1%		1,815	1.0%
B46	Other	87	0.5%		321	0.4%		133	0.4%		310	0.5%		851	0.5%
B46	Walked only	387	2.1%		1,219	1.6%		512	1.7%		2,658	4.5%		4,976	2.6%
B46	Worked at home	797	4.3%		3,329	4.4%		1,168	3.9%		2,555	4.0%		7,849	4.2%
Socio-Economic Indexes for Areas (SEIFA) 2011*:															
Table 2	Index of Advantage/Disadvantage	922.1			985.3			986.1			990.7				
Table 3	Index of Disadvantage	936.4			994.8			992.							

2016	Basic Community Profile File Name (Incl File Extension .xls or .xlsx) SEIFA FILE File Name (Incl File Extension .xls or .xlsx)	GCP_SSC10301.xls			GCP_SSC11833.xls			GCP_SSC11898.xls			GCP_SSC12221.xls			GCP_SSC12514.xls			GCP_SSC12638.xls			GCP_SSC12813.xls		
		Beresfield			Fletcher			Hexham			Kurri Kurri			Maryland			Minni			Mulbring		
		No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct
	Population:																					
G04	Total Persons	3181	100.0%	10.3%	5136	100.0%	16.6%	130	100.0%	0.4%	6044	100.0%	19.5%	7694	100.0%	24.9%	743	100.0%	2.4%	597	100.0%	1.9%
	Age groups:																					
G04	0 to 4 years	195	6.1%	8.9%	516	10.0%	23.6%	6	4.6%	0.3%	382	6.3%	17.5%	513	6.7%	23.5%	57	7.7%	2.6%	23	3.9%	1.1%
G04	5 to 11 years	274	8.6%	9.2%	709	13.8%	23.8%	12	9.2%	0.4%	492	8.1%	16.5%	765	9.9%	25.7%	76	10.2%	2.6%	59	9.9%	2.0%
G04	12 to 17 years	179	5.6%	7.5%	482	9.4%	20.3%	6	4.6%	0.3%	442	7.3%	18.6%	711	9.2%	29.9%	84	11.3%	3.5%	60	10.1%	2.5%
G04	18 to 24 years	280	8.8%	9.3%	439	8.5%	14.6%	8	6.2%	0.3%	548	9.1%	18.2%	744	9.7%	24.7%	90	12.1%	3.0%	40	6.7%	1.3%
G04	25 to 34 years	486	15.3%	11.6%	727	14.2%	17.3%	10	7.7%	0.2%	776	12.8%	18.5%	981	12.8%	23.4%	85	11.4%	2.0%	39	6.5%	0.9%
G04	35 to 49 years	525	16.5%	8.5%	1393	27.1%	22.6%	27	20.8%	0.4%	1091	18.1%	17.7%	1647	21.4%	26.7%	136	18.3%	2.2%	118	19.8%	1.9%
G04	50 to 59 years	385	12.1%	10.4%	435	8.5%	11.8%	21	16.2%	0.6%	734	12.1%	19.9%	1053	13.7%	28.6%	108	14.5%	2.9%	90	15.1%	2.4%
G04	60 to 69 years	360	11.3%	11.0%	288	5.6%	8.8%	29	22.3%	0.9%	753	12.5%	23.1%	784	10.2%	24.1%	69	9.3%	2.1%	95	15.9%	2.9%
G04	70 to 84 years	432	13.6%	17.0%	139	2.7%	5.5%	16	12.3%	0.6%	617	10.2%	24.3%	442	5.7%	17.4%	30	4.0%	1.2%	56	9.4%	2.2%
G04	85 and over years	78	2.5%	15.0%	6	0.1%	1.2%	4	3.1%	0.8%	213	3.5%	41.0%	58	0.8%	11.2%	9	1.2%	1.7%	9	1.5%	1.7%
G04	Under 18 years	648	20.4%	8.6%	1707	33.2%	22.6%	24	18.5%	0.3%	1316	21.8%	17.4%	1989	25.9%	26.4%	217	29.2%	2.9%	142	23.8%	1.9%
G04	15 years and over	2625	82.5%	10.7%	3650	71.1%	14.8%	113	86.9%	0.5%	4955	82.1%	20.2%	6051	78.6%	24.6%	572	77.0%	2.3%	487	81.6%	2.0%
G02	Median Age (years)	40			31			50			40			36			33			43		
	Cultural Diversity:																					
G01a	Indigenous persons	177	5.6%	10.1%	209	4.1%	11.9%	11	8.5%	0.6%	461	7.6%	26.4%	437	5.7%	25.0%	28	3.8%	1.6%	32	5.4%	1.8%
G09e/ G09f	Persons born in Non Main English Speaking countries	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
G13f	Language spoken at home other than English	183	5.8%		736	14.3%		7	5.4%		93	1.5%		737	9.6%		11	1.5%		4	0.7%	
G13e	Speaks English Only	2839	89.2%		4251	82.8%		111	85.4%		5489	90.8%		6732	87.5%		723	97.3%		556	93.1%	
G11c	Speaks other language and speaks English very well or well	73	2.3%		482	9.4%		4	3.1%		60	1.0%		449	5.8%		5	0.7%		3	0.5%	
	Household Characteristics:																					
G31	Family households	861	68.3%	10.6%	1,363	91.0%	16.7%	32	64.0%	0.4%	1,531	66.7%	18.8%	2,097	80.1%	25.7%	201	82.4%	2.5%	163	82.7%	2.0%
G31	Lone person household	355	28.2%	13.8%	100	6.7%	3.9%	18	36.0%	0.7%	711	31.0%	27.6%	469	17.9%	18.2%	34	13.9%	1.3%	34	17.3%	1.3%
G31	Group household	44	3.5%	11.7%	34	2.3%	9.1%	0	0.0%	0.0%	55	2.4%	14.7%	52	2.0%	13.9%	9	3.7%	2.4%	0	0.0%	0.0%
G02	Average household size (number of persons)	2.4			3.4			2.3			2.4			2.8			3.1			2.9		
	Family Characteristics:																					
G25	Total families	891		10.7%	1,396		16.7%	31		0.4%	1,567		18.7%	2,155		25.8%	211		2.5%	165		2.0%
G25	Couple family with children	292	32.8%	7.8%	876	62.8%	23.5%	12	38.7%	0.3%	582	37.1%	15.6%	1,073	49.8%	28.8%	105	49.8%	2.8%	80	48.5%	2.1%
G25	Couple with children under 15 years	183	20.5%	7.1%	692	49.6%	27.0%	6	19.4%	0.2%	388	24.8%	15.2%	700	32.5%	27.3%	66	31.3%	2.6%	50	30.3%	2.0%
G25	Couple with children over 15 years	108	12.1%	9.2%	181	13.0%	15.4%	3	9.7%	0.3%	200	12.8%	17.0%	376	17.4%	32.0%	44	20.9%	3.7%	36	21.8%	3.1%
G25	Couple family without children	359	40.3%	12.5%	361	25.9%	12.6%	12	38.7%	0.4%	567	36.2%	19.7%	665	30.9%	23.1%	62	29.4%	2.2%	67	40.6%	2.3%
G25	One parent family	215	24.1%	13.2%	154	11.0%	9.5%	12	38.7%	0.7%	387	24.7%	23.8%	387	18.0%	23.8%	39	18.5%	2.4%	13	7.9%	0.8%
G25	One parent with children under 15 years	109	50.7%	12.6%	94	61.0%	10.9%	3	25.0%	0.3%	210	54.3%	24.3%	196	50.6%	22.7%	28	71.8%	3.2%	7	53.8%	0.8%
G25	One parent with children over 15 years	104	48.4%	13.8%	64	41.6%	8.5%	3	25.0%	0.4%	173	44.7%	23.0%	184	47.5%	24.5%	19	48.7%	2.5%	4	30.8%	0.5%
G25	Other family	30	3.4%	22.1%	13	0.9%	9.6%	0	0.0%	0.0%	31	2.0%	22.8%	25	1.2%	18.4%	0	0.0%	0.0%	0	0.0%	0.0%
	Other characteristics:																					
G18	Need for assistance	240	7.5%	12.2%	194	3.8%	9.8%	13	10.0%	0.7%	510	8.4%	25.9%	437	5.7%	22.2%	32	4.3%	1.6%	23	3.9%	1.2%
	Dwellings:																					
G32	Separate House	1,115	80.6%	11.3%	1,471	92.5%	14.9%	57	87.7%	0.6%	1,921	77.7%	19.4%	2,390	86.3%	24.2%	228	91.2%	2.3%	195	89.9%	2.0%
G32	Semi-detached, terrace house, townhouse	100	7.2%	10.1%	21	1.3%	2.1%	0	0.0%	0.0%	294	11.9%	29.6%	206	7.4%	20.7%	9	3.6%	0.9%	0	0.0%	0.0%
G32	Flat, unit or apartment	39	2.8%	22.4%	0	0.0%	0.0%	0	0.0%	0.0%	74	3.0%	42.5%	14	0.5%	8.0%	0	0.0%	0.0%	0	0.0%	0.0%
G32	Other dwellings	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	3	0.1%	50.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
G32	Not stated	5	0.4%	15.2%	0	0.0%	0.0%	0	0.0%	0.0%	9	0.4%	27.3%	4	0.1%	12.1%	3	1.2%	9.1%	0	0.0%	0.0%
G32	Total occupied private dwellings	1257	90.8%	11.3%	1500	94.3%	13.5%	57	87.7%	0.5%	2301	93.0%	20.7%	2615	94.5%	23.5%	240	96.0%	2.2%	201	92.6%	1.8%
G32	Unoccupied private dwellings	127	9.2%	15.5%	90	5.7%	11.0%	8	12.3%	1.0%	172	7.0%	21.0%	153	5.5%	18.7%	10	4.0%	1.2%	16	7.4%	2.0%
	Tenure Type:																					
G33	Fully owned	490	39.6%	14.1%	244	16.6%	7.0%	20	35.7%	0.6%	716	32.4%	20.7%	794	31.0%	22.9%	67	29.1%	1.9%	87	44.6%	2.5%
G33	Owned with a mortgage	365	29.5%	8.3%	919	62.6%	20.9%	16	28.6%	0.4%	714	32.3%	16.2%	1,209	47.2%	27.5%	129	56.1%	2.9%	91	46.7%	2.1%
G33	Rented (Total)	381	30.8%	13.0%	304	20.7%	10.4%	20	35.7%	0.7%	780	35.3%	26.6%	557	21.8%	19.0%	34	14.8%	1.2%	17	8.7%	0.6%
G33	Real estate agent	226	59.3%	12.4%	250	82.2%	13.7%	9	45.0%	0.5%	516	66.2%	28.2%	329	59.1%	18.0%	18	52.9%	1.0%	8	47.1%	0.4%
G33	State or territory housing authority	28	7.3%	8.6%	3	1.0%	0.0%	0	0.0%	#REF!	107	13.7%	#REF!	72	12.9%	#REF!	0	0.0%	0.0%	0	0.0%	0.0%
G33	Person not in same household	92	24.1%	15.7%	20	6.6%	0.0%	7	35.0%	0.0%	125	16.0%	0.0%	124	22.3%	0.0%	17	50.0%	0.0%	6	35.3%	0.0%
G33	Housing co- operative/community/church group	11	2.9%	17.2%	3	1.0%	0.0%	0	0.0%	0.0%	9	1.2%	0.0%	12	2.2%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
G33	Other landlord type	5	1.3%	6.0%	16	5.3%	0.0%	3	15.0%	0.0%	17	2.2%	0.0%	20	3.6%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
G33	Landlord type not stated	10	2.6%	29.4%	4	1.3%	0.0%	0	0.0%	0.0%	10	1.3%	0.0%	3	0.5%	0.0%	0	0.0%	0.0%	3	17.6%	0.0%
G33	Other Tenure Type	4	1.0%	8.5%	3	1.0%	6.4%	0	0.0%	0.0%	8	1.0%	17.0%	12	2.2%	25.5%	0	0.0%	0.0%	0	0.0%	0.0%
G33	Not stated	21	5.5%	8.0%	26	8.6%	9.8%	3	15.0%	1.1%	81	10.4%	30.7%	49	8.8%	18.6%	3	8.8%	1.1%	3	17.6%	1.1%
	Individual Income:																					
G02	Median Individual Income (Sweely)	547			863			437			496			628			663			543		
G17b	Negative/Nil Income	181	6.9%		384	10.5%		10	8.5%		360	7.3%		608	10.0%		70	12.3%		50	10.2%	
G17b	\$1-\$149	86	3.3%		165	4.5%		6	5.1%		194	3.9%		279	4.6%		26	4.6%		20	4.1%	
G17b	\$150-\$299	219	8.3%		188	5.2%		10	8.5%		410	8.3%		458	7.6%		37	6.5%		34	7.0%	
G17b	\$300-\$399	344	13.0%		195	5.4%		16	13.6%		637	12.9%		560								

2016	Basic Community Profile		GCP_SSC10301.xls			GCP_SSC11833.xls			GCP_SSC11898.xls			GCP_SSC12221.xls			GCP_SSC12514.xls			GCP_SSC12638.xls			GCP_SSC12813.xls		
	File Name (Incl File Extension .xls or .xlsx): SEIFA FILE		Beresfield			Fletcher			Hexham			Kurri Kurri			Maryland			Minmi			Mulbring		
	File Name (Incl File Extension .xls or .xlsx):		No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct
G17b	\$400-\$499	315	11.9%		205	5.6%		22	18.6%		630	12.7%		528	8.7%		59	6.9%		47	9.6%		
G17b	\$500-\$549	164	10.2%		239	6.6%		7	5.9%		438	8.2%		519	8.6%		48	5.6%		14	6.3%		
G17b	\$650-\$799	277	10.5%		271	7.4%		11	9.3%		454	9.2%		464	7.7%		61	10.7%		21	4.3%		
G17b	\$800-\$999	263	10.0%		300	8.2%		10	8.5%		419	8.5%		596	9.8%		58	10.2%		31	6.4%		
G17b	\$1,000-\$1,249	213	8.1%		351	9.6%		10	8.5%		322	6.5%		596	9.8%		53	9.3%		54	11.1%		
G17b	\$1,250-\$1,499	105	4.0%		270	7.4%		0	0.0%		185	3.7%		383	6.3%		27	4.8%		32	6.6%		
G17b	\$1,500-\$1,749	91	3.4%		262	7.2%		5	4.2%		128	2.6%		280	4.7%		19	3.3%		16	3.3%		
G17b	\$1,750-\$1,999	42	1.6%		194	5.3%		0	0.0%		105	2.1%		188	3.1%		42	5.6%		20	4.3%		
G17b	\$2,000-\$2,999	47	1.8%		354	9.7%		0	0.0%		111	2.2%		250	4.1%		27	4.8%		21	4.3%		
G17b	\$3,000 or more	19	0.7%		109	3.0%		0	0.0%		34	0.7%		50	0.8%		3	0.5%		8	1.6%		
G17b	Individual income not stated	173	6.6%		153	4.2%		11	9.3%		531	10.7%		289	4.8%		20	3.5%		51	10.5%		
Household Income:																							
G02	Median Household Income (\$weekly)	1,032			2,296			916			991			1,501			1,734			1,454			
G29	Negative/Nil income	19	1.5%		10	0.7%		0	0.0%		31	1.3%		33	1.3%		0	0.0%		6	3.0%		
G29	\$1-\$149	3	0.2%		0	0.0%		0	0.0%		10	0.4%		9	0.3%		3	1.2%		0	0.0%		
G29	\$150-\$299	31	2.5%		14	0.9%		0	0.0%		69	3.0%		34	1.3%		4	1.6%		5	2.5%		
G29	\$300-\$399	46	3.7%		8	0.4%		0	0.0%		90	3.9%		55	2.1%		0	0.0%		0	0.0%		
G29	\$400-\$499	121	9.8%		26	1.7%		5	8.9%		252	10.9%		135	5.2%		12	4.8%		11	5.6%		
G29	\$500-\$849	86	6.8%		21	1.4%		7	12.3%		142	6.2%		107	4.1%		4	1.6%		3	1.5%		
G29	\$650-\$799	146	11.6%		42	2.8%		10	17.5%		241	10.5%		182	7.0%		23	9.2%		16	8.1%		
G29	\$800-\$999	105	8.3%		48	3.2%		9	15.8%		206	8.9%		195	7.5%		20	8.0%		9	4.5%		
G29	\$1,000-\$1,249	117	9.3%		72	4.8%		5	8.8%		201	8.7%		222	8.5%		11	4.4%		20	10.1%		
G29	\$1,250-\$1,499	113	9.0%		85	5.7%		3	5.3%		178	7.7%		209	8.0%		15	6.0%		14	7.1%		
G29	\$1,500-\$1,749	70	5.6%		90	6.0%		6	10.5%		127	5.5%		195	7.5%		19	7.6%		8	4.0%		
G29	\$1,750-\$1,999	73	5.8%		105	7.0%		6	10.5%		135	5.9%		188	7.2%		17	6.8%		11	5.6%		
G29	\$2,000-\$2,499	107	8.5%		251	16.8%		3	5.3%		168	7.3%		334	12.8%		35	13.9%		24	12.1%		
G29	\$2,500-\$2,999	60	4.8%		202	13.5%		0	0.0%		99	4.3%		205	7.8%		28	11.2%		10	5.1%		
G29	\$3,000-\$3,499	21	1.7%		143	9.6%		0	0.0%		57	2.5%		116	4.4%		19	7.6%		13	6.6%		
G29	\$3,500-\$3,999	14	1.1%		88	6.9%		0	0.0%		25	1.1%		72	2.8%		7	2.8%		8	4.0%		
G29	\$4,000 or more	19	1.5%		135	9.0%		0	0.0%		39	1.7%		74	2.8%		9	3.6%		4	2.0%		
G29	Partial income stated(c)	78	6.2%		139	9.3%		0	0.0%		140	6.1%		201	7.7%		18	7.2%		31	15.7%		
G29	All incomes not stated(d)	30	2.4%		18	1.2%		3	5.3%		92	4.0%		46	1.8%		7	2.8%		5	2.5%		
Labour Force:																							
G40	Labour force participation	1,394	53.1%	9.5%	2,749	75.3%	18.7%	47	41.6%	0.3%	2,510	50.6%	17.1%	4,003	66.2%	27.3%	386	67.5%	2.6%	274	56.3%	1.9%	
G40	Total employed	1,253	89.9%		2,598	94.5%		46	97.9%		2,263	90.2%		3,747	93.6%		358	92.7%		255	93.1%		
G40	Employed full-time	770	61.5%		1,689	65.0%		29	63.0%		1,364	60.3%		2,278	60.8%		228	63.7%		150	58.8%		
G40	Employed part-time	405	32.3%		805	31.0%		17	37.0%		760	33.6%		1,266	33.8%		117	32.7%		87	34.1%		
G40	Unemployed persons	137	9.8%	12.1%	155	5.6%	13.7%	3	6.4%	0.3%	249	9.9%	22.0%	263	6.6%	23.3%	21	5.4%	1.9%	12	4.4%	1.1%	
G40	Not in labour force	1,114	42.4%		787	21.6%		57	50.4%		2,059	41.5%		1,877	31.0%		177	30.9%		174	35.7%		
Occupation:																							
G48a	Managers	62	4.9%	6.3%	289	11.1%	29.2%	4	8.9%	0.4%	134	5.9%	13.5%	266	7.1%	26.9%	24	6.9%	2.4%	19	7.3%	1.9%	
G48a	Professionals	107	8.5%	5.3%	248	24.8%	31.9%	0	0.0%	0.0%	234	9.0%	10.1%	588	15.7%	29.2%	42	12.1%	2.1%	18	19.3%	2.4%	
G48a	Technicians and trades	213	16.9%	9.0%	370	14.3%	15.7%	3	6.7%	0.1%	459	20.3%	19.5%	638	18.3%	27.0%	76	21.9%	3.2%	59	22.7%	2.5%	
G48a	Community and personal service	146	11.6%	9.2%	262	10.1%	16.6%	8	17.8%	0.5%	277	12.3%	17.5%	449	12.0%	28.4%	44	12.7%	2.8%	27	10.4%	1.7%	
G48a	Clerical and administrative	146	11.6%	8.1%	388	15.0%	21.7%	3	6.7%	0.2%	260	11.5%	14.5%	568	15.2%	31.7%	47	13.5%	2.6%	40	15.4%	2.2%	
G48a	Sales	115	9.1%	8.2%	242	9.3%	17.3%	0	0.0%	0.0%	233	10.3%	16.6%	409	10.9%	29.2%	26	7.5%	1.9%	29	11.2%	2.1%	
G48a	Machinery operators and drivers	144	11.4%	10.6%	164	6.3%	12.1%	10	22.2%	0.7%	289	12.8%	21.4%	327	8.7%	24.2%	41	11.8%	3.0%	15	5.8%	1.1%	
G48a	Labourers	314	24.9%	17.0%	194	7.5%	10.5%	17	37.8%	0.9%	360	15.9%	19.5%	432	11.6%	23.4%	40	11.5%	2.2%	19	7.3%	1.0%	
G48a	Not Stated	16	1.3%	7.1%	42	1.6%	18.7%	0	0.0%	0.0%	44	1.9%	19.6%	61	1.6%	27.1%	7	2.0%	3.1%	4	1.5%	1.8%	
Key Industry:																							
G48b	Agriculture, Forestry and Fishing	21	3.1%	23.3%	3	0.2%	3.3%	7	24.1%	7.8%	15	1.3%	16.7%	11	0.6%	12.2%	3	1.7%	3.3%	9	7.1%	10.0%	
G48b	Mining	33	4.8%	8.0%	70	5.2%	16.9%	0	0.0%	0.0%	127	10.6%	30.7%	70	3.7%	16.9%	9	5.0%	2.2%	16	12.6%	3.9%	
G48b	Manufacturing	123	18.0%	12.8%	145	10.8%	15.1%	3	10.3%	0.3%	159	13.3%	16.6%	251	13.2%	26.2%	26	14.4%	2.7%	16	12.6%	1.7%	
G48b	Electricity, Gas, Water and Waste Services	18	2.6%	9.8%	39	2.9%	21.2%	0	0.0%	0.0%	30	2.5%	16.3%	43	2.3%	23.4%	8	4.4%	4.3%	3	2.4%	1.6%	
G48b	Construction	104	15.2%	10.0%	183	13.6%	17.6%	4	13.8%	0.4%	177	14.8%	17.0%	276	14.5%	26.5%	28	14.4%	2.5%	24	18.9%	2.3%	
G48b	Wholesale Trade	31	4.5%	12.5%	38	2.8%	15.3%	4	13.8%	1.8%	46	3.8%	18.5%	75	3.9%	30.2%	8	4.4%	3.2%	3	2.4%	1.2%	
G48b	Retail Trade	48	7.0%	8.7%	119	8.9%	21.6%	0	0.0%	0.0%	71	5.9%	12.9%	148	7.8%	26.8%	8	4.4%	1.4%	6	4.7%	1.1%	
G48b	Accommodation and Food Services	45	6.6%	11.2%	60	4.5%	15.0%	5	17.2%	1.2%	64	5.3%	16.0%	111	5.8%	27.7%	5	2.8%	1.2%	3	2.4%	0.7%	
G48b	Transport, Postal and Warehousing	59	8.6%	10.4%	80	6.0%	14.2%	3	10.3%	0.5%	88	7.3%	15.6%	154	8.1%	27.3%	24	13.3%	4.2%	3	2.4%	0.5%	
G48b	Information Media and Telecommunications	8	1.2%	18.6%	6	0.4%	14.0%	0	0.0%	0.0%	6	0.5%	14.0%	13	0.7%	30.2%	0	0.0%	0.0%	0	0.0%	0.0%	
G48b	Financial and Insurance Services	7	1.0%	7.7%	23	1.7%	25.3%	0	0.0%	0.0%	8	0.7%	8.8%	24	1.3%	26.4%	3	1.7%	3.3%	0	0.0%	0.0%	
G48b	Rental, Hiring and Real Estate Services	7	1.0%	10.0%	17	1.3%	24.3%	0	0.0%	0.0%	11	0.9%	15.7%	23	1.2%	32.9%	3	1.7%	4.3%	0	0.0%	0.0%	
G48b	Professional, Scientific and Technical Services	21	3.1%	6.6%	101	7.5%	32.0%	0	0.0%	0.0%	38	3.2%	12.0%	88	4.6%	27.8%	6	3.3%	1.9%	3	2.4%	0.9%	
G48b	Administrative and Support Services	18	2.6%	9.0%	29	2.2%	14.4%	0	0.0%	0.0%	50	4.2%	24.9%	54	2.8%	26.9%	5	2.8%	2.5%	0	0.0%	0.0%	
G48b	Public Administration and Safety	22	3.2%	5.3%	114	8.5%	27.4%	3	10.3%	0.7%	47	3.9%	11.3%	140	7.4%	33.7%	11	6.1%	2.6%	6	4.7%	1.4%	
G48b	Education and Training	19	2.8%	6.9%	74	5.5%	26.9%	0	0.0%	0.0%	36	3.0%	13.1%	84	4.4%	30.5%	7	3.9%	2.5%	9	7.1%	3.3%	
G48b	Health Care and Social Assistance	26	3.8%	6.8%	105	7.8%	27.6%	0	0.0%	0.0%	53	4.4%	13.9%	122	6.4%	32.0%	11	6.1%	2.9%	4	3.1%	1.0%	
G48b	Arts and Recreation Services	11	1.6%	14.7%	20	1.5%	26.7%	0	0.0%	0.0%	10	0.8%	13.3%	18	0.9%	24.0%	0	0.0%	0.0%	0	0.0%	0.0%	
G48b	Other Services	37	5.4%	8.7%	65	4.8%	15.3%	0	0.0%	0.0%	83	6.9%	19.5%	109	5.7%	25.6%	13	7.2%	3.1%	13	10.2%	3.1%	
G48b	Inadequately described/Not stated	25	3.7%	7.7%	50	3.7%	15.3%	0	0.0%	0.0%	80	6.7%	24.5%	86	4.5%	26.4%	5	2.8%	1.5%	9	7.1%	2.8%	

2016	Basic Community Profile File Name (Incl File Extension xls or .xlsx): SEIFA FILE File Name (Incl File Extension .xls or .xlsx):	GCP_SSC10301.xls			GCP_SSC11833.xls			GCP_SSC11898.xls			GCP_SSC12221.xls			GCP_SSC12514.xls			GCP_SSC12638.xls			GCP_SSC12813.xls		
		Beresfield			Fletcher			Hexham			Kurri Kurri			Maryland			Minni			Mulbring		
		No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct
	Educational attainment:																					
G16	Completion of Year 12 (or equivalent)	755	28.8%	8.7%	1,924	52.7%	22.3%	19	16.8%	0.2%	1,170	23.6%	13.5%	2,376	39.3%	27.5%	202	35.3%	2.3%	135	27.7%	1.6%
B40b	Without post-school qualifications	2625	100.0%	10.7%	3650	100.0%	14.8%	113	100.0%	0.5%	4965	100.0%	20.2%	6051	100.0%	24.6%	572	100.0%	2.3%	487	100.0%	2.0%
	Educational institution attending:																					
G15	Total	814			1,815			31			1,665			2,329			235			183		
	Pre-school attending:																					
G15	Pre-school	70	8.6%		186	10.2%		0	0.0%		91	5.4%		166	7.1%		19	8.1%		5	2.7%	
	Infants/Primary education attending:																					
G15	Government	181	75.1%		398	58.9%		6	66.7%		392	84.8%		573	79.6%		63	80.8%		37	58.7%	
G15	Catholic	57	23.7%		106	15.8%		3	33.3%		43	9.3%		84	11.7%		4	5.1%		7	11.1%	
G15	Other Non Government	3	1.2%		173	25.7%		0	0.0%		26	5.6%		65	9.0%		8	10.3%		16	25.4%	
G15	Total	241	29.6%		672	37.0%		9	29.0%		462	27.4%		720	30.9%		78	33.2%		63	34.4%	
	Secondary education attending:																					
G15	Government	113	76.4%		264	61.7%		6	200.0%		306	86.0%		481	74.9%		52	76.5%		32	65.3%	
G15	Catholic	30	20.3%		44	10.3%		0	0.0%		23	6.5%		69	10.7%		3	4.4%		5	10.2%	
G15	Other Non Government	6	4.1%		119	27.8%		0	0.0%		24	6.7%		92	14.3%		9	13.2%		15	30.6%	
G15	Total	148	18.2%		428	23.6%		3	9.7%		356	21.1%		642	27.6%		68	28.9%		49	28.8%	
	Technical or Further Educational Institution(a):																					
G15	Full-time student:																					
G15	Aged 15-24 years	15	1.8%		11	0.6%		0	0.0%		19	1.1%		15	0.6%		5	2.1%		0	0.0%	
G15	Aged 25 years and over	9	1.1%		14	0.8%		0	0.0%		6	0.4%		18	0.8%		0	0.0%		0	0.0%	
G15	Part-time student:																					
G15	Aged 15-24 years	16	2.0%		26	1.4%		0	0.0%		44	2.6%		58	2.5%		15	6.4%		3	1.6%	
G15	Aged 25 years and over	31	3.8%		39	2.1%		0	0.0%		50	3.0%		46	2.0%		10	4.3%		3	1.6%	
G15	Full/Part-time student status not stated	0	0.0%		0	0.0%		0	#DIV/0!		3	2.4%		0	0.0%		0	0.0%		0	0.0%	
G15	Total	68	8.4%		84	4.6%		0	0.0%		126	7.5%		140	6.0%		32	13.6%		8	4.4%	
	University or other Tertiary Institution attending:																					
G15	Full-time student:																					
G15	Aged 15-24 years	30	3.7%		102	5.6%		0	0.0%		35	2.1%		141	6.1%		7	3.0%		4	2.2%	
G15	Aged 25 years and over	23	2.8%		48	2.6%		0	0.0%		20	1.2%		78	3.3%		10	4.3%		3	1.6%	
G15	Part-time student:																					
G15	Aged 15-24 years	12	1.5%		20	1.1%		0	0.0%		8	0.5%		33	1.4%		4	1.7%		3	1.6%	
G15	Aged 25 years and over	25	3.1%		78	4.2%		0	0.0%		37	2.2%		83	3.6%		3	1.3%		3	1.6%	
G15	Full/Part-time student status not stated	0	0.0%		0	0.0%		0	0.0%		0	0.0%		3	0.9%		0	0.0%		0	0.0%	
G15	Total	82	10.1%		243	13.4%		3	9.7%		110	6.5%		334	14.3%		22	9.4%		12	6.6%	
	Other type of educational institution attending:																					
G15	Full-time student	3	0.4%		6	0.3%		0	0.0%		4	0.2%		12	0.5%		0	0.0%		0	0.0%	
G15	Part-time student	15	1.8%		21	1.2%		0	0.0%		19	1.1%		32	1.4%		11	4.7%		0	0.0%	
G15	Full/Part-time student status not stated	0	0.0%		0	0.0%		0	#DIV/0!		0	0.0%		0	0.0%		0	0.0%		0	0.0%	
G15	Total	18	2.2%		22	1.2%		0	0.0%		26	1.5%		50	2.1%		10	4.3%		3	1.6%	
G15	Type of educational institution not stated	178	6.8%		175	4.8%		16	14.2%		521	10.5%		281	4.6%		13	2.3%		44	9.0%	
	Mobility:																					
B38	Lived at same address 1 year ago	2,497	78.5%		3,870	75.4%		99	76.2%		4,637	76.7%		6,411	83.3%		647	87.1%		489	81.9%	
B39	Lived at same address 5 years ago	1,846	58.0%	11.1%	1,844	35.9%	11.1%	81	62.3%	0.5%	3,203	53.0%	19.3%	4,695	61.0%	28.2%	502	67.6%	3.0%	362	60.6%	2.2%
	Transport:																					
G30	Households without a motor vehicle	91	7.4%	16.0%	16	1.1%	2.8%	0	0.0%	0.0%	183	8.4%	32.3%	62	2.4%	10.9%	3	1.3%	0.5%	6	3.1%	1.1%
G30	One motor vehicle	525	42.8%	14.3%	245	16.7%	6.7%	19	37.3%	0.5%	875	40.0%	23.9%	759	29.7%	20.7%	49	21.2%	1.3%	36	18.7%	1.0%
G30	Two motor vehicles	400	32.6%	9.4%	823	56.2%	19.4%	21	41.2%	0.8%	725	33.2%	17.1%	1,107	43.4%	26.1%	95	41.1%	2.2%	91	47.2%	2.1%
G30	Three motor vehicles	133	10.8%	9.0%	252	17.2%	17.0%	7	13.7%	0.5%	268	12.3%	18.1%	412	16.1%	27.8%	49	21.2%	3.3%	26	13.5%	1.8%
G30	Four or more motor vehicles	77	6.3%	9.7%	128	8.7%	16.2%	4	7.8%	0.5%	134	6.1%	17.0%	212	8.3%	26.8%	35	15.2%	4.4%	34	17.6%	4.3%
	Journey to work (by one method only):																					
B46	Train	31	2.9%	33.7%	10	0.4%	10.9%	0	0.0%	0.0%	11	0.6%	12.0%	19	0.6%	20.7%	0	0.0%	0.0%	3	1.4%	3.3%
B46	Bus	10	0.9%	6.9%	23	1.0%	15.9%	0	0.0%	0.0%	15	0.8%	10.3%	56	1.7%	38.6%	0	0.0%	0.0%	0	0.0%	0.0%
B46	Ferry	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
B46	Tram (includes light rail)	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
B46	Taxi	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
B46	Car, as driver	878	80.8%	8.6%	2,027	88.6%	20.0%	28	82.4%	0.3%	1,881	86.1%	16.5%	2,849	86.9%	28.0%	283	87.9%	2.8%	189	87.1%	1.9%
B46	Car, as passenger	75	6.9%	10.9%	97	4.2%	14.0%	3	8.8%	0.4%	132	6.8%	19.1%	188	5.7%	27.2%	21	6.5%	3.1%	12	5.5%	1.7%
B46	Truck	14	1.3%	12.6%	8	0.3%	7.2%	3	8.8%	2.7%	17	0.9%	15.3%	25	0.8%	22.5%	3	0.9%	2.7%	3	1.4%	2.7%
B46	Motorbike/scooter	8	0.7%	9.0%	16	0.7%	18.0%	0	0.0%	0.0%	11	0.6%	12.4%	26	0.8%	29.2%	0	0.0%	0.0%	0	0.0%	0.0%
B46	Bicycle	6	0.6%	15.8%	11	0.5%	28.9%	0	0.0%	0.0%	0	0.0%	0.0%	12	0.4%	31.6%	0	0.0%	0.0%	0	0.0%	0.0%
B46	Other	9	0.8%	18.0%	11	0.5%	22.0%	0	0.0%	0.0%	6	0.3%	12.0%	17	0.5%	34.0%	0	0.0%	0.0%	0	0.0%	0.0%
B46	Walked only	33	3.0%	22.1%	13	0.6%	8.7%	0	0.0%	0.0%	44	2.3%	29.5%	22	0.7%	7.7%	5	1.6%	3.4%	0	0.0%	0.0%
B46	Worked at home	22	2.0%	7.8%	72	3.1%	25.4%	0	0.0%	0.0%	35	1.8%	12.4%	63	1.9%	22.3%	10	3.1%	3.5%	10	4.6%	3.5%
	Socio-Economic Indexes for Areas (SEIFA) 2011:																					
Table 2	Index of Advantage/Disadvantage	901.1			1084.5			824.0			875.1			999.7			1084.5			1040.2		
Table 3	Index of Disadvantage	928.9			1077.8			818.0			896.0			1015.9			1077.8			1045.9		

2016	Basic Community Profile File Name (Incl File Extension .xls or .xlsx) SEIFA FILE File Name (Incl File Extension .xls or .xlsx)	GCP_SSC13177.xls			GCP_SSC13911.xls			GCP_SSC13542.xls			GCP_SSC13647.xls			GCP_SSC13771.xls			Local Area	
		Pelaw Main			Seahampton			Shortland			Stanford Merthyr			Tarro			No	%
		No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	%
	Population:																	
G04	Total Persons	1021	100.0%	3.3%	303	100.0%	1.0%	3905	100.0%	12.8%	552	100.0%	1.8%	1645	100.0%	5.3%	30,951	100.0%
	Age groups:																	
G04	0 to 4 years	58	5.7%	2.7%	31	10.2%	1.4%	247	6.3%	11.3%	49	8.9%	2.2%	105	6.4%	4.8%	2,182	7.0%
G04	5 to 11 years	105	10.3%	3.5%	27	8.9%	0.9%	291	7.5%	9.8%	36	6.5%	1.2%	134	8.1%	4.5%	2,980	9.6%
G04	12 to 17 years	74	7.2%	3.1%	26	8.6%	1.1%	206	5.3%	8.7%	19	3.4%	0.8%	91	5.5%	3.8%	2,380	7.7%
G04	18 to 24 years	74	7.2%	2.5%	18	5.9%	0.6%	599	15.3%	19.9%	51	9.2%	1.7%	121	7.4%	4.0%	3,011	9.7%
G04	25 to 34 years	117	11.5%	2.8%	44	14.5%	1.0%	684	17.5%	16.3%	59	10.7%	1.4%	185	11.2%	4.4%	4,193	13.5%
G04	35 to 49 years	195	19.1%	3.2%	65	21.5%	1.1%	606	15.5%	9.8%	91	16.5%	1.5%	267	16.2%	4.3%	6,161	19.9%
G04	50 to 59 years	131	12.8%	3.6%	40	13.2%	1.1%	409	10.5%	11.1%	70	12.7%	1.9%	210	12.8%	5.7%	3,686	11.9%
G04	60 to 69 years	149	14.6%	4.6%	30	9.9%	0.9%	362	9.3%	11.1%	94	17.0%	2.9%	246	15.0%	7.5%	3,259	10.5%
G04	70 to 84 years	102	10.0%	4.0%	7	2.3%	0.3%	410	10.5%	16.1%	55	10.0%	2.2%	236	14.3%	9.3%	2,542	8.2%
G04	85 and over years	7	0.7%	1.3%	0	0.0%	0.0%	86	2.2%	16.6%	9	1.6%	1.7%	40	2.4%	7.7%	519	1.7%
G04	Under 18 years	237	23.2%	3.1%	84	27.7%	1.1%	744	19.1%	9.9%	104	18.8%	1.4%	330	20.1%	4.4%	7,542	24.4%
G04	15 years and over	827	81.0%	3.4%	225	74.3%	0.9%	3267	83.7%	13.3%	452	81.9%	1.8%	1373	83.5%	5.6%	24,607	79.5%
G02	Median Age (years)	41			35			33			43			45			37	
	Cultural Diversity:																	
G01a	Indigenous persons	78	7.6%	4.5%	14	4.6%	0.8%	190	4.9%	10.9%	28	5.1%	1.6%	84	5.1%	4.8%	1,749	5.7%
G09e/ G09f	Persons born in Non Main English Speaking countries	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	-	0.0%
G13f	Language spoken at home other than English	24	2.4%		5	1.7%		519	13.3%		4	0.7%		54	3.3%		2,377	7.7%
G13e	Speaks English Only	962	94.2%		282	93.1%		3252	83.3%		514	93.1%		1490	90.6%		27,201	87.9%
G11c	Speaks other language and speaks English very well or well	22	2.2%		5	1.7%		366	9.4%		3	0.5%		13	0.8%		1,485	4.8%
	Household Characteristics:																	
G31	Family households	273	67.9%	3.3%	84	84.0%	1.0%	952	60.8%	11.7%	156	70.6%	1.9%	446	68.1%	5.5%	8,159	73.5%
G31	Lone person household	119	29.6%	4.6%	16	16.0%	0.6%	464	29.6%	18.0%	62	28.1%	2.4%	190	29.0%	7.4%	2,572	23.2%
G31	Group household	10	2.5%	2.7%	0	0.0%	0.0%	149	9.5%	39.7%	3	1.4%	0.8%	19	2.9%	5.1%	375	3.4%
G02	Average household size (number of persons)	2.4			2.7			2.4			2.3			2.4			2.7	
	Family Characteristics:																	
G25	Total families	272		3.3%	89		1.1%	967		11.6%	163		2.0%	451		5.4%	8,358	
G25	Couple family with children	104	38.2%	2.8%	38	42.7%	1.0%	351	36.3%	9.4%	47	28.8%	1.3%	162	35.9%	4.4%	3,722	44.5%
G25	Couple with children under 15 years	67	24.6%	2.6%	30	33.7%	1.2%	248	25.6%	9.7%	28	17.2%	1.1%	103	22.8%	4.0%	2,561	30.6%
G25	Couple with children over 15 years	34	12.5%	2.9%	13	14.6%	1.1%	103	10.7%	8.8%	18	11.0%	1.5%	60	13.3%	5.1%	1,176	14.1%
G25	Couple family without children	108	39.7%	3.8%	32	36.0%	1.1%	375	38.8%	13.0%	67	41.1%	2.3%	200	44.3%	7.0%	2,875	34.4%
G25	One parent family	57	21.0%	3.5%	17	19.1%	1.0%	218	22.5%	13.4%	37	22.7%	2.3%	87	19.3%	5.4%	1,623	19.4%
G25	One parent with children under 15 years	33	57.9%	3.8%	11	64.7%	1.3%	113	51.8%	13.1%	16	43.2%	1.9%	43	49.4%	5.0%	863	53.2%
G25	One parent with children over 15 years	24	42.1%	3.2%	9	52.9%	1.2%	106	48.6%	14.1%	21	56.8%	2.8%	40	46.0%	5.3%	751	46.3%
G25	Other family	3	1.1%	2.2%	0	0.0%	0.0%	27	2.8%	19.9%	4	2.5%	2.9%	3	0.7%	2.2%	136	1.6%
	Other characteristics:																	
G18	Need for assistance Dwellings:	100	9.8%	5.1%	10	3.3%	0.5%	228	5.8%	11.6%	37	6.7%	1.9%	148	9.0%	7.5%	1,972	6.4%
G32	Separate House	361	81.1%	3.7%	102	93.6%	1.0%	1,222	72.1%	12.4%	205	90.3%	2.1%	616	87.5%	6.2%	9,883	82.9%
G32	Semi-detached, terrace house, townhouse	14	3.1%	1.4%	0	0.0%	0.0%	305	18.0%	30.7%	5	2.2%	0.5%	40	5.7%	4.0%	994	8.3%
G32	Flat, unit or apartment	17	3.8%	9.8%	0	0.0%	0.0%	23	1.4%	13.2%	7	3.1%	4.0%	0	0.0%	0.0%	174	1.5%
G32	Other dwellings	0	0.0%	0.0%	0	0.0%	0.0%	9	0.0%	0.0%	0	0.0%	0.0%	3	0.4%	0.0%	6	0.1%
G32	Not stated	0	0.0%	0.0%	0	0.0%	0.0%	12	0.7%	36.4%	0	0.0%	0.0%	0	0.0%	0.0%	33	0.3%
G32	Total occupied private dwellings	398	89.4%	3.6%	102	93.6%	0.9%	1,561	92.1%	14.1%	221	97.4%	2.0%	655	93.0%	5.9%	11,108	93.1%
G32	Unoccupied private dwellings	47	10.6%	5.7%	7	6.4%	0.9%	134	7.9%	16.4%	6	2.6%	0.7%	49	7.0%	6.0%	819	6.9%
	Tenure Type:																	
G33	Fully owned	142	37.3%	4.1%	25	24.5%	0.7%	475	31.6%	13.7%	95	44.2%	2.7%	311	48.1%	9.0%	3,468	32.1%
G33	Owned with a mortgage	125	32.8%	2.8%	63	61.8%	1.4%	498	32.4%	11.1%	85	39.5%	1.9%	197	30.4%	4.5%	4,401	40.7%
G33	Rented (Total)	114	29.9%	3.9%	14	13.7%	0.5%	541	36.0%	18.4%	35	16.3%	1.2%	139	21.5%	4.7%	2,936	27.2%
G33	Real estate agent	73	64.0%	4.0%	6	42.9%	0.3%	301	55.6%	16.5%	23	65.7%	1.3%	68	48.9%	3.7%	1,827	62.2%
G33	State or territory housing authority	11	9.6%	0.0%	0	0.0%	0.0%	83	15.3%	0.0%	3	8.6%	0.0%	17	12.2%	0.0%	324	11.0%
G33	Person not in same household	30	26.3%	0.0%	3	21.4%	0.0%	123	22.7%	0.0%	6	17.1%	0.0%	33	23.7%	0.0%	586	20.0%
G33	Housing co- operative/community/church group	0	0.0%	0.0%	0	0.0%	0.0%	23	4.3%	0.0%	0	0.0%	0.0%	6	4.3%	0.0%	64	2.2%
G33	Other landlord type	0	0.0%	0.0%	0	0.0%	0.0%	13	2.4%	0.0%	0	0.0%	0.0%	9	6.5%	0.0%	83	2.8%
G33	Landlord type not stated	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	4	11.4%	0.0%	0	0.0%	0.0%	34	1.2%
G33	Other Tenure Type	4	3.5%	8.5%	0	0.0%	0.0%	16	3.0%	34.0%	0	0.0%	0.0%	0	0.0%	0.0%	47	1.6%
G33	Not stated	12	10.5%	4.5%	0	0.0%	0.0%	49	9.1%	18.6%	6	17.1%	2.3%	11	7.9%	4.2%	264	9.0%
	Individual Income:																	
G02	Median Individual Income (Weekly)	486			640			497			518			506			602	
G17b	Negative/Nil Income	55	6.8%		21	9.7%		297	9.1%		23	5.1%		91	6.7%		2,150	8.7%
G17b	\$1-\$149	23	2.8%		9	4.2%		108	3.3%		19	4.2%		49	3.6%		984	4.0%
G17b	\$150-\$299	96	11.8%		14	6.5%		335	10.3%		42	9.3%		129	9.5%		1,972	8.0%
G17b	\$300-\$399	124	15.3%		21	9.7%		421	12.9%		73	16.2%		211	15.5%		2,707	11.0%

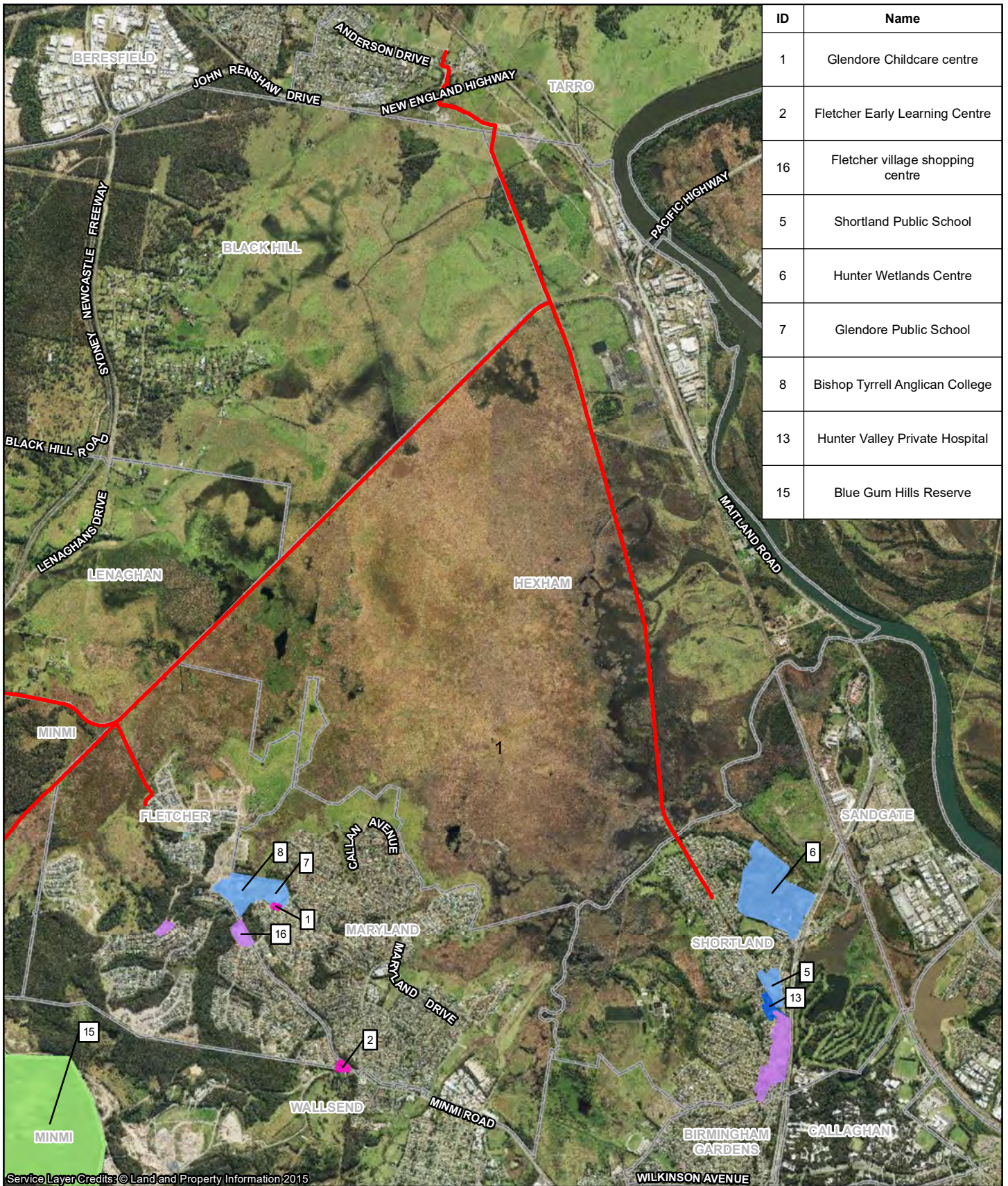
2016	Basic Community Profile			GCP_SSC13177.xls			GCP_SSC13177.xls			GCP_SSC13542.xls			GCP_SSC13647.xls			GCP_SSC13771.xls			Local Area	
	File Name (Incl File Extension .xls or .xlsx)	Pelaw Main			Seahampton			Shortland			Stanford Merthyr			Tarro			No	%		
		No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct				
G17b	\$400-\$499	88	10.8%		18	8.3%		397	12.2%		45	10.0%		147	10.8%		2,481	10.1%		
G17b	\$500-\$549	72	8.9%		15	6.9%		50	9.2%		50	11.3%		125	9.2%		2,100	8.5%		
G17b	\$650-\$799	67	8.2%		23	10.6%		269	8.2%		43	9.5%		128	9.4%		2,089	8.5%		
G17b	\$800-\$999	66	8.1%		15	6.9%		274	8.4%		26	5.8%		126	9.2%		2,184	8.9%		
G17b	\$1,000-\$1,249	66	8.1%		19	8.8%		299	9.2%		29	6.4%		96	7.0%		2,108	8.6%		
G17b	\$1,250-\$1,499	40	4.9%		9	4.2%		157	4.8%		28	6.2%		61	4.5%		1,297	5.3%		
G17b	\$1,500-\$1,749	14	2.2%		10	4.6%		104	3.2%		15	3.3%		41	3.0%		996	4.1%		
G17b	\$1,750-\$1,999	18	2.2%		3	1.4%		57	1.7%		7	1.5%		28	2.1%		690	2.8%		
G17b	\$2,000-\$2,999	14	1.7%		15	6.9%		62	1.9%		10	2.2%		24	1.8%		935	3.8%		
G17b	\$3,000 or more	9	1.1%		7	3.2%		14	0.4%		4	0.9%		6	0.4%		263	1.1%		
G17b	Individual income not stated	61	7.5%		17	7.9%		171	5.2%		38	8.4%		101	7.4%		1,616	6.6%		
G02	Household Income:																			
	Median Household Income (S/weekly)	989			1,458			1,038			1,091			975			1,376			
G29	Negative/Nil income	5	1.3%		0	0.0%		36	2.3%		0	0.0%		6	0.9%		146	1.3%		
G29	\$1-\$149	0	0.0%		0	0.0%		8	0.5%		0	0.0%		3	0.5%		36	0.3%		
G29	\$150-\$299	15	3.8%		3	2.9%		44	2.8%		7	3.2%		7	1.1%		233	2.1%		
G29	\$300-\$399	15	3.8%		3	2.9%		64	4.1%		11	5.1%		16	2.5%		306	2.8%		
G29	\$400-\$499	39	9.8%		3	2.9%		155	9.9%		12	5.6%		92	14.2%		863	7.8%		
G29	\$500-\$649	25	6.3%		7	6.8%		84	5.4%		13	6.0%		40	6.2%		539	4.9%		
G29	\$650-\$799	44	11.1%		5	4.9%		167	10.7%		22	10.2%		88	13.6%		986	8.9%		
G29	\$800-\$999	37	9.3%		10	9.7%		132	8.4%		20	9.3%		54	8.3%		845	7.6%		
G29	\$1,000-\$1,249	34	8.5%		3	2.9%		143	9.1%		22	10.2%		61	9.4%		911	8.2%		
G29	\$1,250-\$1,499	31	7.8%		13	12.6%		113	7.2%		19	8.8%		62	9.6%		855	7.7%		
G29	\$1,500-\$1,749	26	6.5%		12	11.7%		109	7.0%		11	5.1%		35	5.4%		708	6.4%		
G29	\$1,750-\$1,999	28	7.0%		3	2.9%		78	5.0%		11	5.1%		39	6.0%		694	6.2%		
G29	\$2,000-\$2,499	26	6.5%		12	11.7%		150	9.6%		23	10.6%		38	5.9%		1,171	10.5%		
G29	\$2,500-\$2,999	14	3.5%		9	8.7%		75	4.8%		7	3.2%		23	3.5%		732	6.6%		
G29	\$3,000-\$3,499	4	1.0%		5	4.9%		38	2.4%		8	3.7%		15	2.3%		439	4.0%		
G29	\$3,500-\$3,999	3	0.8%		3	2.9%		17	1.1%		5	2.3%		6	0.9%		248	2.2%		
G29	\$4,000 or more	10	2.5%		0	0.0%		12	0.8%		3	1.4%		10	1.5%		315	2.8%		
G29	Partial income stated(c)	26	6.5%		12	11.7%		98	6.3%		10	4.6%		35	5.4%		788	7.1%		
G29	All incomes not stated(d)	16	4.0%		0	0.0%		44	2.8%		12	5.6%		18	2.8%		291	2.6%		
	Labour Force:																			
G40	Labour force participation	427	51.6%	2.9%	155	68.9%	1.1%	1,784	54.6%	12.1%	248	54.9%	1.7%	707	51.5%	4.8%	14,684	59.7%		
G40	Total employed	385	90.2%		147	94.8%		1,635	91.6%		223	89.9%		635	89.8%		13,545	92.2%		
G40	Employed full-time	223	57.9%		92	62.6%		952	58.2%		117	52.5%		379	59.7%		8,271	61.1%		
G40	Employed part-time	142	36.9%		50	34.0%		593	36.3%		97	43.5%		211	33.2%		4,550	33.6%		
G40	Unemployed persons	36	8.4%	3.2%	11	7.1%	1.0%	156	8.7%	13.8%	23	9.3%	2.0%	65	9.2%	5.7%	1,131	7.7%		
G40	Not in labour force	361	43.7%		61	27.1%		1,363	41.7%		178	39.4%		583	42.5%		8,791	35.7%		
	Occupation:																			
G48a	Managers	20	5.0%	2.0%	14	9.0%	1.4%	99	6.1%	10.0%	15	6.8%	1.5%	43	6.7%	4.3%	989	7.3%		
G48a	Professionals	28	7.1%	1.4%	28	16.1%	1.2%	262	16.1%	13.0%	15	6.8%	0.7%	52	8.1%	2.6%	2,046	14.9%		
G48a	Technicians and trades	94	23.7%	4.0%	30	19.4%	1.3%	269	16.5%	11.4%	46	20.1%	1.9%	102	15.9%	4.3%	2,359	17.4%		
G48a	Community and personal service	50	12.6%	3.2%	12	7.7%	0.8%	209	12.8%	13.2%	30	13.1%	1.9%	67	10.5%	4.2%	1,581	11.7%		
G48a	Clerical and administrative	35	8.8%	2.0%	17	11.0%	0.9%	193	11.8%	10.8%	23	10.0%	1.3%	72	11.2%	4.0%	1,792	13.2%		
G48a	Sales	42	10.6%	3.0%	15	9.7%	1.1%	189	11.6%	13.5%	25	10.8%	1.8%	76	11.9%	5.4%	1,401	10.3%		
G48a	Machinery operators and drivers	50	12.6%	3.7%	23	14.8%	1.7%	159	9.7%	11.8%	34	14.8%	2.5%	97	15.1%	7.2%	1,353	10.0%		
G48a	Labourers	70	17.6%	3.8%	14	9.0%	0.8%	228	14.0%	12.3%	37	16.2%	2.0%	122	19.0%	6.6%	1,847	13.6%		
G48a	Not Stated	8	2.0%	3.6%	5	3.2%	2.2%	24	1.5%	10.7%	4	1.7%	1.8%	10	1.6%	4.4%	225	1.7%		
	Key Industry:																			
G48b	Agriculture, Forestry and Fishing	3	1.4%	3.3%	0	0.0%	0.0%	5	0.6%	5.6%	4	3.5%	4.4%	9	2.6%	10.0%	90	1.3%		
G48b	Mining	19	8.6%	4.6%	11	17.2%	2.7%	25	2.9%	6.0%	20	17.7%	4.8%	14	4.1%	3.4%	414	5.9%		
G48b	Manufacturing	43	19.4%	4.5%	7	10.9%	0.7%	105	12.0%	10.9%	19	16.8%	2.0%	62	18.2%	6.5%	959	13.6%		
G48b	Electricity, Gas, Water and Waste Services	9	4.1%	4.9%	0	0.0%	0.0%	22	2.5%	12.0%	3	2.7%	1.6%	9	2.6%	4.9%	184	2.6%		
G48b	Construction	34	15.3%	3.3%	15	23.4%	1.4%	139	15.9%	13.4%	17	15.0%	1.6%	41	12.0%	3.9%	1,040	14.7%		
G48b	Wholesale Trade	8	3.6%	3.2%	0	0.0%	0.0%	17	1.9%	6.9%	8	7.1%	3.2%	10	2.9%	4.0%	248	3.5%		
G48b	Retail Trade	20	9.0%	3.6%	3	4.7%	0.5%	94	10.8%	17.0%	10	8.8%	1.8%	25	7.3%	4.5%	552	7.8%		
G48b	Accommodation and Food Services	15	6.8%	3.7%	3	4.7%	0.7%	54	6.2%	13.5%	10	8.8%	2.5%	26	7.6%	6.5%	401	5.7%		
G48b	Transport, Postal and Warehousing	19	8.6%	3.4%	5	7.8%	0.9%	78	8.9%	13.8%	3	2.7%	0.5%	49	14.4%	8.7%	565	8.0%		
G48b	Information Media and Telecommunications	0	0.0%	0.0%	0	0.0%	0.0%	10	1.1%	23.3%	0	0.0%	0.0%	0	0.0%	0.0%	43	0.6%		
G48b	Financial and Insurance Services	0	0.0%	0.0%	0	0.0%	0.0%	19	2.2%	20.9%	0	0.0%	0.0%	7	2.1%	7.7%	91	1.3%		
G48b	Rental, Hiring and Real Estate Services	0	0.0%	0.0%	0	0.0%	0.0%	4	0.5%	5.7%	0	0.0%	0.0%	5	1.5%	7.1%	70	1.0%		
G48b	Professional, Scientific and Technical Services	3	1.4%	0.9%	3	4.7%	0.9%	43	4.9%	13.6%	3	2.7%	0.9%	7	2.1%	2.2%	316	4.5%		
G48b	Administrative and Support Services	9	4.1%	4.5%	3	4.7%	1.5%	23	2.6%	11.4%	3	2.7%	1.5%	7	2.1%	3.5%	201	2.8%		
G48b	Public Administration and Safety	12	5.4%	2.9%	3	4.7%	0.7%	40	4.6%	9.6%	6	5.3%	1.4%	12	3.5%	2.9%	416	5.9%		
G48b	Education and Training	4	1.8%	1.5%	0	0.0%	0.0%	37	4.2%	13.5%	0	0.0%	0.0%	5	1.5%	1.8%	275	3.9%		
G48b	Health Care and Social Assistance	4	1.8%	1.0%	0	0.0%	0.0%	46	5.3%	12.1%	0	0.0%	0.0%	10	2.9%	2.6%	381	5.4%		
G48b	Arts and Recreation Services	3	1.4%	4.0%	0	0.0%	0.0%	10	1.1%	13.3%	0	0.0%	0.0%	3	0.9%	4.0%	75	1.1%		
G48b	Other Services	9	4.1%	2.1%	7	10.9%	1.6%	59	6.8%	13.8%	4	3.5%	0.9%	27	7.9%	6.3%	426	6.0%		
G48b	Inadequately described/Not stated	8	3.6%	2.5%	4	6.3%	1.2%	43	4.9%	13.2%	3	2.7%	0.9%	13	3.8%	4.0%	326	4.6%		

2016	Basic Community Profile File Name (Incl File Extension .xls or .xlsx): SEIFA FILE File Name (Incl File Extension .xls or .xlsx):	GCP_SSC13177.xls			GCP_SSC13911.xls			GCP_SSC13542.xls			GCP_SSC13647.xls			GCP_SSC13771.xls			Local Area	
		Pelaw Main			Seahampton			Shortland			Stanford Merthyr			Tarro			No	%
		No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	% Within File	% Of Precinct	No	%
	Educational attainment:																	
G16	Completion of Year 12 (or equivalent)	203	24.5%	2.3%	65	28.9%	0.8%	1,377	42.1%	15.9%	95	21.0%	1.1%	325	23.7%	3.8%	8,646	35.1%
B40b	Without post-school qualifications	827	100.0%	3.4%	225	100.0%	0.9%	3,267	100.0%	13.3%	452	100.0%	1.8%	1,373	100.0%	5.6%	24,607	100.0%
	Educational institution attending:																	
G15	Total	252			91			1,255			124			395			9,209	
G15	Pre-school	11	4.4%		10	11.0%		62	25.1%		4	3.2%		35	8.9%		659	7.2%
	Infants/Primary education attending:																	
G15	Government	75	83.3%		25	96.2%		201	77.3%		33	86.8%		101	87.8%		2,083	75.1%
G15	Catholic	9	10.0%		0	0.0%		43	16.5%		9	23.7%		9	7.8%		374	13.5%
G15	Other Non Government	8	8.9%		0	0.0%		12	4.6%		0	0.0%		7	6.1%		318	11.5%
G15	Total	90	35.7%		26	28.6%		260	20.7%		38	30.6%		115	29.1%		2,774	30.1%
	Secondary education attending:																	
G15	Government	53	85.5%		22	81.5%		160	84.2%		19	73.1%		64	85.3%		1,572	75.8%
G15	Catholic	3	4.8%		3	11.1%		20	10.5%		3	11.5%		10	13.3%		213	10.3%
G15	Other Non Government	6	9.7%		3	11.1%		10	5.3%		0	0.0%		3	4.0%		287	13.8%
G15	Total	62	24.6%		27	29.7%		190	15.1%		26	21.0%		75	19.0%		2,074	22.5%
	Technical or Further Educational Institution(a):																	
G15	Full-time student:																	
G15	Aged 15-24 years	0	0.0%		0	0.0%		17	1.4%		0	0.0%		3	0.8%		85	0.9%
G15	Aged 25 years and over	0	0.0%		0	0.0%		14	1.1%		0	0.0%		3	0.8%		64	0.7%
G15	Part-time student:																	
G15	Aged 15-24 years	7	2.8%		0	0.0%		36	2.9%		3	2.4%		11	2.8%		219	2.4%
G15	Aged 25 years and over	7	2.8%		6	6.6%		37	2.9%		4	3.2%		14	3.5%		247	2.7%
G15	Full/Part-time student status not stated	0	0.0%		0	0.0%		0	0.0%		0	0.0%		0	0.0%		3	0.0%
G15	Total	16	6.3%		8	8.8%		101	8.0%		3	2.4%		33	8.4%		619	6.7%
	University or other Tertiary Institution attending:																	
G15	Full-time student:																	
G15	Aged 15-24 years	3	1.2%		0	0.0%		236	18.8%		3	2.4%		12	3.0%		573	6.2%
G15	Aged 25 years and over	3	1.2%		0	0.0%		120	9.6%		5	4.0%		4	1.0%		314	3.4%
G15	Part-time student:																	
G15	Aged 15-24 years	4	1.6%		0	0.0%		32	2.5%		0	0.0%		3	0.8%		119	1.3%
G15	Aged 25 years and over	6	2.4%		4	4.4%		43	3.4%		3	2.4%		11	2.8%		294	3.2%
G15	Full/Part-time student status not stated	0	0.0%		0	0.0%		0	0.0%		0	0.0%		0	0.0%		3	0.2%
G15	Total	14	5.6%		4	4.4%		433	34.5%		7	5.6%		24	6.1%		1,288	14.0%
	Other type of educational institution attending:																	
G15	Full-time student	0	0.0%		0	0.0%		6	0.5%		0	0.0%		3	0.8%		34	0.4%
G15	Part-time student	0	0.0%		4	4.4%		8	0.6%		0	0.0%		9	2.3%		119	1.3%
G15	Full/Part-time student status not stated	0	0.0%		0	0.0%		0	0.0%		0	0.0%		0	0.0%		-	0.0%
G15	Total	4	1.6%		4	4.4%		16	1.3%		3	2.4%		9	2.3%		165	1.8%
G15	Type of educational institution not stated	57	6.9%		22	9.8%		193	5.9%		41	9.1%		105	7.6%		1,646	6.7%
	Mobility:																	
B38	Lived at same address 1 year ago	823	80.6%		243	80.2%		2,936	75.2%		453	82.1%		1,359	82.6%		24,464	79.0%
B39	Lived at same address 5 years ago	623	61.0%	3.7%	180	59.4%	1.1%	1,951	50.0%	11.7%	346	62.7%	2.1%	996	60.5%	6.0%	16,629	53.7%
	Transport:																	
G30	Households without a motor vehicle	25	6.5%	4.4%	3	2.8%	0.5%	136	9.0%	24.0%	10	4.8%	1.8%	32	5.1%	5.6%	567	5.3%
G30	One motor vehicle	147	38.2%	4.0%	30	28.0%	0.8%	615	40.5%	16.8%	75	36.1%	2.0%	293	46.5%	8.0%	3,668	34.1%
G30	Two motor vehicles	143	37.1%	3.4%	43	40.2%	1.0%	524	34.5%	12.3%	73	35.1%	1.7%	199	31.6%	4.7%	4,244	39.5%
G30	Three motor vehicles	47	12.2%	3.2%	18	16.8%	1.2%	167	11.0%	11.3%	36	17.3%	2.4%	67	10.6%	4.5%	1,482	13.8%
G30	Four or more motor vehicles	23	6.0%	2.9%	13	12.1%	1.6%	77	5.1%	9.7%	14	6.7%	1.8%	39	6.2%	4.9%	790	7.3%
	Journey to work (by one method only):																	
B46	Train	0	0.0%	0.0%	0	0.0%	0.0%	9	0.6%	9.8%	0	0.0%	0.0%	9	1.6%	9.8%	92	0.8%
B46	Bus	3	0.9%	2.1%	0	0.0%	0.0%	35	2.5%	24.1%	0	0.0%	0.0%	3	0.5%	2.1%	145	1.2%
B46	Ferry	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	-	0.0%
B46	Tram (includes light rail)	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	-	0.0%
B46	Taxi	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	-	0.0%
B46	Car, as driver	269	81.3%	2.6%	113	84.3%	1.1%	1,183	84.0%	11.6%	174	89.3%	1.7%	484	86.4%	4.8%	10,158	86.0%
B46	Car, as passenger	24	7.3%	3.5%	9	6.7%	1.3%	82	5.8%	11.9%	11	5.6%	1.6%	37	6.6%	5.4%	691	5.9%
B46	Truck	12	3.6%	10.8%	0	0.0%	0.0%	17	1.2%	15.3%	0	0.0%	0.0%	9	1.6%	8.1%	111	0.9%
B46	Motorbike/scooter	0	0.0%	0.0%	3	2.2%	3.4%	22	1.6%	24.7%	0	0.0%	0.0%	3	0.5%	3.4%	89	0.8%
B46	Bicycle	0	0.0%	0.0%	0	0.0%	0.0%	5	0.4%	13.2%	0	0.0%	0.0%	4	0.7%	10.5%	38	0.3%
B46	Other	3	0.9%	6.0%	0	0.0%	0.0%	4	0.3%	8.0%	0	0.0%	0.0%	0	0.0%	0.0%	50	0.4%
B46	Walked only	9	2.7%	6.0%	0	0.0%	0.0%	17	1.2%	11.4%	3	1.5%	2.0%	3	0.5%	2.0%	149	1.3%
B46	Worked at home	11	3.3%	3.9%	9	6.7%	3.2%	34	2.4%	12.0%	9	4.6%	3.2%	8	1.4%	2.8%	283	2.4%
	Socio-Economic Indexes for Areas (SEIFA) 2011*																	
Table 2	Index of Advantage/Disadvantage	883.0			N/A			925.9			907.0			901.1				
Table 3	Index of Disadvantage	901.0			N/A			945.5			928.0			928.9				

*Socio-Economic indexes for Areas (SEIFA) 2011 Census

Appendix B – Local social infrastructure

DRAFT

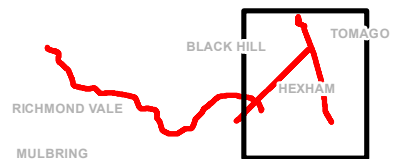


ID	Name
1	Glendore Childcare centre
2	Fletcher Early Learning Centre
16	Fletcher village shopping centre
5	Shortland Public School
6	Hunter Wetlands Centre
7	Glendore Public School
8	Bishop Tyrrell Anglican College
13	Hunter Valley Private Hospital
15	Blue Gum Hills Reserve

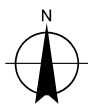
LEGEND

- Suburb boundary
- Proposed route
- Childcare
- Commercial
- Education
- Health
- Parkland

DRAFT



Paper Size A4
 0 300 600 900 1,200
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56

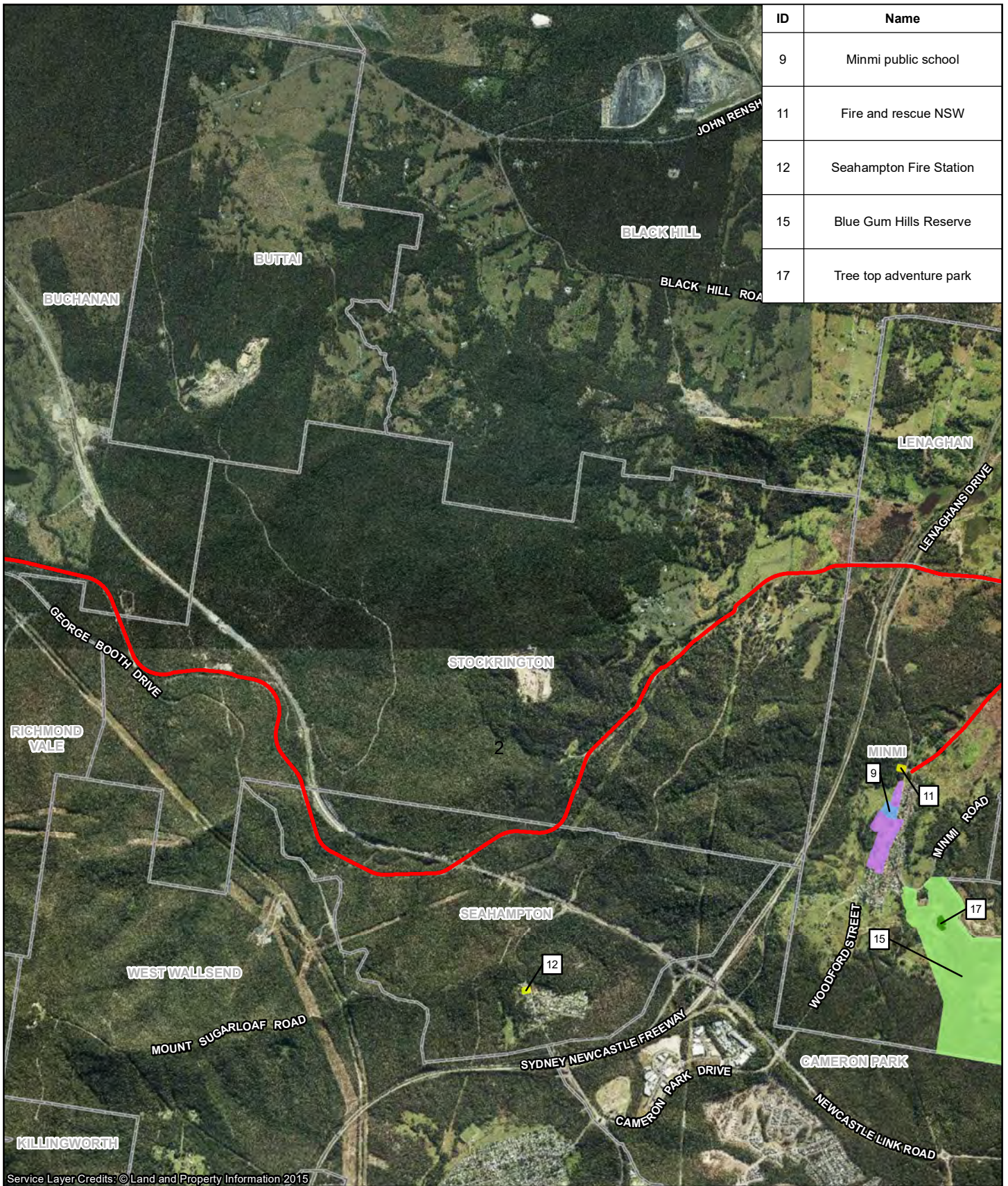


Newcastle City Council
 Richmond Vale Rail Trail

Job Number 22-18317
 Revision A
 Date 21 Dec 2016

Social Infrastructure
 sheet 1 of 3

Figure B1a

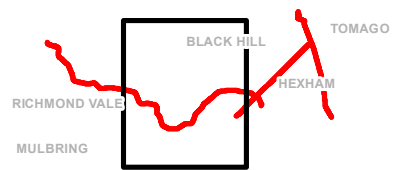


ID	Name
9	Minmi public school
11	Fire and rescue NSW
12	Seahampton Fire Station
15	Blue Gum Hills Reserve
17	Tree top adventure park

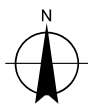
LEGEND

- Suburb boundary
- Proposed route
- Commercial
- Education
- Emergency
- Parkland
- Sport

DRAFT



Paper Size A4
 0 300 600 900 1,200
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56

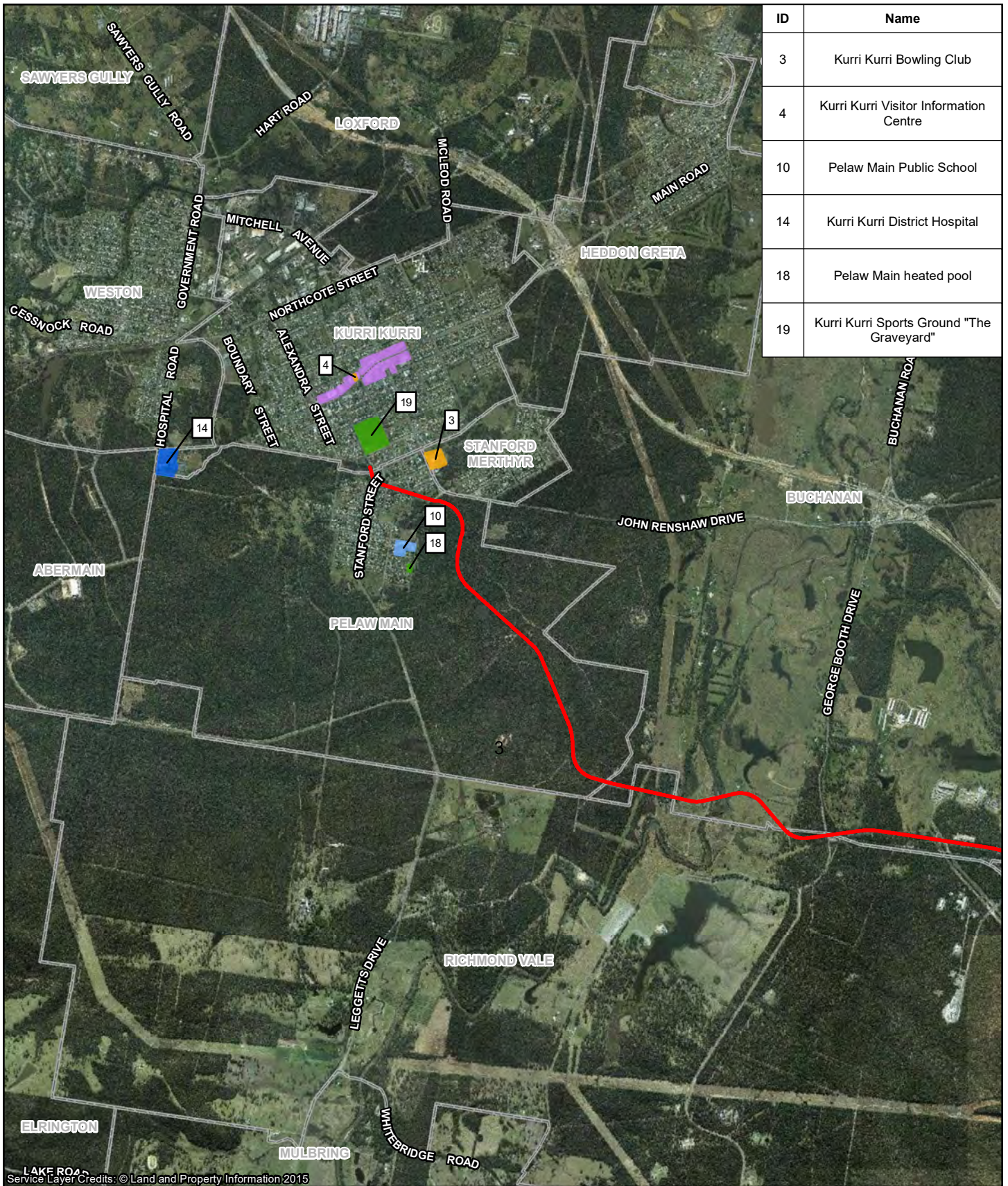


Newcastle City Council
 Richmond Vale Rail Trail

Job Number 22-18317
 Revision A
 Date 21 Dec 2016

Social Infrastructure
 sheet 2 of 3

Figure B1b

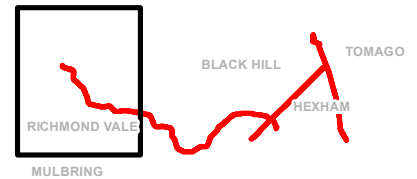


ID	Name
3	Kurri Kurri Bowling Club
4	Kurri Kurri Visitor Information Centre
10	Pelaw Main Public School
14	Kurri Kurri District Hospital
18	Pelaw Main heated pool
19	Kurri Kurri Sports Ground "The Graveyard"

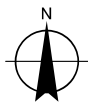
LEGEND

- Suburb boundary
- Proposed route
- Commercial
- Community
- Education
- Health
- Sport

DRAFT



Paper Size A4
 0 300 600 900 1,200
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56

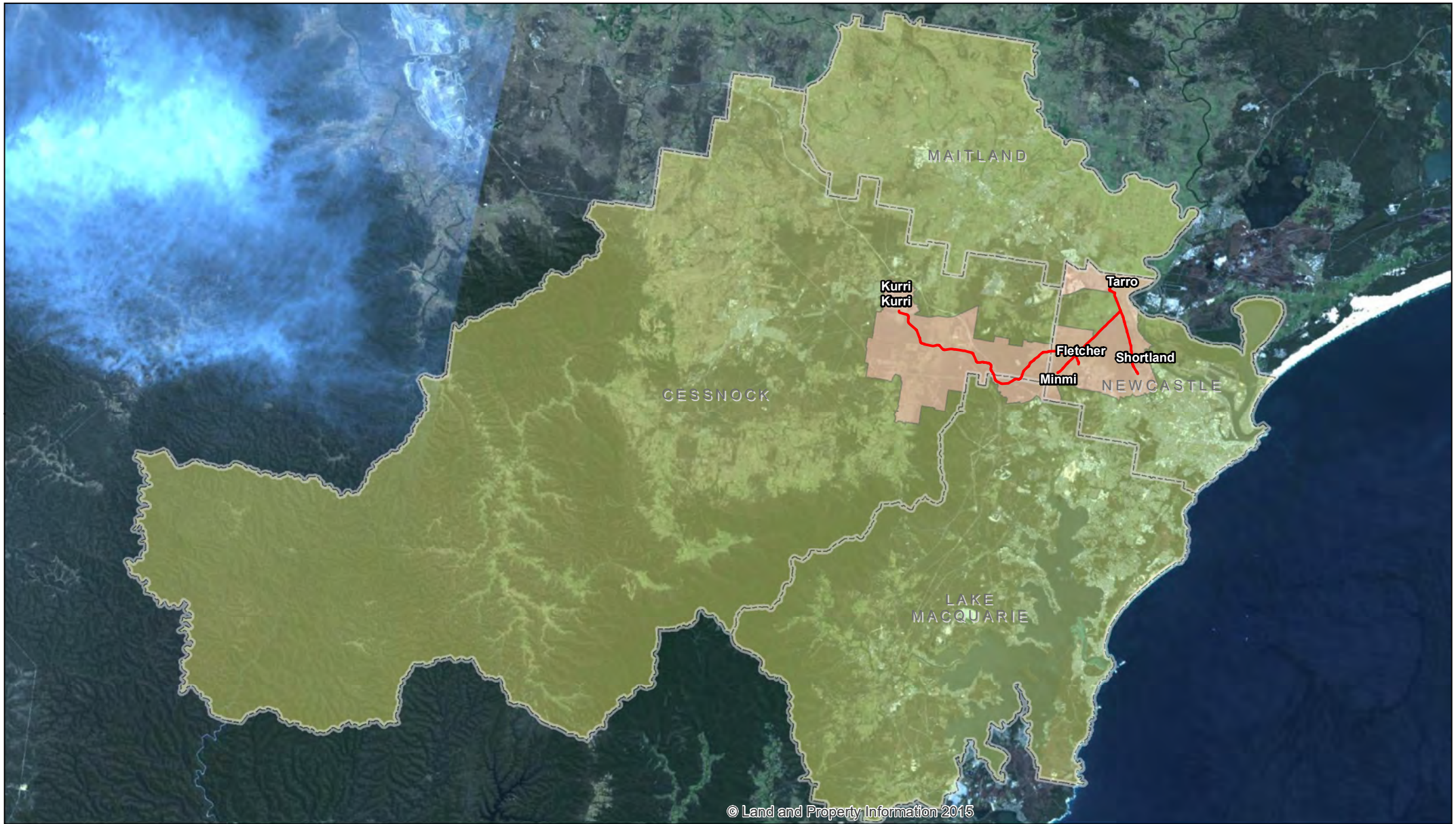


Newcastle City Council
 Richmond Vale Rail Trail

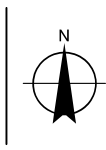
Job Number | 22-18317
 Revision | A
 Date | 21 Dec 2016





Social Infrastructure
 sheet 3 of 3

Figure B1c



Paper Size A4
 0 1.5 3 6 9 12
 Kilometres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



- LEGEND**
-  Proposed route
 -  Local Study Area
 -  Regional study area
 -  LGA boundary

DRAFT



Newcastle City Council
 Richmond Vale Rail Trail
 SocioEconomic Assessment

Job Number	22-18317
Revision	A
Date	08 Dec 2016

Regional Study Area

Figure B2

Appendix C – Community facilities

Category	Name	Address	Description
Maryland			
Education	Maryland Public School	51 John T Bell Dr, Maryland NSW 2287	Coeducational school catering for years K-6. Consisted of roughly 32 staff and 461 students in 2017.
Child care	Maryland care and early education centre	34-36 Boundary Road, Maryland NSW 2287	52 permanent place long day care centre. Operating between 7.30 am to 5.45 pm weekdays.
Child care	Maryland Drive Preschool	179 Maryland Dr, Maryland NSW 2287	Long day care services for children up to school age. Operating Monday to Friday - 8:30 am to 4:30 pm.
Community	Maryland neighbourhood centre	207 Maryland Dr, Maryland NSW 2287	Daily events and classes including services such as psychology, physio, tax assistance, tutoring and IT workshops. Onsite parking available.
Education	Glendore Public School	299 Maryland Dr, Maryland NSW 2287	Coeducational school catering for years K-6. Consisted of roughly 33 staff and 531 students in 2017.
Child care	Glendore Childcare centre	4-8 Glendore Parade, Maryland NSW 2287	48 permanent place catering for years 0 – 6. Operating hours Monday to Friday 7:00 am – 6:00 pm.
Child care	Kindy Patch Maryland	350 Maryland Dr, Maryland NSW 2287	Catering for years 0 – 6. Operating hours Monday to Friday 7:00 am – 6:00 pm.
Religion	New Vine Baptist church	340 Maryland Dr, Maryland NSW 2287	Regular events help including markets and youth events.
Fletcher			
Waste	Summerhill Waste Management centre	141 Minmi Rd, Wallsend NSW 2287	Waste landfill management centre accessed from Minmi Road only. Newcastle City Council facility.
Retail	Fletcher village shopping centre	Cnr Churnwood Dr And Minmi Road, Minmi Rd, Fletcher NSW 2287	Retail shopping precinct including 217 car parks and specialty stores across nearly 5000 metres square. Was opened in 2013.
Pets	Fletcher veterinary practice	4 Beech Close, Fletcher NSW 2287	Animal hospital closed Sunday consisting of roughly 12 staff.

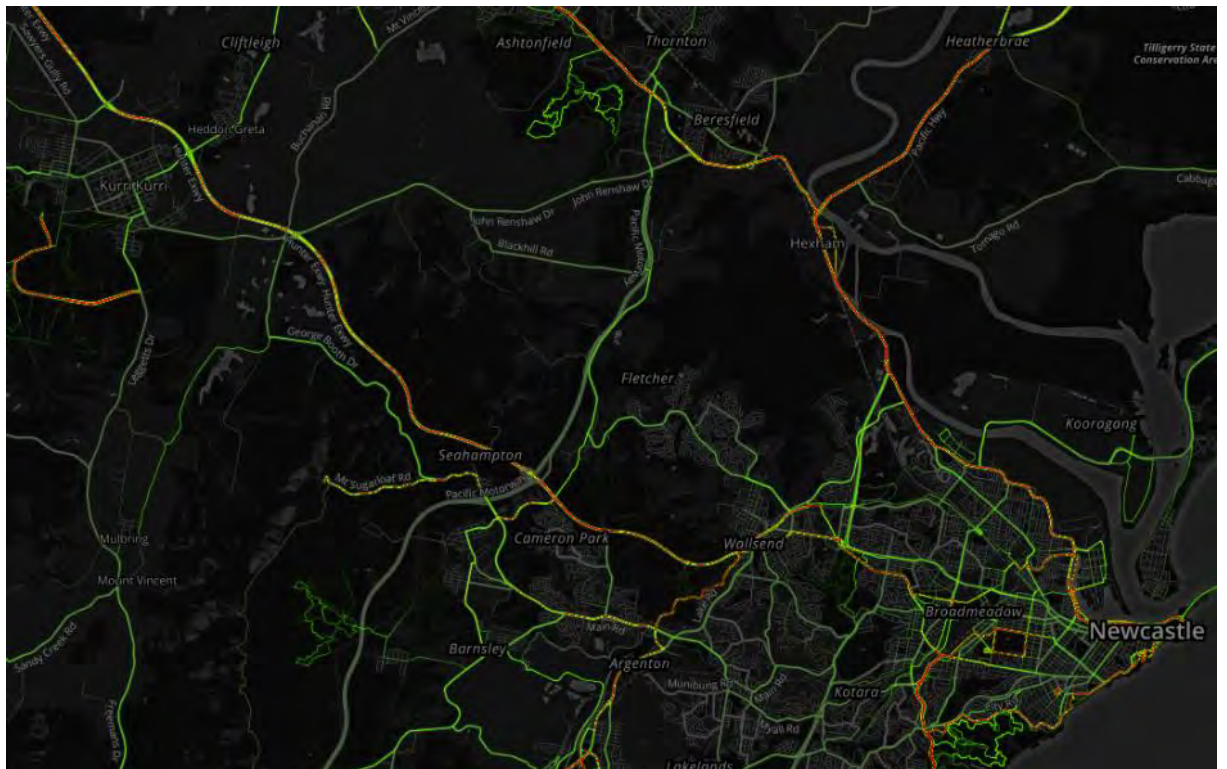
Category	Name	Address	Description
Education	Bishop Tyrrell Anglican College	256 Minmi Rd, Fletcher NSW 2287	Coeducational school catering for years Pre-school – 12 with after School Care programs. Consisted of roughly 73 staff and 766 students in 2017. Operating weekdays 6.30 am to 8.30 am and 3.00 pm to 6.00 pm.
Community	Fletcher community centre	55 Kurraka Dr, Fletcher NSW 2287	Community facility with services Including oval, netball courts, off street parking, playground, cricket potch, tennis courts.
Parkland	Wentworth Creek		Reserve
Parkland	Blue Gum Hills		Reserve
Minmi			
Emergency	Fire and rescue NSW	Woodford St, Minmi NSW 2287	Emergency services accessed from Woodford Street only.
Education	Minmi public school	56 Woodford St, Minmi NSW 2287	Coeducational school catering for years K-6. Consisted of roughly eight staff and 102 students in 2017.
Religion	Coptic Orthodox Church of St Mary and St George	21 Church St, Minmi NSW 2287	
Sport	Tree top adventure park	Blue Gum Hills Regional Park, Minmi Road, Minmi NSW 2287	Recreation facility offering education programs, guided park tours. Facilities on site include toilets, picnic areas, onsite parking, bus parking, BBQ facilities, playground, merchandise and refreshments (no food).
Hexham			
Community	Hexham Bowling Club	290 Old Maitland Rd, Hexham NSW 2322	Bowling club offering bowls tournaments, Bistro, and function centre. Facility open seven days, with weekly bingo and raffle nights. Also owns and operates Hexham Cottages in Harrington for use by club members.
Seahampton			
Emergency	Seahampton Fire Station	40 George Booth Dr, West Wallsend NSW 2286	Emergency services accessed from George Booth Drive only.

This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

Category	Name	Address	Description
Pelaw Main			
Education	Pelaw Main Public School	6-16 Abermain St, Pelaw Main NSW 2327	Coeducational school catering for years K-6. Consisted of roughly 18 staff and 249 students in 2017.
Sport	Pelaw Main heated pool	1 Neath street, Richmond street entrance, Pelaw Main NSW 2327	
Stanford Merthyr			
Education	Stanford Merthyr Infants School	2A Maitland St, Stanford Merthyr NSW 2327	Coeducational infant school catering for years K-2. Consisted of roughly 7 staff and 67 students in 2017.
Kurri Kurri			
Community	Kurri Kurri Bowling Club	3 Tarro St, Kurri Kurri NSW 2327	Community facility operation Sunday to Thursday: 9:00 am to 9.30 pm, Friday: 9:00 am to 11.30 pm and Saturday: 9:00 am to 11:00 pm. Includes a function centre, weekly bowling tournaments, Social events every night and restaurant.
Sport	Kurri Kurri Sports Ground "The Graveyard"	Allworth Street	Outdoor sports ground including eight tennis courts, cricket pitch, sport club houses. Designated parking available.
Education	Kurri Kurri Public School	202 Lang St, Kurri Kurri NSW 2327	Coeducational school catering for years K-6. Consisted of roughly 46 staff and 656 students in 2017.
Community	Kurri Kurri Visitor Information Centre	199 Lang St, Kurri Kurri NSW 2327	Local information session and café located in the centre of town amongst retail precinct. Hosts the annual Kurri Kurri nostalgia festival.
Retail	Coles super market	259/277 Lang St, Kurri Kurri NSW 2327	Includes retail strip with specialty stores and chains running along Lang Street.
Community	Kurri Kurri community centre	251 Lang St, Kurri Kurri NSW 2327	Service include: home maintenance, youth services, community care, sporting activities, men's shed, room hire and recreational events.
Religion	Kurri Kurri Seventh-day Adventist Church	Allworth Street & Maitland St, Kurri Kurri NSW 2327	Regular events include weekly bible study, and church lunch activities.

Category	Name	Address	Description
Child care	Mission Australia Early Learning Kurri Kurri	168-170 Rawson St, Kurri Kurri NSW 2327	Operating hours include Monday to Friday: 7:00 am to 6:00 pm, catering for children aged six weeks to five years old.
Religion	Catholic Church Of The Holy Spirit	100 Barton St, Kurri Kurri NSW 2327	Operating hours include Monday to Tuesday 9:00 am to 4.30 pm, and Wednesday to Friday 9:00 am to 2:00 pm
Parkland	Birralee Park		
Education	Kurri Kurri High School	Deakin and Stanford Streets, Kurri Kurri NSW 2327	Coeducational school catering for years 7-12. Consisted of roughly 84 staff and 830 students in 2017.
Education	Hunter TAFE, Kurri Kurri Campus	McLeod Rd, Kurri Kurri NSW 2327	TAFE campus specialising in: <ul style="list-style-type: none"> • Transport and Mining • Animal and Equine Studies • Food Services and Hospitality • Manufacturing and Engineering • Environment, Horticulture and Primary Industries • Tourism, Events and Outdoor Recreation Includes 135 hectares of park and native bushland, 22 classrooms, and 14 labs. Student accommodation available.
Sport	Kurri Kurri Aquatic and Fitness Centre	Boundary Street, Boundary St, Kurri Kurri, NSW 2327, 2327	Services include a 25 metre pool and swim school as well as personal training services and group exercise classes.
Parkland		Grieve Street	Club house and toilet block located at park.
Parkland		Cnr Greta Street and Rawson Street	Playground, two cricket pitches, two cricket cages and toilet block located at park.
Parkland		Dill Street	
Parkland	Margaret Johns Park	158 Northcote St, Kurri Kurri NSW 2327	

Appendix D – Strava heat maps



Recorded bicycle activity (Strava 2016)

DRAFT

GHD

Level 15

133 Castlereagh Street

T: 61 2 9239 7100 F: 61 2 9239 7199 E: sydmail@ghd.com

© GHD 2018

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

2218317-

11512/<https://projects.ghd.com/OC/Newcastle/nccrichmondvalerail/Delivery/Documents/2218317-REP C-SEIA.docx>

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
A	A Mithieux P Dellow					22/12/2016
B	A Mithieux P Dellow					21/06/2017
C	A Mithieux P Dellow	L King L Harding				29/03/2018

www.ghd.com



This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.