



7. Overview of the Study Focus Area



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The following chapter describes the constraints, issues, and opportunities identified within the study focus area. This includes a summary of the feedback from the community consultation, and a detailed description of the study focus area. The study focus area was divided into five segments, to assist in the description and documentation of constraints and the future route evaluation process. The segments were defined at points where it was considered possible to interchange between route options, and therefore allow the study team to assess each individual route segment and identify a preference for each segment. The segments of the study focus area are shown in Figure 7.

The study focus area was divided into five segments, to assist in the route evaluation process. These were:

- Landsborough: Segment A
- Mooloolah: Segment B
- Eudlo: Segment C
- Palmwoods to Woombye: Segment D
- Nambour: Segment E

The segments were defined at points where it was considered possible to interchange between route options, and therefore allow the study team to assess each individual route segment and identify a preference for each segment.

Constraints and issues within each segment were reviewed and documented, which provided the basis for the evaluation of route options within each segment.

The relative performance of the route options were then compared on a segment by segment basis. That is, all route options within segment A were compared against each other on the basis of environmental, social, transport, land use and planning, economic and engineering criteria to identify the best performing route for segment A. This process was then repeated for segments B through E.

7.1 Study Focus Area Consultation

Consultation with the community during the community information sessions in November and December 2007 helped the study team to further understand the constraints and issues existing within the study focus area.

The study team received 453 written submissions in relation to the study focus area, submitted via post and email. Of these submissions 54% were from respondents living within the study focus area, with the balance submitted by government agencies, the broader community and businesses in the region. Key issues addressed by the written submissions are outlined below, with location specific issues described in sections 7.2 to 7.6 of this report.

7.1.1 Stations

Submissions indicated that the option of removing or relocating railway stations in both Mooloolah and Eudlo was of high concern to the community. The impact upon the stations' historical and cultural heritage, level of public transport services and the overall effect on townships were common concerns from respondents. The current locations of both stations were suggested to be suitable and easily accessible as the township has been centred around these facilities.

7.1.2 Eudlo and Mooloolah Eastern/Western Option

Many submissions expressed concern that the study focus area was split in two in several areas, subsequently dividing the community in two.

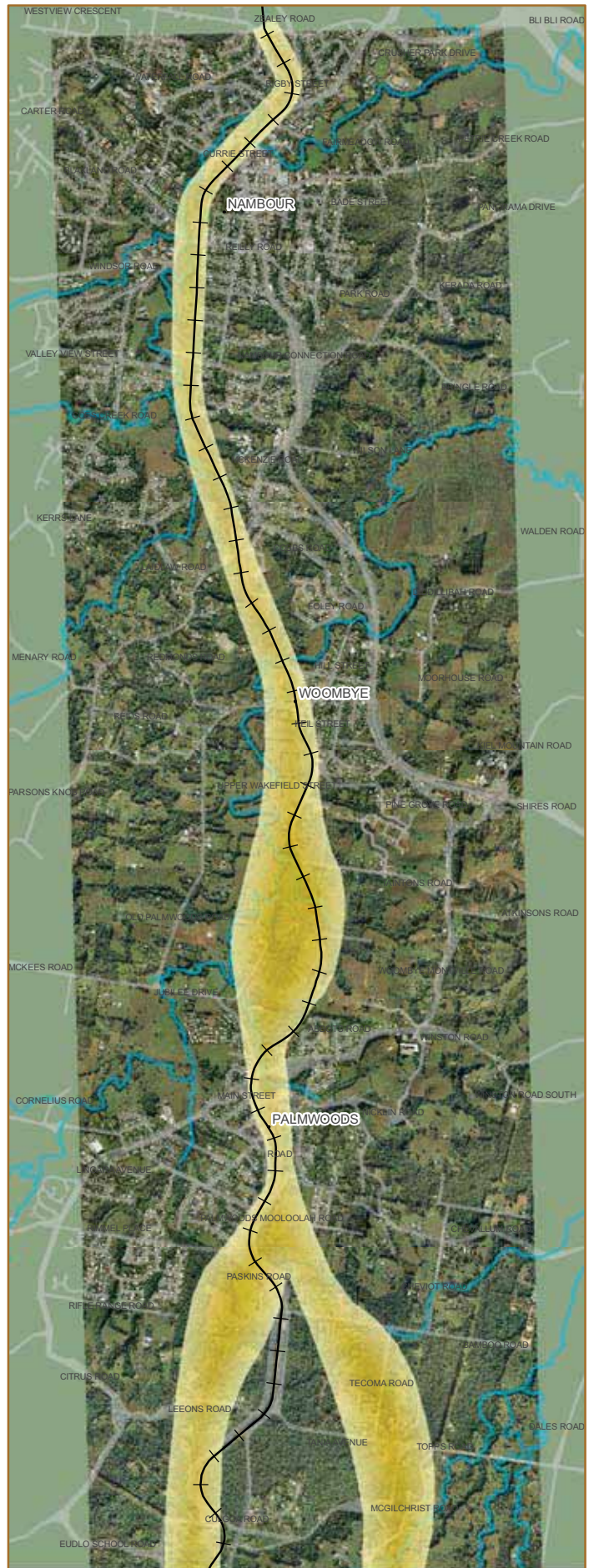
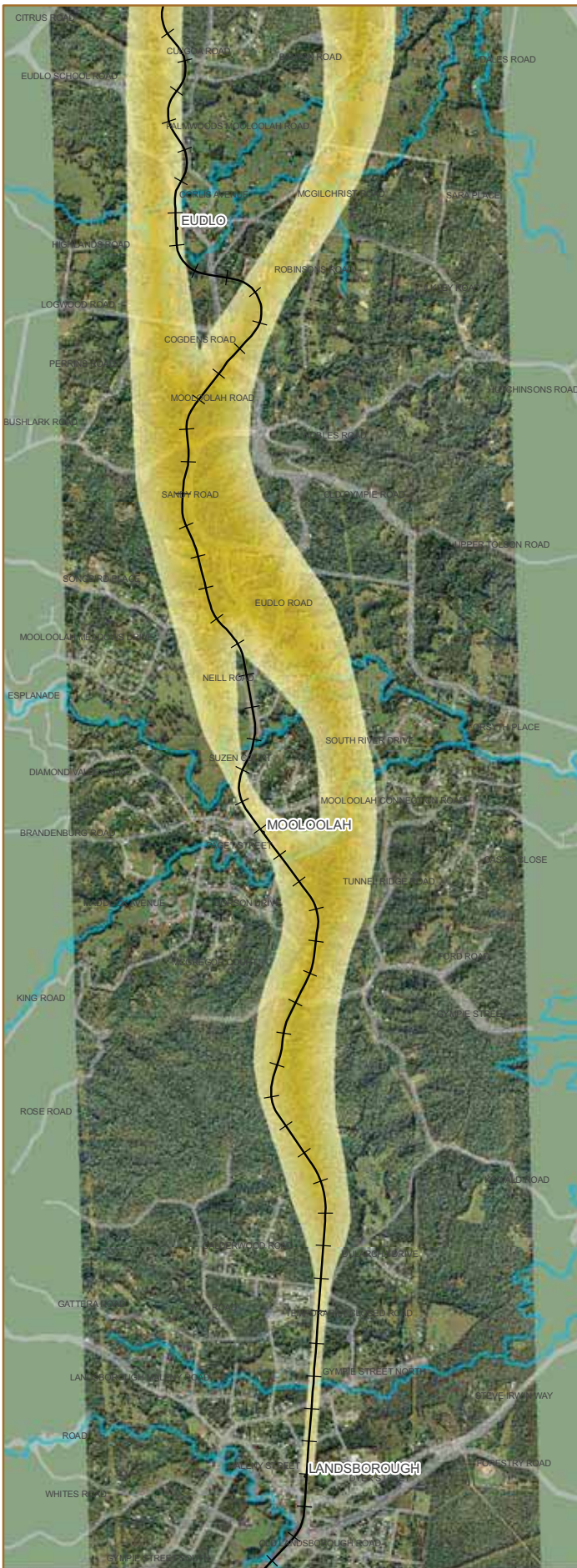
7.1.3 Environmental Concerns

Excluding property impacts, environmental impacts were of greatest concern, particularly areas of Dularcha National Park, bushland south of Eudlo, Eudlo Creek National Park, and aquatic ecosystems within these areas such as the Mooloolah and South Mooloolah Rivers. Submissions suggested these areas of high ecological significance should be avoided and sensitive design incorporated in all aspects.

Owners of properties containing features of ecological importance were concerned that if impacted upon, biological diversity will diminish locally and regionally. A number of land owners are members of 'Land for Wildlife' and have rehabilitated and increased the ecological levels of their land for several years. Flooding was also a concern raised by many respondents as the low lying regions on the eastern options are flood prone and often cut houses off from accessing roads and the townships of Mooloolah and Eudlo during periods of heavy rain.

7.1.2 Property Impacts

Concerns about property impacts, including financial, medical, lifestyle, environmental, and visual were frequently raised in submissions.



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Legend

- Existing Rail Line
- Study Focus Area
- Creeks
- Roads

Landsborough to Nambour Rail Corridor Study

Figure 7

The Study Focus Area

0 250 500 750 1,000 Meters

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7.2 Segment A - Landsborough

Segment A of the study focus area begins immediately to the north of Landsborough Station, and is approximately 90 m wide at this point. Segment A traverses the northern part of Landsborough township, until it reaches Dularcha National Park, where it broadens to up to 600 m wide, before tapering back in to 530 m at its northernmost extent. This segment ends approximately 300 m to the north of Rose Road, just to the south of Mooloolah township.

The existing rail corridor is contained entirely within this segment of the study focus area. Addlington Creek crosses the study focus area from east to west, and the existing rail tunnel under Rose Road is within this segment of the study focus area.

The segment includes two distinctly different areas, namely the urban settlement of Landsborough and, north of Beech Road, the dense vegetation and steep inclines of the Dularcha National Park.

Segment A and its significant features are shown in Figure 7.2 and also drawings CS001 to CS005 of Appendix C.

7.2.1 Community Feedback

The following comments and concerns relevant to segment A of the study focus area were raised in submissions to the study team:

- Platform arrangements at Landsborough should be upgraded to assist with changing trains
- Preference for the route departing Landsborough Station to be to the east of the existing track
- Several submissions suggested sound barriers were necessary now on the western side of the existing railway, to the north of Landsborough Station
- Conservation significance of Dularcha National Park
- ‘Land for Wildlife’ properties present in the study focus area
- The land above the tunnel at Rose Road is significant as a wildlife corridor
- Land on the far eastern side of the study focus area is steep and undulating.

7.2.2 Ecology

Key features of ecological significance within segment A of the study focus area are summarised below.

The Biodiversity Planning Assessment (BPA) maps indicate that there is a concentration of State significant area within segment

A, particularly around Dularcha National Park and Mooloolah Forest Reserve. These areas are recognised particularly for these criteria:

- Large tracts of vegetation
- Natural condition
- High connectivity
- Buffers endangered vegetation
- Core habitat for EVR species
- Bioregional Corridor.

Regional Ecosystems in this area are dominated by ‘Of Concern’ and ‘Not of Concern’ vegetation. These are concentrated around the conservation areas of Dularcha National Park and Mooloolah Forest Reserve.

To date the results from vegetation surveys have indicated several potential discrepancies in the regional ecosystem mapping. Areas that have been mapped as ‘Of Concern’ RE12.9-10.16 have been found to be more aligned with ‘Not of Concern’ RE12.9-10.17d. There is also one small, crescent shaped area on the ridge line demarcating the boundary of Caloundra and Maroochy Councils. This change will impact the area of Dularcha National Park and its surrounds. There is one area in the northern end of Dularcha National Park where the mapping indicates RE12.9-10.16, but field observations have confirmed Endangered RE 12.3.1. This area of riparian rainforest spans across the existing alignment following a drainage line. This amendment to the mapping has not yet been confirmed with the Queensland Herbarium and as such this alteration has not been included in calculations regarding regional ecosystems.

The majority of creek and drainage lines are also vegetated. Of note, there is an area of endangered vegetation located along Addlington Creek.

Protected tenures within segment A include Dularcha National Park, and Mooloolah (Marie Higgs) Conservation Park. The existing rail track runs through Dularcha National Park. Mooloolah Forest Reserve is located to the west of Dularcha National Park and is outside the study focus area. Mooloolah Conservation Park is situated to the northeast of the existing alignment.

Addlington Creek traverses segment A. It is significant in that it supports endangered vegetation and a species listed as endangered under the EPBC Act 1999 (*Mixophyes iteratus*, Giant Barred Frog). The majority of the minor drainage lines contribute to the Ewen Maddock Dam catchment area.

Some areas in Landsborough and just to the north of the township have been mapped as Urban Koala Habitat in the *Nature Conservation (Koala Conservation) Plan 2006*.



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- Property Boundaries
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Figure 7.2
Landsborough (Segment A)

0 200 400 600 800 Meters

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Significant Species recorded in the area are generally concentrated in and around Dularcha National Park and Mooloolah Forest Reserve. They include six species listed under the *Nature Conservation Act 1994*:

- *Adelotus brevis* (Tusked Frog) – Vulnerable
- *Crinia tinnula* (Wallum Froglet) – Vulnerable
- *Eroticoscincus graciloides* (Elf Skink) – Rare
- *Tyto tenebricosa* (Sooty Owl) – Rare
- *Lophoictinia isura* (Square-tailed Kite) – Rare
- *Phascolarctos cinereus* (Koala) – Vulnerable (SE Qld).

The recent fauna survey also identified one species listed as endangered under the EPBC Act 1999, *Mixophyes iteratus* (Giant Barred Frog) and one species listed as migratory *Rhipidura rufifrons* (Rufous Fantail).

7.2.3 Land use and planning

The railway bisects Landsborough, however the main business centre is located on the west of the railway within a short walk of the station. The business centre comprises a mix of small-scale commercial and community uses along two main street frontages of Cribb and Caloundra Streets. In addition to businesses servicing the needs of the local community there are a significant number of local businesses focus on tourism related activities including accommodation facilities, tourist focused shops (i.e. home wares and gifts) and galleries. Some industrial activities are located on the eastern side of the railway, near the station.

Landsborough has a community node located to the south of Maleny Street, consisting of a community hall, neighbourhood centre and historical museum. The township is also serviced by:

- Landsborough State Primary School (to the west of the rail line and north of Cribb Street)
- Child care centre
- Kindergarten
- Emergency services
- A small magistrates court.

The Landsborough Sport and Recreation Complex (a district-level facility) and numerous parks are also to the north of the rail station on the eastern side of the line. Landsborough is also a tourist stop-over due to having a distinct historical character, being located on one of the main routes to the Blackall Range and tourist towns of Maleny and Montville and being in close proximity to Ewen Maddock Dam, Dularcha National Park, Mt Mellum, Australia Zoo, the Big Kart Track and Bungee Bullet.

Urban residential uses surround the business centre. It is characterised by a spread-out character with some dense pockets of vegetation interspersed through the residential areas. The dominant residential form is low rise detached dwellings on suburban lots, with an exception of the Corella Park residential estate which is intended for allotments of 1,000 m². There is scope for increased development within the existing town footprint, however the Caloundra City Plan does seek to maintain the natural and environmental qualities of the town through protection of significant vegetation, with a particular focus along Mellum Creek, Little Rocky Creek, Addlington Creek, and associated drainage lines.

The density of development decreases on the town edges; low density residential development extends on either side of the railway line north to the boundary of the Dularcha National Park. The Regional Plan and LGMS identify growth areas towards the north-west, west and south of the township, land uses in these areas mostly comprise small rural holdings and rural residential development. In total the LGMS identifies 52 ha of greenfield sites within in Landsborough township for low and mixed density residential housing at densities appropriate to the location (specified as 12 dwellings per hectare within 800 m of the railway station and 10 dwellings per hectare areas in other parts of Landsborough).

Landsborough is connected to reticulated water and sewerage and, according to Caloundra City Council, these services have the capacity of being extended to new residential areas.

The Caloundra City Plan 2004 intends that Landsborough remains in essence a small rural township with a visible heritage character and requires that development within the township respect the traditional streetscape and heritage character. It is envisaged that Landsborough will continue to be a residential community with the local business centre functioning to service the needs of residents in Landsborough and surrounding areas.

The plan anticipates the Local Business Centre will cater for expansion of commercial and business uses but is not expected to expand beyond the existing centre. Similarly expansion of industrial uses is to occur with the existing precinct. Home-based businesses are expected to increase, while bed and breakfast type accommodation will take advantage of heritage and recreation attractions of the township and surrounds. Currently, planning is underway for the development of an Art, Community and Heritage precinct south of Maleny Street, to the south of Landsborough Station.

Land within segment A of the study focus area is mostly freehold in private ownership with the exception of Dularcha National Park and some parcels of reserve land in the township.

7.2.4 Cultural Heritage

Settlement of the Landsborough township occurred in 1871. Before the construction of the railway, like many other country towns in the area, Landsborough existed as a stopping point along Cobb and Co. Coach routes and it was eventually developed as a service centre consisting of a hotel, general store and butchers shop. Landsborough also served as an operational base for timber-getters around the early 1800s.

Today, Landsborough is known as Caloundra City's historic township with many sites of cultural heritage value. In particular, Cribb Street and the southern side of Caloundra Street comprises of groups of buildings indicative of early 20th century building styles. There are also noted cultural heritage sites in the area associated with pre-European occupation of the land, and with the early construction and operation of the railway.

Table 7.2.4a below describes the categories used to describe/define sites and places with cultural heritage values.

Table 7.2.4a: Categories of Heritage Values

Category	Description
Known Place of Indigenous Significance:	Includes sites identified on the Register of National Estate (RNE) and on the Aboriginal and Torres Strait Islander Cultural Heritage Register, provided by the Department of Natural Resources and Water (DNRW), or previously identified by ARCHAEO in consultation with local Indigenous groups. This list does not represent an exhaustive search of sites with significance to Indigenous people from the area. Further consultation and investigation is required in this regard.
National or State Register:	Sites identified on the National and Commonwealth Heritage Lists, Register of the National Estate and/or the Queensland Heritage Register
Under Consideration for Queensland Heritage Register:	Sites that have been formally recommended for inclusion on the Queensland Heritage Register
Precinct with Cultural Heritage Significance:	An area where there is a density of heritage sites and places of significance interrelated by common historical themes, functionality or aesthetics. Individual sites and places within a precinct may be of significance, however precincts may also include sites and places that may not individually be of high levels of heritage significance but may collectively contribute to the significance of the precinct.
Heritage Place:	Historic heritage places of local significance recognised by the relevant Local Government Authority
Queensland Rail Heritage Register:	Property owned by Queensland Rail and listed on the Queensland Rail Heritage Asset Register Records
Queensland National Trust Register:	Sites and places listed on the Queensland register of the National Trust. The register does not afford legislative protection but can contribute to the discussion of heritage
Identified During Study:	Places that are not recorded on a formal register but were identified by visual inspection and/or community consultation as having heritage values.

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Table 7.2.4b lists sites with cultural heritage values within the study focus area, or with values that may be impacted by the project. Key sites are described in the following text. A more comprehensive listing of all heritage sites in the locality is included in the Cultural Heritage Report at Appendix E.

Table 7.2.4b: Categories of Heritage Values

Category ⁶	Location	Located in study focus area	Source	Located During Survey	Photo
Known Place of Indigenous Significance	Indigenous Place Landsborough	TBA	Register of the National Estate	No	
National or State Register	Dularcha Tunnel 1.5 km south of Mooloolah Township.	No	Qld Heritage Register	No	-
National or State Register	Former Landsborough Shire Council Chambers 6 Maleny Street, Landsborough.	No	Qld Heritage Register	✓	✓
National or State Register	North Coast Railway National Parks North Coast Railway Line	Yes	Register of the National Estate	✓	✓
Under Consideration for Qld Heritage Register	Old Bruce Highway Road Rest Areas Jowarra, Steve Irwin Way, Landsborough	TBA		No	-
Precinct with Cultural Heritage Significance	Eastern Residential Area, Landsborough	No	Nominated by Caloundra City Council	✓	✓
Precinct with Cultural Heritage Significance	Cribb Street Precinct, Landsborough	Yes	Nominated by Caloundra City Council	✓	✓
Qld Rail Heritage Register	Landsborough Passenger Station and Footbridge Landsborough Station, Landsborough	Yes		✓	✓
Qld Rail Heritage Register	Landsborough Air Raid Shelter Landsborough Station, Landsborough	Yes	Also recommended for inclusion on Qld Heritage Register	✓	✓
Qld Rail Heritage Register	Landsborough Crane, Landsborough Train Station	Yes		✓	✓
Identified During Study	Boiler from Imbergers Mill Vacant Lot beside Mellum Creek, Landsborough	TBA	Nominated by Caloundra City Council	No	-
Identified During Previous CAMCOS Study	Mellum Cemetery (Gympie St Nth, Tytherleigh Ave, Landsborough)	Yes	CAMCOS Corridor Assessment Report 1998	No	No

⁶ Refer explanation of categories in section 7.2.4

North Coast Railway National Parks

Dularcha National Park forms part of a 254ha collection of National Parks along the North Coast Line. These National Parks are important in the conservation of remnant natural vegetation in the Sunshine Coast hinterland. An unused railway tunnel built in the 19th century within Dularcha National Park is of historic interest.

Cribb Street Precinct

The Cribb Street Precinct comprises low-rise shops, hotels and houses and is directly aligned and associated with the adjacent Landsborough Railway Station. Included in the selection of commercial premises are several individual buildings of significance such as the Landsborough Hotel, as well as shops that retain early features such as galvanised iron shop front awnings supported with timber posts. These historic items are juxtaposed with numerous modern structures. However, the overall appearance of the precinct retains a cohesively low-set commercial character.

The proximity of the precinct with the railway station is integral to its commercial viability and is enhanced by the central area of parkland, which includes recreational facilities as well as the R.S.L. Memorial Park, as well as the early 20th century timber houses located at 16-22 Cribb Street. Caloundra City Council have identified this precinct as significant for reflecting the character of Landsborough in the early 20th century (Blake 2001).



Figure 7.2.4a: View to Cribb Street facing north west



Figure 7.2.4b: RSL Memorial Park, Cribb Street

7.2.5 Visual Amenity and Landscape Character

Within Landsborough generally, quality recreational spaces, flat topography and the central railway station and business precinct of Landsborough contribute to sense of place and reinforce an average quality townscape. The township is bisected by the railway corridor and contains some landscape and built elements of note. The built form is generally open. Building types are generally average to good quality, represented within the business centre as mostly single storey terrace, or semi-detached properties, with detached houses in surrounding areas. The public realm is well provided for, with high quality, key public recreation facilities and open space that are well maintained and used, located:

- Adjacent to Landsborough station
- On Gympie Street North
- Along Addlington Creek
- On Tunnel Ridge Road.

Civic features are scattered throughout the township and connect with residential, open space and business areas.

Views from the street level are broad due to wide streets, low density building layout, and well distributed open space including the railway station precinct. The visual amenity of Cribb Street is enhanced through the use of consistent surfacing, street furniture, and well maintained public spaces and realm. Mature trees of good form, tall street light columns, signage and overhead power lines contribute to the setting, but are generally out of scale in relation to the surrounding space. Linear streetscape elements such as bollards, paving patterns and road markings also lead the eye along the street.

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Vistas within the business precinct are influenced by vehicle movements, signage, coloured shop fronts, street furniture and pedestrian movement. Vehicle activity is generated by passenger drop off/pick up, use of the adjacent public open space, parking, service and delivery, and drive-through shops.

Landmark views of local importance include the pedestrian overpass at the train station, and open views throughout the settlement across open and recreational space.

Residential areas are characterised by single storey bungalows within housing estates on wide, tree lined streets. The prominent green corridor of Addlington Creek bisects this residential area. Shared footpaths and cycle ways exist adjacent to the railway corridor.

Receptors impacted by the visual impact of changes to the railway and associated infrastructure in Landsborough include shoppers and visitors on Cribb Street, public transport patrons station, occupants of commercial/retail premises, and users and staff of Queensland Rail. Residents in houses adjacent to the existing railway corridor are likely to comprise the majority of highly sensitive viewers.



Figure 7.2.5a: View north along Cribb Street civic centre.



7.2.5b: View south west across recreational fields on Tunnel Ridge Road



7.2.5c: View north along Vidler Court, northern residential area, adjacent to rail corridor.



7.2.5d: View east from Cribb Street to Landsborough Railway Station & pedestrian overpass.

The Dularcha National Park's generally steep topography and dense vegetation (and bushland just north of the National Park boundary) effectively screen the existing railway corridor from view. The nature of these views are unique to the local and regional area and are composed of an attractive, largely natural landscape with distinctive landscape elements that contribute to high degrees of amenity and tranquillity. The scenic amenity contributes to a strong sense of place and forms part of the recreational experience. Views are characterised by: expansive, long views south the Glasshouse Mountains, or; short, heavily filtered views of the corridor by dense vegetation and steep topography. The views are enjoyed by recreational users/ tourists, road users and scattered residents.



7.2.5e: Dularcha National Park and nearby bushland, view south to Glasshouse Mountains from Rose Road

It is anticipated that all route options will cause localised change to the existing landscape and visual amenity. Scheme elements would be visible within the landscape, but would be seen within the context of the existing railway corridor. The ultimate layout, form, material and colour of the infrastructure would play some role in determining its influence on visual amenity. Vegetation removal would also constitute an obvious change in view. Whilst there is scope for mitigation, particularly through vegetation screening and planted earthworks (bunds), the impacts could not be completely mitigated because of the nature, location and scale of the project within the landscape through which it passes.

7.2.6 Socio-economic Characteristics

The population of the Landsborough township was 1,576 in 2006. This was an increase of 13.1% compared to the 2001 population figure of 1,393.

The proportion of Indigenous persons was higher in Landsborough than the study area at 2.4% compared to 1.7%. The share of non-Indigenous persons was similar between Landsborough and the study area at 94.2% and 94.4% respectively.

Landsborough contains a lower proportion of families with no children than the study area with 34.3% of total families falling into this category compared to 39.7% in the study area. Proportions of families with children were similar to the study area however cases of one parent families with children was higher in Landsborough accounting for 20.1% whereas this figure was only 15.7% in the study area.

The average household size was the same for both Landsborough and the study area at 2.7.

The resident work force contained a large proportion of construction related occupations with labourers comprising the largest share of the occupational breakdown at 22.5% of all workers. The occupation with the next highest share was technicians and trade workers which accounted for 20.2% of all employed residents.

The three largest industries by proportion of workers were construction at 15.7%, health care and social assistance at 10% and retail trade accounting for 9.9%. These industries were also the three largest in the Landsborough to Nambour study area.

The median weekly individual income in Landsborough was \$250-\$399. There were higher proportions of persons earning less than \$1,000 in Landsborough and conversely less earning above \$1,000 when compared to the study area.

Detached houses accounted for 87.5% of all dwellings in Landsborough. Proportions of semi detached and attached dwellings were both lower in Landsborough than in the study area. Other dwellings, which include dwelling such as caravans, demountable homes, tents accounted for 9.4% of total dwellings in Landsborough and only 3.4% in the study area.

Home ownership was low in Landsborough with 29.7% of dwellings falling in this category compared to 35.4% for the study area. On the contrary, Landsborough had a high proportion of households being rented (29.2%) that the study area as a whole (22.5%).

In 2006, the median home loan repayment was \$1,129 in Landsborough and \$1,215 in the study area and over 55% of households were paying rent of between \$180 and \$274 per week.

Landsborough contained a greater share of persons attending primary school at 35.9% compared to the study area (33.9%). Proportions of secondary students was approximately equal that of the study area at 23.32% and 23.5% respectively.

Compared to the study area, there were lower proportions of Landsborough residents with non-school qualifications, including bachelor degree (7.7% and 15.5% for the study area) and diploma holders (11.0% and 14.6% for the study area).

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7.2.7 Geology, Topography and Soils

The topography of segment A is generally flat from Landsborough, before rising to an east-west tending ridge line, where the existing rail line passes under Rose Road in a tunnel. The existing slopes in this area are steep, up to approximately 1v in 3h, with the cut slopes to the existing rail alignment significantly steeper, approximately 1v to 1.5h or 1v to 2h.

The geological map of the area indicates that this section of the route is underlain by Landsborough Sandstone, as described in section 6 and shown on Figure 5.6.1.

7.2.8 Flooding

Addlington Creek crosses segment A, near Addlington Street. This area is located in a relatively upstream part of the creek catchment, and two approximately equal creek branches cross the proposed rail line 300 m from each other. Combined, they account for 110 m³/s during the 100 year ARI design flood, discharging from a 3.3 km² upstream catchment. Depending on the proximity of existing properties, and assuming a 300 mm afflux is acceptable, culverts adding up to 55 m² of opening area will be required to convey Addlington Creek flows.

Another significant flowpath occurs between Park Court and Dularcha Drive. This flowpath has between 2.1 km² to 2.8 km² of catchment area, with corresponding 100 year ARI design flows from 67 m³/s to 84 m³/s requiring between 34 m² and 42 m² of culvert opening area.

Aside from these significant crossings, there are several other smaller flowpaths located within segment A.

7.2.9 Water Quality

Addlington Creek lies within the Mooloolah River Catchment, and flows directly into the Ewen Maddock Dam. As mentioned in the baseline overview (section 5.8 of this report), the freshwater streams in the Mooloolah catchment are considered to be generally in very good condition.

7.2.10 Noise

The Landsborough township is largely encompassed within a 1.5 km catchment of the Landsborough Railway Station. Stand alone traditional residential allotments and commercial premises are centred on the core of the township with larger rural residential allotments around the periphery. The railway line traverses through the centre of Landsborough and is bound by dwellings, community facilities such as Country Women's Association, commercial premises, the Landsborough Primary

School, recreational reserves, and rural properties. Noise sensitive receptors in segment A include dwellings close to the existing railway corridor, the primary school, and recreational facilities.

7.2.11 Transport and road network

As the possible route alignments in segment A closely follow the existing alignment they have minimal impact on the existing transport network, pedestrian and cycle access and individual property access rights.

Segment A includes the level crossing at Gympie Street North, which is a sub-arterial road and includes a dedicated bikelane. This level crossing will require replacement with a grade separated crossing to improve safety and prevent delays in traffic movements, particularly when rail services increase in frequency and speed. An initial review suggests it may be possible to achieve the new crossing in the existing road corridor with minimal property impacts.

Further north, Rose Road traverses the ridge above the rail tunnel.

7.2.12 Utilities

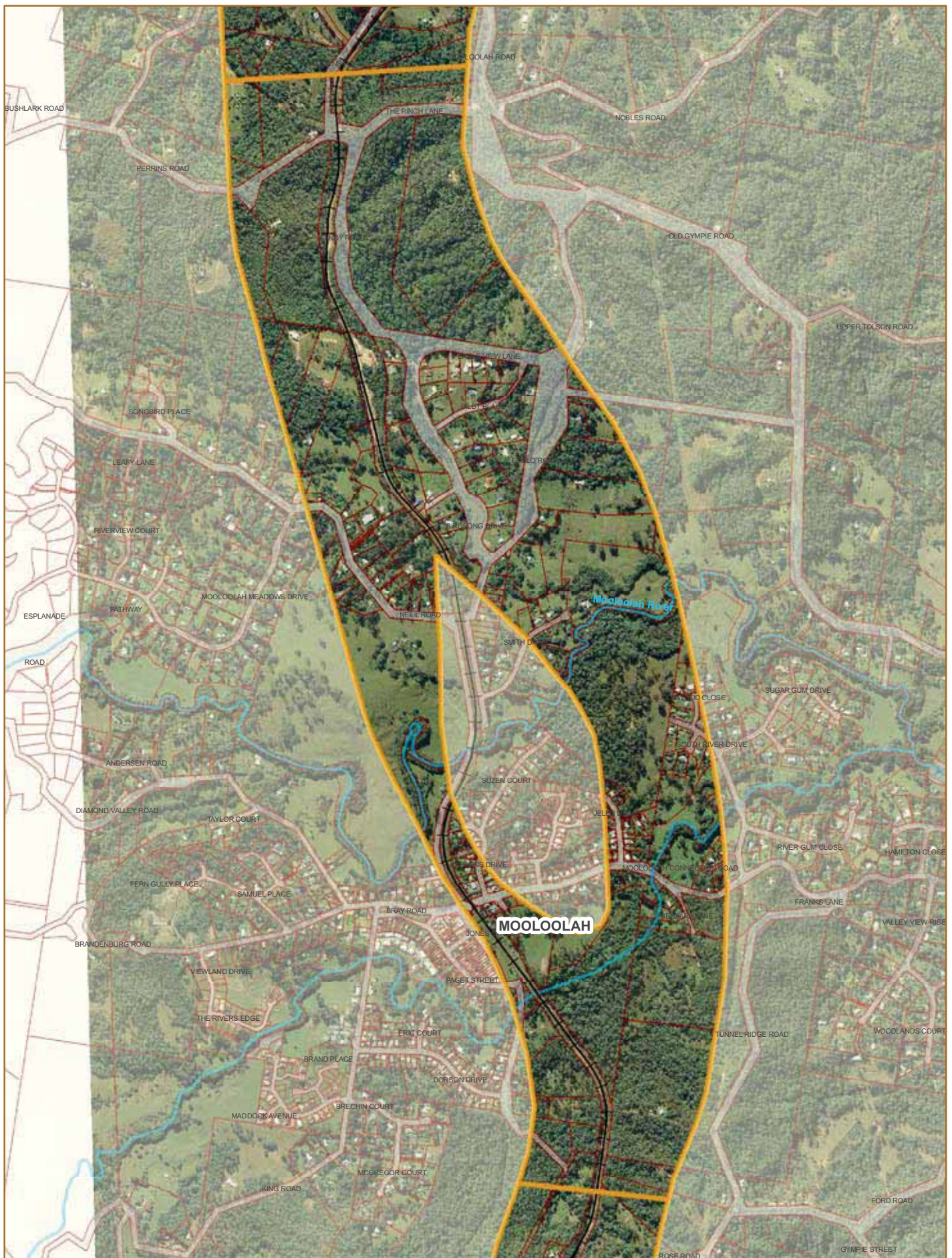
A sewer rising main runs on the eastern side and parallel to the existing railway.

Other significant infrastructure within segment A includes the existing fibre optic cable, located within the existing rail corridor.

7.3 Segment B – Mooloolah

Segment B of the study focus area begins approximately 300 m north of Rose Road, and then splits into an eastern and western alternative. The eastern alternative varies from 400 m to 800 m wide. The western alternative ranges from 150 m to 400 m, before rejoining the eastern alternative. The western alternative encompasses Mooloolah township, whereas the eastern alternative is located approximately 600 m to the east of the existing alignment. At its widest point segment B of the study focus area is 1.6 km wide. This segment ends just to the north of Pinch Lane, Mooloolah. Both alternatives of this segment cross the south branch and the main branch of the Mooloolah River.

The existing rail corridor is contained initially within the eastern alternative, but then falls outside of the study focus area, and is then again contained within the northern half after both sides of segment B have rejoined. This is shown in Figure 7.3.



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**Figure 7.3
Mooloolah (Segment B)**

0 200 400 600 800 Meters

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7.3.1 Community Feedback

Many submissions were in favour of the route being located within the western section of the study focus area in keeping with the existing line's location. It was suggested that in Mooloolah however, the relocation of the station to the east could release land for more commercial development and reduce traffic congestion. Additionally, some submissions suggested that the eastern side had more vacant land and would subsequently have fewer property impacts.

The need to address the Open Level Crossing in Mooloolah was frequently raised, due to the local traffic congestion that occurs at this point.

Numerous submissions identified that properties on both the eastern and the western side of segment B contained important environmental features.

Property impacts, business and community impacts were frequently raised from submissions in this area.

7.3.2 Ecology

Key features of ecological significance within segment B of the study focus area are summarised below.

The Biodiversity Planning Assessment (BPA) maps indicate that there is a concentration of State significant area within segment B, particularly around the border between local government areas of Caloundra and Maroochy. This area coincides with a large ridge line. These areas are recognised particularly for these criteria:

- Large tracts of vegetation
- Natural condition
- Bioregional Corridor
- Largest area of an RE in region.

Regional Ecosystems in this area are dominated by 'Not Of Concern' vegetation. These are concentrated around the ridge line, however there are some significant patches of 'Of Concern' vegetation within this area. The majority of creek lines are also vegetated and generally associated with the Endangered RE 12.3.1, which is riparian rainforest vegetation.

Protected tenure within segment B includes the Marie Higgs (Mooloolah) Conservation park, and the Ga'ri djaa ga'wun Nature Refuge, protected under the *Nature Conservation (Protected Areas) Regulation 1994*. The Ga'ri djaa ga'wun Nature Refuge is significant as it protects areas of 'Endangered' and 'Of Concern' regional ecosystems, contains habitat for rare and threatened species, and forms part of a State significant bioregional wildlife corridor.

There are also several parks designated for recreational, open space or conservation purposes within this segment.

Major Waterways within segment B are South Mooloolah River and Mooloolah River. These waterways are significant in that they support endangered vegetation and a species listed as endangered under the EPBC Act 1999 (*Mixophyes iteratus*, Giant Barred Frog). The majority of the minor drainage lines contribute to the Mooloolah River catchment area.

None of segment B is identified as Koala Habitat in the *Nature Conservation (Koala Conservation) Plan 2006*.

Significant Species recorded in the area are generally concentrated to the north of Dularcha National Park/Mooloolah Forest Reserve and the ridge line (Tunnel Ridge Road), that is in the southern extent of Segment B. They include nine species listed under the *Nature Conservation Act 1994*:

- *Adelotus brevis* (Tusked Frog) – Vulnerable
- *Crinia tinnula* (Wallum Froglet) – Vulnerable
- *Ornithoptera richmondia* (Richmond Birdwing) – Vulnerable
- *Erotoscincus graciloides* (Elf Skink) – Rare
- *Tyto tenebricosa* (Sooty owl) – Rare
- *Ninox strenua* (Powerful Owl) – Vulnerable
- *Lophoictinia isura* (Square-tailed Kite) – Rare
- *Calyptorhynchus lathami* (Glossy Black Cockatoo) – Vulnerable
- *Phascolarctos cinereus* (Koala) – Vulnerable (SE Qld).

The recent fauna survey also identified two species listed under the EPBC Act 1999, *Mixophyes iteratus* (Giant Barred Frog), which is listed as Endangered, and *Pteropus poliocephalus* (Grey headed Flying Fox), which is listed as Vulnerable.

7.3.3 Land Use and Planning

The Mooloolah township lies between two branches of the Mooloolah River. It is characterised by a string of low density residential developments and small businesses along Bray Road, Jones Street, and Mooloolah Connection Road. Low density detached housing is the dominant type of dwelling in the area. The majority of dwellings within the township are on small suburban lots whilst the surrounding residential development are detached dwellings on lots of over 1,000 m². The town is fringed by rural residential properties and rural holdings. Whilst the actual township is quite small it services a wider rural residential population in the Mooloolah Valley.

The Caloundra City Planning Scheme intent for Mooloolah is to retain its distinct identity as a rural community and maintain a strong sense of place through residents' active participation in community activities, and the protection of natural and rural character which attracts people to Mooloolah in the first place. The local business centre is intended to primarily cater for the needs of residents within Mooloolah Valley.

The existing North Coast Line bisects the township of Mooloolah, with a Level Crossing on the main street. A small business centre, consisting primarily of businesses servicing the needs of the local community, is located along on the main street and on either side of the railway station. The town has not retained its original heritage buildings and the character of the main street is largely defined by two prominent parks. Residential development to the east and north tends to be lower density and disperses to rural residential development, with rural uses further to the west. The township area is seweraged, but the surrounding rural residential areas are not.

Mooloolah has a limited range of community and education facilities for residents, including:

- Mooloolah Primary School (located several hundred metres to the west of the existing station)
- Kindergarten (near the school)
- Community hall (on Bray Street)
- Fire station
- Pony club and recreational grounds (immediately to the east of the railway station).

Mooloolah has several retirement villages. It also has a relatively high number of public open space reserves of Mooloolah Recreation Ground, Suzen Court, South River, Marie Higgins Conservation Park, Village Green, and Martin Rungert Park.

Mooloolah River to the north of the township and South Mooloolah River to the south are subject to flooding, which poses a physical constraint to the future development of the township. The east-west vegetated linkages associated with the Mooloolah River and South Mooloolah River have also been identified by Council as essential for maintaining the town's open space network. Development is also constrained by steep slopes towards the north-east and west of the township.

Therefore, although Mooloolah is one of the six hinterland towns identified for growth in the Caloundra LGMS, only limited growth areas have been identified to the east, west and north of the existing settlement areas, 77 ha in total. It is intended these greenfield areas be developed as low density neighbourhoods consistent with the discrete rural town character and identity.

Land tenure is mostly freehold in private ownership with the exception of Reserves generally associated with the Mooloolah River, pocket parks and recreation reserves.

7.3.4 Cultural Heritage

Mooloolah was originally established as a Cobb and Co. coach stop on the road to Gympie. The coach service was replaced by rail in 1891 and the rail line was further upgraded by electrification. Today, very few older buildings remain in the main street area of Mooloolah. However it is understood residents continue to identify with the town's railway heritage, including the rail crossing bridge and waiting shed.

7 Overview of the Study Focus Area

One of the earliest buildings in Mooloolah was the Mooloolah primary school. The school was opened in July 1878 with an enrolment of 16 students.

Table 7.3.4 below lists sites with cultural heritage values within the study focus area, or with values that may be impacted by the proposed works. Key sites are described in the following text. A more comprehensive listing of all heritage sites in the locality is included in the Cultural Heritage Report in Appendix D.

Pedestrian rail crossing bridge and waiting shed

The pedestrian rail crossing and waiting shed located at Mooloolah Station are examples of early 20th century railway infrastructure associated with the introduction of the North Coast Line.

The pedestrian rail crossing bridge is of lofty symmetrical design and timber construction, with double infill rail balustrades and supporting concrete piers. It is the tallest and largest structure in town and the shed is the oldest public building in town and is recognised as one of the last remaining elements of the rural history of the region.

The waiting shed is a corrugated iron clad gable roofed, and weatherboard clad timber framed structure, open to the west, facing the railway line and situated cantilevered from the platform. Features include overhanging eaves with curved timber supports and a bull nose awning to a window located on the northern elevation.



Figure 7.3.4a: Mooloolah Rail Bridge.

Table 7.3.4: Cultural Heritage Sites

Category ⁷	Location	Located in study focus area	Source	Located During Survey	Photo
Known Place of Indigenous Significance	None identified at this time Further investigation required				
National or State Register	Pedestrian Rail Crossing Bridge and waiting shed Bray Road, Mooloolah	✓	Register of the National Estate Shelter also on National Trust List	✓	✓
Heritage Place	Ewen Maddock House Site Mooloolah Connection Road, Mooloolah	TBA		No	-
Identified During Study	Martin Rungert Park Town centre, Bray Road, Mooloolah	Yes		✓	✓
Identified During Study	Mooloolah (Mary Higgs) Conservation Park Mooloolah Connection Road, Mooloolah	Yes	Public Nomination	✓	✓
Identified During Study	Murphy's house 10 Mooloolah Connection Road, Mooloolah	Yes	Nominated by Council	✓	✓
Identified During Study	Late 19th century timber colonial 43 Neil Road, Mooloolah	Yes		✓	✓
Identified During Study	Private Residence 112 Eudlo Road, Mooloolah	Yes	Public Nomination	✓	✓

⁷ Refer explanation of categories in section 7.2.4



Figure 7.3.4b: Mooloolah station waiting shed.

7.3.5 Visual Amenity and Landscape Character

In terms of visual context, there are three distinctly different areas within segment B:

- The urban township settlement of Mooloolah and associated eastern fringe residences
- Rural residential estates of Birdsong Drive, Smith Drive and surrounds
- Bushland north of Dularcha National Park and towards the northern end of segment B.

The built form is compact surrounding the small business centre on the main street (and on either side of the railway station). Building types are generally average to good quality, represented within the business centre as mostly single storey terraces, or semi-detached properties, with detached houses in residential areas, particularly to the east. The public realm generally consists of two parks within the main street, open recreational space to the east of the railway and a park on the South Mooloolah River. Civic features are generally to the west with some connection to the business centre.

Open space within the main street incorporates mature trees within Martin Rungert Park that contribute to the townscape setting. Street furniture, colourful shop fronts and limited pedestrian movement and linkages (linked, but physically challenging by road and rail) add to its character. Views to the east, from Jones Street, Bray Road, and Neill Road are dominated by the existing railway line and pedestrian overpass. Views to the west are over open space and a road corridor (Bray Road). Quality open space is also represented along South Mooloolah River.

Generally, vistas along streets throughout the business centre and fringe residences to the east are influenced by wide road widths,

green vegetation and vehicle movements. There is currently no existing railway corridor to the easternmost area in this location. Views from other residences within closer proximity to the existing railway are screened by both steep local topography and/or dense mature vegetation.

Rural residential subdivisions on Birdsong Drive and Smith Drive generally consist of single storey bungalows on wide, tree lined streets. The existing adjacent railway corridor is currently screened by dense mature vegetation along a drainage line.



Figure 7.3.5a: View south-east of Mooloolah town centre and pedestrian overpass from Bray Road.



Figure 7.3.5b: View west from Birdsong Drive along Platypus Court.

Generally, the steep topography and dense vegetation bushland north of the Dularcha National Park, Mooloolah, and Mooloolah Valley effectively screen the existing railway corridor from view. The nature of these views are unique to the local and regional area and are composed of an attractive, largely natural landscape with distinctive landscape elements that contribute to high degrees of amenity and tranquillity. The scenic amenity contributes to a strong sense of place and forms part of the recreational experience. Views are generally short and heavily

7 Overview of the Study Focus Area

filtered from the existing corridor by dense vegetation and steep topography. People potentially impacted by changes in visual amenity include recreational users/tourists, road users and scattered residents.

It is acknowledged that all route options will cause localised change to the existing landscape and visual amenity. However, segment options are split into two separate areas in this location with distinctly different impacts. Options that broadly follow the existing corridor would be visible within the landscape but would be seen within the context of the existing railway corridor, where it exists. The options that follow a new alignment would form a new component of views and would introduce a new element into existing landscape and visual amenity.

7.3.6 Socio-economic Characteristics

The population of Mooloolah township at the time of the 2006 Census was 1,132 which was an increase of 15.6% from the 2001 figure of 979.

Mooloolah had a similar proportion of Indigenous persons residing in the area (1.6%) compared to the study area (1.7%).

Couple families with children composed 49.3% of the total families in the town, while couple families without children composed 31.6%. One parent families also made up approximately 17.8% of the town's families.

The average household size in Mooloolah was 3.0. This was higher than the average recorded for the Landsborough to Nambour study area at 2.7.

The dominant occupation in Mooloolah was technicians and trade workers, representing 20.3% of the employed population. This is followed by clerical and administrative workers (13.7%) and labourers (12.2%).

Construction (18.3%) and retail trade (14.4%) were the two dominant industries in which residents of Mooloolah were employed. Mooloolah also had a large proportion of people working in healthcare and social assistance, and manufacturing industries (11.3% and 8.7% respectively).

In Mooloolah, the median individual income was \$400-\$599 per week.

The separate house is by far the dominant dwelling type in both Mooloolah and in the study area. In Mooloolah, 97.4% of all dwellings were separate houses, while in the study area the proportion was slightly lower at 86.8%.

There were no semi-detached dwellings recorded and a very low proportion of attached dwellings in Mooloolah. Other dwelling types (including improvised and makeshift dwellings)

also represented a very small proportion of dwellings, with these being proportionately underrepresented when compared against the study area.

Nearly half (47.2%) of all occupied private dwellings in the town of Mooloolah were being purchased at the 2006 Census. This was the largest tenure type in the town, ahead of outright ownership (29.0%) and renting (22.2%).

The average housing loan in Mooloolah Valley was \$1,202 per month, while in the study area the average was \$1,215. The median rental price for Mooloolah was \$240 per week.

Mooloolah had a slightly higher proportions of people pre-school (7.7%) and primary school (35.8%) than in the study area (5.5% and 33.9% respectively).

In comparison to the study area, Mooloolah had a significantly higher proportion of people with postgraduate degrees (1.8% compared to 0.8% for the study area).

7.3.7 Geology, Topography and Soils

The area close to Mooloolah is undulating, with an east-west tending ridge to the south, a relatively level area around the township itself, and rising to another east-west tending ridge north of Mooloolah, where the existing rail passes through a tunnel below Pinch Lane. The central plain area is crossed by a number of natural drainage lines. Either side of Mooloolah, the geological map indicates that the geology is mantled by superficial alluvial deposits. These materials are likely to comprise sands, silts and clays, and potential issues associated with settlement and instability of fill embankments, and potential for acid sulphate soil, would be envisaged in these areas. Routes that pass through the western section of the study focus area are likely to traverse less of the superficial materials than routes to the east of the township.

7.3.8 Flooding

Segment B includes two major floodplains: the Mooloolah River and the South Mooloolah River. Due to the geometry of the floodplains, the lateral spread of the 100 year ARI design flood is significant.

7.3.9 Water Quality

The following significant waterways are present in segment B of the study area:

- The Mooloolah River
- The South Mooloolah River.

The South Mooloolah River flows into the Mooloolah River within 1 km east of the study area. As mentioned in the baseline reporting, the freshwater streams in the Mooloolah catchment are generally in very good condition.

One EHMP site exhibiting extremely good ecosystem health characteristics in 2005/06 was located in the upper reaches of the South Mooloolah River, approximately 1 km downstream of undisturbed bushland.

Good characteristics were also exhibited in the Mooloolah River within a rural residential area immediately downstream of the township of Mooloolah Valley.

7.3.10 Noise

Within Mooloolah, there are a number of sensitive receptors (dwellings) in close proximity to the existing corridor, although the number of dwellings that adjoin the corridor is smaller owing to fewer standard residential allotments. Larger rural residential allotments within this segment are prevalent within segment B. The railway line currently passes the Mooloolah recreational grounds and pony club and town centre. Several other sensitive receptors such as the Mooloolah Primary School and Special School are located approximately 500 m to the west of the line.

7.3.11 Transport and Road Network

Segment B encompasses Mooloolah and including the following:

- The existing Open Level Crossing
- A significant three-way intersection of sub-arterial and collector roads
- An existing rail bridge at Neill Road (road underpass), just to the north of Mooloolah.

Both the Open Level Crossing (OLC) and the underpass at Neill Road require upgrading to improve road safety and security of access.

The segment also encompasses a historic pedestrian rail overpass in Mooloolah.

The Mooloolah Connection Road is a sub-arterial road providing access to the east and south, via an eventual connection to the Bruce Highway. The Mooloolah Connection Road intersects the rail line at an OLC in the centre of Mooloolah township.

Bray Road, a rural collector road is a continuation of the Mooloolah Connection Road to the west of the open level crossing. It services properties to the west of Mooloolah and

forms part of the main street in Mooloolah. The majority of businesses and services in Mooloolah gain direct or indirect access from Bray Road or the Mooloolah Connection Road.

When the open level crossing at Mooloolah Connection Road/Bray Road is closed to road traffic there is substantial congestion in the township due to the proximity of this intersection to the rail crossing. As the frequency and speed of rail services increases, replacement of the OLC with a grade separated crossing will become a priority, both for safety reasons and to prevent the delays to traffic flow that cause congestion in the town centre and impede emergency vehicle access.

Neill Road is another sub-arterial road which becomes the Mooloolah-Eudlo Road. Neill Road/Mooloolah-Eudlo Road forms the main connection to the northern townships. These roads are also used by freight vehicles, emergency services and buses.

Numerous local roads providing access to rural residential estates branch off from Mooloolah Connection Road on the eastern side of segment B.

7.3.12 Utilities

A proposed future gas corridor traverses both sides of segment B, following the existing rail corridor for a short distance, and then diverting to the north and following the Mooloolah-Eudlo Road.

The Northern Pipeline Interconnector, an emergency drought relief project, passes through the eastern side of segment B. Sections of this pipeline is currently under construction.

Other significant infrastructure within segment B includes the existing fibre optic cable, located within the existing rail corridor.

7 Overview of the Study Focus Area

7.4 Segment C – Eudlo

Segment C of the study focus area starts just to the north of Pinch Lane, Mooloolah. It also splits into two alternatives, just to the south of Logwoods Road, Eudlo, as a result of considerable topographical and ecological constraints. This is shown in Figure 7.4.

The eastern alternative has a width ranging from 340 m to just under 600 m. It passes to the east of the National Park in a broad valley and bypasses Eudlo township.

The western alternative ranges from 400 m to approximately 620 m, this alignment is generally in the same vicinity as the existing rail, encompassing Eudlo township along a similar alignment to the existing corridor and passing on the western side of Eudlo Creek National Park.

Segment C ends just to the north of the Mooloolah-Palmwoods Road intersection with Chevallum Road (intersection is outside the study focus area) and just to the south of Palmwoods. This segment tapers down to approximately 190 m wide at its northernmost point.

7.4.1 Community Feedback

Submissions from the community that related to the Eudlo area (segment C) were divided, due to the eastern and western alternatives of this segment.

Respondents against an eastern route through the Eudlo segment (segment C) presented the following issues:

- A greater area of floodplains to traverse
- Significant ecological areas
- More open space with the potential for increased noise levels
- Property impacts
- Commercial impacts to local businesses.

Submissions in favour of an eastern option as the preferred route conveyed that the eastern side of segment C would impact on fewer properties.

The local historic and community significance of Eudlo Station was also recognised in submissions. Concern about the potential total loss of the rail station was also a significant issue, from a historic, transport, and local business perspective.

An alternative route option for this section of the study focus area was submitted to the study team by members of the community. This option, described as route option C7 is discussed in further detail in section 8.3.6 of this report.

7.4.2 Ecology

Key features of ecological significance within segment C of the study focus area are summarised below and described in detail in the Evaluation Table included in Appendix D.

The Biodiversity Planning Assessment (BPA) maps indicate that there is a concentration of Regional significant area within segment C, particularly around Eudlo Creek National Park. There is a large area of mosaic habitat extending to the east and west of the National Park. These areas are recognised particularly for these criteria:

- Containing at least one 'Of Concern' RE
- Core habitat for EVR species.

Regional Ecosystems in this area are dominated by 'Of Concern' vegetation. It is concentrated around Eudlo Creek National Park, however there are some significant patches of 'Not of Concern' vegetation within this area. The majority of creek lines are also vegetated and generally associated with the 'Of Concern' RE12.3.2, which is riparian wet sclerophyll vegetation.

Protected Areas affected by segment C include Eudlo Creek National Park, which is protected by the *Nature Conservation Act 1992*. The EPA has advised that Eudlo Creek National Park contains the 'largest unfragmented area of the 'Of Concern' regional ecosystem RE12.9-10.1 in the Sunshine Coast hinterland south of Noosa as well as significant stands of the 'Of Concern' RE12.3.2. For this reason it is a highly significant park on the Sunshine Coast.'

Eudlo Creek and its many tributaries are located in segment C. These waterways are significant in that they support a species listed as vulnerable under the NCA Act 1994 (*Adelotus brevis*, Tusked Frog). The majority of the minor drainage lines contribute to the Maroochy River catchment area.

The area just to the south of Eudlo township has been recognised as Urban Koala Habitat in the *Nature Conservation (Koala Conservation) Plan 2006*.

Significant Species recorded in the area are generally concentrated in and around Eudlo Creek National Park. They include several species listed under the *Nature Conservation Act 1994*:

- *Adelotus brevis* (Tusked Frog) – Vulnerable
- *Erotoscincus graciloides* (Elf Skink) – Rare
- *Phascolarctos cinereus* (Koala) – Vulnerable (SE Qld).



March 2008

Queensland Government
Queensland Transport

Legend

- Study Focus Area
- Existing Rail Line
- Creeks
- Property Boundaries
- Roads

**Landsborough to Nambour
Rail Corridor Study**

**Figure 7.4
Eudlo (Segment C)**

0 200 400 600 800 Meters

While every care is taken to ensure the accuracy of this data, Queensland Transport makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which might be incurred as a result of the plan being inaccurate or incomplete in any way and for any reason. Base information supplied by Maroochy and Caloundra Councils and Department of Natural Resources and Water. The areas shown in this figure are subject to change and final refinements during further assessment and preliminary design.

7 Overview of the Study Focus Area

7.4.3 Land use and planning

Other than in the small township of Eudlo, land in the segment C area is primarily used for rural and horticultural activities, including some fruit production and grazing. The area consists of good quality agricultural land (identified in the Caloundra City Plan) and natural features of significant environmental value (e.g. Eudlo Creek, the Eudlo Creek National Park, and the Eudlo Creek Conservation Park). Land affected by the eastern alignment includes mostly smaller rural holdings and heavily vegetated areas.

The Maroochy Plan 2000 intends for Eudlo to remain a small country town supporting its cooperative local rural community. The plan's intent is to maintain Eudlo's rural landscape and existing land uses (i.e. general rural activity, rural residential development, conservation parks, tourist facility, extractive industry and a business and industry node at Forest Glen). Eudlo is characterised by its wide streets and a traditional country town atmosphere, serving as a hub for the surrounding rural community. Eudlo's identity as a "rail township" is strong, which is partially due to the high visibility of the rail station adjacent to the tennis courts, skate bowl, park and nearby general store and primary school, but also relates to the history of the town. Otherwise, Eudlo features low density residential development situated primarily to the east of this business centre.

The railway line passes adjacent to the Eudlo Primary School prior to entering Eudlo Railway Station. The school and station are accessed from Rosebed Street, which is the main street in Eudlo. Today there is only a general store and post office on Rosebed Street, however the numerous character and/or heritage buildings attest to a more prosperous past. Although visual surveys during the study period suggest that the store has minimal reliance on business generated from rail commuters, compared to other sources, it is understood that rail passengers are able to purchase tickets from the store.

A skate park is located adjacent to the Eudlo Railway Station, which provides recreational opportunities for young people in the area and surrounds. It is understood that the tennis courts adjacent to the rail station are also popular with local residents.

This section of the study area to the north and east of Eudlo consists primarily of rural land uses (including some grazing and small scale horticulture). A small, isolated residential development is located about 1.5 km to the north of Eudlo (to the west of the railway line and centred on Cardinal Court). The locality has allocations for tourist and extractive industry uses, whilst the remaining parts of Eudlo are identified for general rural activities.

Unlike the other rail townships, the Urban Footprint in the SEQ Regional Plan does not extend beyond the existing development area and there is no rural residential zoned land in the vicinity of the township. Eudlo is unsewered and physically constrained, mostly by land subject to inundation, and the planning scheme envisages limited infill development. The township therefore is recognised as having very limited growth potential.

The Maroochy Plan 2000 also intends the area's significant environmental values to be protected including those of Eudlo Creek, the Eudlo Creek National Park, and the Eudlo Creek Conservation Park.

Land within this segment is mostly freehold in private ownership with the exception of Eudlo Creek National Park and some reserve land in Eudlo township.

7.4.4 Cultural Heritage

From the 1880s, land at Eudlo was made available for agricultural activity, although its growth remained relatively limited up until 1891 when the rail corridor began operation, establishing a stronger transport link to large centres and creating export market opportunities. Around the late 1800s, a local saw mill was built to assist the processing of timber felled from the Blackall Range and surrounding forests.

Table 7.4.4 lists sites with cultural heritage values within the study focus area, or with values that may be impacted by the proposed works. Key sites are described in the following text. A more comprehensive listing of all heritage sites in the locality is included in the Cultural Heritage Report in Appendix D.

Rosebed Street Precinct, Eudlo

The Rosebed Street Precinct, located in the centre of the town of Eudlo, consists of a wide open street lined by early 20th century low-rise residences and a general store. The precinct extends along Rosebed Street from Eudlo Creek to Anzac Road.

The precinct is situated adjacent to the Eudlo Railway Station and in addition to the early 20th century timber houses, shops, state school and community hall, the streetscape features a war memorial, skate park, tennis courts, central verge and parking, and a prominent eucalypt.

The proximity of the precinct to the railway station is integral to its commercial viability and is enhanced by the central area of parkland, which includes recreational facilities such as a skate park and tennis courts. The cultural heritage significance of the Rosebed Street Precinct, Eudlo, is yet to be assessed.



Figure 7.4.4a: War Memorial



Figure 7.4.4b: View to Rosebed Street from south

Table 7.4.4: Cultural Heritage Sites

Category ⁸	Location	Located in study focus area	Source	Located During Survey	Photo
Known Place of Indigenous Significance	None identified at this time Further investigation required				
National or State Register	Eudlo Forrest and Timber Mill. Hutchinsons Road, Ilkley	No	Register of the National Estate	No	-
Precinct	Rosebed Street Precinct, Eudlo	Yes	Nominated by MSC	✓	✓
Heritage Place of Local Significance	Low-set post war timber house 3 Rosebed Street, Eudlo	Yes		✓	✓
Heritage Place of Local Significance	Early 20th century high-set timber house with modifications 7 Rosebed Street, Eudlo	Yes		✓	✓
Identified During Study	Gabled Queenslander House 1 Eudlo School Road, Eudlo	Yes		✓	✓
Identified During Study	Skate Park with mature plantings Rosebed Street, Eudlo	Yes		✓	✓
Identified During Study	Timber plank road bridge over railway line 1 Rosebed Street, Eudlo	Yes		✓	✓
Identified During Study	1900s House Residence, 22 Bamboo Road, Palmwoods	Nominated by public		Access required	-

⁸ Refer explanation of categories in section 7.2.4

7 Overview of the Study Focus Area

7.4.5 Visual Amenity and Landscape Character

In terms of visual context, there are three distinctly different visual components within segment C:

- The peri-urban settlements of Eudlo (including northern and southern fringes), Tania Avenue and Palmwoods southern fringe
- Pastureland on floodplain
- The vegetated landscapes of Eudlo Creek National Park, Acrobat Creek and Eudlo Creek.

Eudlo is a small, attractive rail town with a cohesive urban form of recognised value. It is surrounded by agricultural landscape, flood plains and areas of significant environmental value. The townscape is generally of average to good quality with an existing railway corridor directly west of the main street.

There are a number of township features of merit that contribute to a strong sense of place. The built form along Rosebed Street, the town's main street is visually prominent and provides a traditional country town character. The town centre layout reflects the historical development of the township. Building types are generally average to good quality, represented along Rosebed Street as mostly single storey detached timber structures, with verandahs in some cases. The public realm within the town centre is enhanced by open space, infrequent pedestrian and car movements, planting, and the use of street trees within central median parking that contribute to street character and town setting. There are several civic features including the skate park, school and tennis courts to which there is opportunity for links to be improved.

Views from the street level are broad due wide streets, low density building layout, and open space. The railway station precinct and mature stands of trees restricts views to floodplain pastureland to the west.

In Eudlo, receptors include shoppers and visitors on Rosebed Street, Palmwoods-Mooloolah Road, public transport patrons, occupants of commercial/retail premises, and users and staff of Queensland Rail. The most sensitive residential receptors exist in houses adjacent to the existing railway corridor and comprise the majority proportion of viewers.



Figure 7.4.5a: View north east from Eudlo Station across open space to Palmwoods Mooloolah Road and the town centre

The southern fringe of Palmwoods is located in the northern extent of segment C. This area is characterised by residential subdivisions of one storey bungalows adjacent to the existing railway corridor accessed via wide, tree lined roads. Views to this route are heavily filtered by existing vegetation. However, properties to the west are at elevation and may experience views of trains, overhead power supply and associate rail infrastructure.



Figure 7.4.5b: View north-east to Palmwoods southern fringe from Palmwoods Mooloolah Road.

Tania Avenue is characterised by residences (one storey bungalows) on large blocks of land with private driveways, surrounded by agricultural paddocks and adjacent to the existing railway corridor. Views west from Tania Avenue to this route are heavily filtered by existing vegetation. However, these properties are at elevation and may experience views of trains, overhead power supply, and associate rail infrastructure.

Pastureland on floodplain exists to the west of Eudlo town centre and the existing railway corridor. Expansive views across lush,

green, pastureland bisected by tree lined creeks is unique to the local area. Scattered rural residences also form part of this view and residents in these localities would be impacted by changes to visual amenity. Views to the existing railway corridor and Eudlo town centre are filtered by existing mature vegetation.



Figure 7.4.5c: View south-west across floodplain to rural residence from Highlands Road.

Segment C encompasses areas of significant environmental value including Eudlo Creek, the Eudlo Creek National Park, and the Eudlo Creek Conservation Park. In general, the undulating topography and dense vegetation of the Eudlo Creek National Park effectively screens the existing railway corridor from view. However, the nature of these views are unique to the local and regional area and are composed of an attractive, largely natural landscape with distinctive landscape elements that contribute to high degrees of amenity and tranquillity. The scenic amenity contributes to a strong sense of place and forms part of the recreational experience. People that would be impacted by changes in visual amenity include recreational users/tourists, road users and scattered residents.

It is anticipated that all route options will cause localised change to the existing landscape and visual amenity. However, segment options are split into two separate areas in this location and therefore either; scheme elements would be visible within the landscape but would be seen within the context of the existing railway corridor, where it exists; or all scheme elements would form a new component of views and would not fit with the existing landscape and visual amenity. The ultimate layout, form, material, and colour of the infrastructure would play some role in determining its influence on visual amenity. Vegetation removal and earthworks would also constitute an obvious change in view. However, there is scope for mitigation, particularly through vegetation screening, earthworks (bunds), but the impacts can not be completely mitigated because of the nature and location of the project within the landscape through which it passes.

7.4.6 Socio-economic Characteristics

According to the 2006 Census, the population of Eudlo town was 175. Unlike other communities in the study area which experienced an increase in population between 2001 and 2006, the change in the population of Eudlo during this period was -5.91% (a loss of 11 people).

Couple families with children were the dominant family type in Eudlo, representing 46.7% of all families. This trend was consistent with the study area, where couple families with children accounted for 43.6%. However, in contrast to the study area, Eudlo had a relatively low proportion of couple families with no children (15.6%) and a relatively high proportion of one parent families (37.78%) when compared with the Landsborough to Nambour study area (39.7% and 15.7% respectively).

The average household size in Eudlo in 2006 was recorded as 2.6.

Consistent with the occupational profile, Eudlo had a significantly higher proportion of residents working in construction, and transport, postal and warehousing. Eudlo also had a high proportion of workers in education and training, and agriculture, forestry and fishing.

The median weekly individual income in Eudlo was \$400-\$599.

A significantly higher proportion of all occupied dwellings in Eudlo (55.6%) were being purchased than were in the Landsborough to Nambour study area (38.8%). In contrast, notably lower proportions of dwellings were fully owned (22.2% compared with 35.4%), while the same proportion of dwellings were being rented (22.5%).

The separate house is by far the dominant dwelling type in Eudlo with 93.7% of all dwellings being separate houses.

Housing loan repayments were significantly lower in Eudlo than they were in the study area. The average housing loan in Eudlo was, \$1,105 per month, while in the study area the average was \$1,215.

While Eudlo had the same proportion of dwellings being rented as the study area, the low absolute figure that this represents (12%) means that the data that can be inferred from rental payments is limited.

A slightly higher proportion of the residents in Eudlo was attending pre-school (7.8%), primary school (41.2%) or TAFE (13.7%) than in the study area (5.5%, 33.9% and 5.9% respectively).

In regard to educational attainment, slightly higher proportions of people in Eudlo were recorded as possessing a graduate diploma and/or graduate certificate (6.1%), or a diploma or

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advanced diploma (18.2%) compared to the study area (2.4% and 14.6% respectively). A higher proportion of residents were recorded as possessing a certificate qualification (59.1%) when compared to the Landsborough to Nambour study area (41.8%).

7.4.7 Geology, Topography and Soils

Around Eudlo, the topography is dominated by the level alluvial plains associated with Eudlo Creek, before rising to the north towards a west to east tending ridge. The river terrace is likely to be underlain with soft, compressible alluvial soils, which may also give potential for acid sulphate soils. Route options that follow the eastern side of segment C are likely to encounter a greater proportion of soft soils than routes that pass through or to the west. Significant earthworks will be required to maintain the proposed alignments above ARI 100 flood level in this area, and earthworks will need to be designed and constructed to take account of potential for significant consolidation of underlying soils, and issues associated with soft foundation soils including global stability of fill slopes.

7.4.8 Flooding

Segment C includes the Eudlo Creek floodplain. The size of the catchment is approximately 25.7 km² at the crossing of the route options, which occurs at Rosebed Street for all the eastern options. Due to the geometry of the floodplains, the lateral spread of the 100 year ARI design flood is significant. Assuming that the entire floodway should be bridged to avoid upstream negative impacts, the cumulative length of bridge varies from 440 m to 1,115 m depending on the location of the route option.

In addition to the major bridges, between 10 and 13 cross-drainage structures are required to accommodate small flowpaths. The cumulative culvert opening area along the eastern routes averages 70 m², while it averages 35 m² along the western routes.

7.4.9 Water Quality

The following significant waterways are present in segment C of the study area:

- Eudlo Creek
- Acrobat Creek (a tributary of Eudlo Creek).

Eudlo Creek and its tributaries lie within the Maroochy catchment and flow into the lower Maroochy River estuary. As mentioned in section 5, the freshwater streams in the Maroochy catchment are generally in fair condition.

7.4.10 Noise

The number of sensitive receptors identified immediately adjacent to the present corridor is lower than for other towns/villages along the corridor owing to the smaller population residing in the Eudlo village. Residential development is concentrated around Rosebed Street together with commercial and community facilities including the Eudlo Primary School. Rural allotments characterise much of the Eudlo hinterland in the remainder of segment C. Topography would play a significant role in the transmission of rail noise within this segment.

7.4.11 Transport and Road Network

There are four existing road-rail crossings in segment C, including two road bridges on the Mooloolah-Eudlo Road, which is designated in the Maroochy Plan as a District Collector (rural), and two rail bridges over Highlands Road, a neighbourhood connector, and Eudlo School Road, a local street. Both rail bridges have low clearances.

7.5 Segment D – Palmwoods to Woombye

Segment D of the study focus area starts just to the north of the Mooloolah-Palmwoods Road intersection with Chevallum Road (though this intersection is outside the study focus area). At its southern most point it is 180 m wide, and at its widest is approximately 800 m wide, before tapering back down to 280 m wide just north of the crossing of Paynter Creek to the north of Woombye. This segment includes parts of Palmwoods town and passes primarily to the west of Woombye with minor impacts on the town area but encompassing the majority of the showgrounds. Segment D is shown in Figure 7.5.

7.5.1 Community Feedback

Submissions received from the community relevant to the Palmwoods and Woombye area included the following themes:

- Historical values of properties on Main Street
- Community and historic significance of the Palmwoods Bowls Club
- Significance of Kolora Park and mature stands of trees along entry to Palmwoods (Woombye-Palmwoods Road)
- Significance of creeks and local waterways that run into Kolora Park
- Local road network constrained by low headroom rail bridge in Palmwoods (Woombye-Palmwoods Road)
- Significance of agricultural properties and concerns about water supply

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- Property impacts (social and commercial concerns)
- Provision of noise barriers
- Environmental impacts
- Concerns about local road network and accessibility.

7.5.2 Ecology

Key features of ecological significance within segment D of the study focus area are summarised below.

The Biodiversity Planning Assessment (BPA) maps indicate that there is a scattering of State significant areas within Segment D, particularly around creek lines and tributaries of Paynter Creek. The habitat is largely broken up in this area, which is heavily affected by rural and residential development. The significant areas are recognised particularly for these criteria:

- Core habitat for EVR species.

Regional Ecosystems in this area are dominated by 'Of Concern' vegetation and 'Not of Concern' vegetation. It is concentrated around Paynter Creek. There is little vegetation elsewhere within the segment.

An important wetland is located on the eastern side of this segment of the study focus area, to the north of Kolora Park.

Protected Areas affected by segment D are limited to local parks, which are not protected by the *Nature Conservation Act 1992*.

Major waterways within segment D are Paynter Creek and its many tributaries. These waterways are significant in that they support 'Of Concern' vegetation and two species listed under the NCA 1992. The majority of the minor drainage lines contribute to the Maroochy River catchment area.

The area has not been recognised as Urban Koala Habitat in the *Nature Conservation (Koala Conservation) Plan 2006*.

Significant Species recorded in the area are generally concentrated in and around Paynter Creek. They include several species listed under the *Nature Conservation Act 1992*:

- *Adelotus brevis* (Tusked Frog) – Vulnerable
- *Accipiter novaehollandiae* (Grey Goshawk) – Vulnerable (SE Qld).

7.5.3 Land Use and Planning

Palmwoods is characterised by a thriving business district including numerous heritage buildings and a fringing patchwork of scenic farms set against the backdrop of the Blackall Range. Palmwoods is also home to growing businesses such as cottage industries and a variety of local businesses and services. Palmwoods is comprised predominantly of low density residential development on land designated for urban uses.

The existing railway line divides the township of Palmwoods with residential development on both sides. However the business centre, some small-scale industrial activities and the majority of the more recent residential development are all located on the western side of the line. The western side of the land is somewhat higher than the land to the east which is subject to flooding. The local bowls club and 'duck pond' (Kolora Park) are located on this lower, eastern side, as is Eudlo Road. These are recognised as features of importance to the local community. The forested entry towards the north-east of the township (on Woombye-Palmwoods Road) is also highly valued by the community.

Over time the activity centre in the town has shifted from the historical Main Street to Margaret Street. Residents have developed a Palmwoods Town Centre Community Vision Plan to provide direction for commercial development within the village centre, particular to re-unite the two parts of town. The plan includes strategies to improve the streetscape and pedestrian amenity of the township, including improved access to the station, which currently has poor connection to, and access from, the town centre. This plan provides the study team with guidance on how the local community envisages future development within their township. Palmwoods has the following facilities and services:

- Palmwoods State School
- Community pool
- Community hall
- Places of worship
- Police station
- Rifle range
- Showgrounds
- Open space facilities include Jubilee Park, Briggs Park, Kolora Park and Federation Park.

The Maroochy Plan 2000's vision statement for Palmwoods is to:

... remain a small country town, providing a convenient range of goods and services to the residents of the town and surrounding rural and rural residential areas...The informal settlement pattern and layout of the older parts of the town will be retained as important elements of its character and amenity. The existing historic buildings in Palmwoods which contribute to this character will also be respected and enhanced.

Environmental features within the Planning Area including remnant forest along ridge-lines and adjacent to local waterways and drainage-lines will be protected and enhanced and will form the core of an attractive green space network traversing the town.

With the presence of heritage buildings that contribute to the historical and country style character of the township, Palmwoods is comprised predominantly of low density residential development on land designated for urban uses. There is capacity within the current planning provisions to accommodate new greenfield developments, which are to be master planned and will be subject to the preparation of a Local Area Structure Plan, or other detailed Plan of Development as approved by Council.

The vision of the community is to preserve and enhance the existing historic buildings within the Palmwoods township, and maintain the level of goods and services provided to the residents of the town and surrounding rural and rural residential areas. Although new residential development is expected within the area, the existing settlement pattern and layout of the older parts of the town will be maintained as key elements of character and amenity. Complementing the town's historical character will be the preservation of an attractive green space which currently traverses the town.

Between Palmwoods and Woombye

To the north of Palmwoods, land is used for rural activities including some horticulture (primarily tree crops). Within the study area, rural lands are predominantly located towards the south and east of the township.

Woombye

Woombye is situated immediately to the south of Nambour, within a rural landscape. The town has a distinct character, with a bustling main street and relatively dense residential precinct set out on a clear grid. The main street, Blackall Street, runs from the existing railway station to the Nambour Connection Road on the east. The street is characterised by heritage buildings, street art with a heritage theme, and mature street trees. The street

terminates at two small parks at the western end near the station. These physically and visually separate the Blackall Street town centre and the rail station.

The railway line runs to the west of the Woombye township area and, as in Palmwoods, defines a boundary between the higher town area and lower, flood prone lands which are used mostly for recreational purposes. The showgrounds, home to well-used sports fields, are located to the west of the Woombye Railway Station and residential uses are generally located to the east of the railway line, between it and the Nambour Connection Road.

Given its proximity to Nambour and Maroochydore, Woombye provides a range of goods and services commensurate to its role as a rural service centre. However feedback from recent community consultation suggests that many residents prefer to shop locally within Woombye rather than drive to Nambour due to the main street atmosphere and ease of parking.

The facilities and services located within Woombye include the following:

- Woombye State School
- Suncoast Christian College
- Woombye Showgrounds
- Community Library
- Masonic Centre
- Residential Care and Community Aged Care
- Places of worship
- Horse and Pony Club
- Soccer Club
- Park and recreational spaces include Paynter Park, Memorial Park, CWA Park, Junee Crescent Park and McCarthy Drive Park.

In 2006, Woombye township and associated rural residential land had an estimated population of 2,094. Currently, Woombye township has approximately 430 dwellings, and Council estimates that the 'Urban Footprint' can accommodate an additional 850 dwellings. This represents a potentially significant increase for Woombye into the future. Some of this development will occur to the south but mostly to the north. The rail, floodplains and road constrain development to the west and east.

The Maroochy Plan 2000 intends that:

Woombye be a place which maintains and strengthens its individual identity (separate from Nambour) and develops a distinctive town centre, which encourages relaxed activity and caters for all groups within the community.

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Specifically, it is expected that Woombye will retain its role as a rural service centre within its rural landscape setting. The township's character and historical values are to be retained through the retention of heritage buildings and places particularly along Blackall Street. Commercial development along Blackall Street (between Wakefield Street and Park Street) is to be consolidated.

Land within this segment is mostly freehold in private ownership with the exception of Reserves generally associated with pocket parks and recreation reserves, and pockets of State land adjacent to the rail line.

7.5.4 Cultural Heritage

In 1868, Palmwoods became the wet weather route for Cobb and Co. coaches traveling between Brisbane and the Gympie goldfields. The Palmwoods economy was originally based on timber but evolved into fruit farming over the years. During the 1950s, Palmwoods was Queensland's second largest loading centre for pineapples and citrus.

Table 7.5.4 lists sites with cultural heritage values within the study focus area, or with values that may be impacted by the proposed works. Key sites are described in the following text. A more comprehensive listing of all heritage sites in the locality is included in the Cultural Heritage Report in Appendix D.

Table 7.5.4: Cultural Heritage Sites

Category ⁹	Location	Located in study focus area	Source	Located During Survey	Photo
Known Place of Indigenous Significance	Aboriginal Burial Site and remnant vegetation Leeons Road, Palmwoods	TBC	Identified by member of the public	No	-
National or State Register	Palmwoods to Buderim Tramway Route. Chevallum Road, Palmwoods to Brecon Crescent, Buderim	Yes	Register of the National Estate & Qld Rail Heritage Register	No	-
National or State Register	Palmwoods to Buderim Tramway Track Foundation and Formwork Remnants. Chevallum Road, Palmwoods to Telco Road, Buderim.	Yes	Queensland Heritage Register	✓	✓
Precinct	Main Street Precinct, Palmwoods	Yes	Maroochy Shire Council	✓	✓
Precinct	Margaret Street Precinct, Palmwoods	No	Maroochy Shire Council	✓	✓
Precinct	Chevallum Road Residential Precinct, 7-60 Chevallum Road, Palmwoods	Yes		✓	✓
Precinct	Hill and Church Streets Precinct, Palmwoods	No		✓	✓
Precinct	Woombye House, grave and tree Precinct, Bruce Highway, Woombye	TBC		No	-
Precinct	Blackall Street Precinct, Woombye	Yes	Maroochy Shire Council	✓	✓
Precinct	Woombye War Memorial Cemetery, Woombye	-	COS	✓	✓
Heritage Place of Local Significance	Row of shops 2, 4-6, 8 and 10 Main Street, Palmwoods	Yes		✓	✓
Heritage Place of Local Significance	General Store (currently IGA) 7-9 Main Street, Palmwoods	Yes		✓	✓
Heritage Place of Local Significance	36-38 Main Street, Palmwoods	Yes		✓	✓
Heritage Place of Local Significance	Palmwoods Railway Station, Railway Street, Palmwoods	Yes		✓	✓
Heritage Place of Local Significance	Memorial Hall Corner Margaret and Main Streets, Palmwoods	Yes		✓	✓
Heritage Place of Local Significance	Palmwoods Hotel 28-34 Main Street, Palmwoods	Yes		✓	✓
Heritage Place of Local Significance	Memorial Park with war memorial Soldiers memorial, Blackall Street, Woombye	Yes		✓	✓
Heritage Place of Local Significance	Criterion Hotel Corner Blackall and Barts Street, Woombye	Yes		✓	✓
Heritage Place of Local Significance	Memorial Drill Hall, Park Street, Woombye	Yes		✓	✓
Queensland Rail Heritage Register	Palmwoods Passenger Station, Main Street, Palmwoods	Yes		✓	✓

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Category ⁹	Location	Located in study focus area	Source	Located During Survey	Photo
Queensland Rail Heritage Register	Palmwoods Goods Shed, Main Street, Palmwoods	Yes		✓	✓
Queensland National Trust	Palmwoods Shops, Margaret Street, Palmwoods	Yes		✓	✓
Queensland National Trust	Group of Trees, Kolora Park Vicinity, Palmwoods	Yes		✓	✓
Queensland National Trust	Group of trees, Palmwoods Footpath & Shelter area, Chevallum Road, Palmwoods	Yes		✓	✓
Queensland National Trust	Remnant Forest Group, Paskins Road, Palmwoods (near Eudlo Creek National Park)	Yes		✓	✓
Queensland National Trust	Nicklin Road/Chevallum Road Tree Precinct Nicklin Road, Palmwoods	Yes		✓	✓
Queensland National Trust	Blackbutt Tree Chevallum Road Palmwoods	Yes		✓	✓
Identified During Study	Sir Francis Nicklin Memorial Clock, Outlook and 'Citizens Remembered' Tiling, Main Street, Palmwoods	Yes		✓	✓
Identified During Study	Palmwoods Kolora Park, Freshwater Lagoon, walking trail and mature plantings	Yes	Nominated by public	✓	✓
Identified During Study	Railway Workers Cottages, Main Street, Palmwoods	Yes	Nominated by public	✓	✓
Identified During Study	Palmwoods CWA Hall, Main Street, Palmwoods	Yes		✓	✓
Identified During Study	Flooded Gum, Palmwoods Railway Station,	Yes		✓	✓
Identified During Study	Palmwoods Bowls Club, Chevallum Road, Palmwoods	Yes	Nominated by public	✓	✓
Identified During Study	Queenslander, Pinnegar Residence, Location TBA	Yes	Nominated by public	Access required	-
Identified During Study	Early 20th Century House, 48 Chevallum Road, Palmwoods	Yes	Nominated by public	✓	✓
Identified During Study	CWA Park with mature plantings, Park Street, Woombye	Yes		✓	✓
Identified During Study	Woombye Scout Hall, west side of train tracks near station	Yes		✓	✓
Identified During Study	Soccer Club and grounds, west side of train tracks near station	Yes		✓	✓

⁹ Refer explanation of categories in section 7.2.4

Palmwoods to Buderim Tramway Route, Nicklin Way, Palmwoods

The former Palmwoods to Buderim Tramway right of way runs from Palmwoods Station to the intersection of Burnett and Main Streets and Lindsay and Ballinger Roads, Buderim. From Palmwoods it crosses, then parallels, Nicklin Road, crosses Old Chevallum Road and then runs north of Chevallum Road, crossing the Bruce Highway near Forest Glen. It then travels south of Mons Road, across Telco Road, follows Brecon Crescent and then north-east to the Buderim terminus.

There are several sections of the formation that are still visible but much has been absorbed in modern development. The section between Telco Road and Forest Glen remains most intact and contains cuttings, culverts, embankments and collapsed cattle grids. Some of the right of way is now used as private driveways. A visual inspection along the tramway route, within the study area, revealed little remaining features with the exception of a raised linear mound located between the Palmwoods Railway Station and Chevallum Road.



Figure 7.5.4a: Visible remnants of tramway route.

According to the Register of the National Estate, the tramway right of way has been nominated as significant because:

- It played an essential part in the development of the Buderim area in tropical fruit growing between 1911 and 1935
- The local council owned it in an era when the government normally controlled railways
- It had a 2ft 6in gauge, which was unusual and features important technical achievements of cutting a tramway through such steep terrain.

The Palmwoods to Buderim Tramway Route Track Foundation and Formwork Remnants are also considered to be of State significance. The Queensland Heritage Register citation for

the site includes similar attributes to the RNE and adds the aesthetic appeal of the tramway and special association with the local communities.

Chevallum Road Residential Precinct, 7-60 Chevallum Road, Palmwoods

Located on an elevated section of Chevallum Road, south of the town of Palmwoods, the Chevallum Road Residential Precinct features an alignment of early 20th century timber houses that range from bungalows to multi-gabled dwellings. These early timber residences are predominantly low-set and situated amongst ample allotments with established vegetation. The Chevallum Road Residential Precinct is a good remaining example of a collection of early 20th century residences.

The cultural heritage significance of the Chevallum Road Residential Precinct, Palmwoods, is yet to be assessed.



Figure 7.5.4b: View to multi gabled house, Chevallum Road from east.



Figure 7.5.4c View to bungalow Chevallum Road from west.

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Blackall Street Precinct, Woombye

The Blackall Street Precinct is the main street of Woombye that transects the town along an east-west axis. The street is lined with low-rise commercial premises as well as residences, many of which are early 20th century timber framed and clad, with corrugated iron clad roofs. Blackall Street is a vibrant town centre, busy with locals and visitors, with a streetscape that is enhanced by ample footpath, vegetation, and amenities such as public benches.

The location of the train station at the end of the street was a contributing force to the historic development of the town of Woombye, a transport hub that remains integral to the life of the town. Blackall Street aligns towards the east from the station, along elevated topography. Prominent landmarks within the precinct include the Criterion Hotel, located overlooking the train station, as well as the adjacent War Memorial Park.

The cultural heritage significance of the Blackall Street Precinct, Woombye, is yet to be assessed.



Figure 7.5.4d: Low-rise commercial premises Blackall Street, Woombye



Figure 7.5.4e: Landscaping and amenities along Blackall Street, Woombye.

7.5.5 Visual Amenity and Landscape Character

There are two areas with distinctly different visual character areas within segment D:

- The urban settlements of Palmwoods and Woombye
- Open pasture/cropland between the two settlements.

Palmwoods

Palmwoods is characterised by:

- Its urban layout which is set on curving streets following undulating landform
- Its setting against the densely vegetated peaks of the Blackall Range
- Its central, densely vegetated, recreational open space and ponds (Kolora Park)
- The existing rail corridor and viaduct that bisects the centre of town
- The Eudlo Road forested, steep gradient 'north-east gateway' to the township

The business centre layout is in three 'clusters' set on Margaret Street and Woombye-Palmwoods Road. Landform to the western side of the railway is at a higher elevation than to the eastern flood prone area.

The built form along the main street is slightly run down in condition, but prominent visually as it follows a steep slope down to the railway viaduct. Views from this section of road are heavily influenced by traffic movements (fast downhill/difficult incline for heavy goods vehicles) and the viaduct itself at elevation. The town centre layout reflects the historical development of the township and is unique in form. Building types generally average as mostly single storey terrace, semi-detached or detached timber structures with awnings. The public realm within the town centre contributes to the setting and is visually characterised by:

- The treed backdrops and topography
- Kolora Park mature forested surround and ponds (although water quality is poor and detracts from the condition of the space)
- Some pedestrian movement at shop fronts
- Car movements.

There are also civic features for which there is opportunity for links to be improved, including to/from the town centre and railway station.

The railway corridor is a distinct visual feature through the township. Overhead power lines, trains, signals and the viaduct (and other associated infrastructure) provide a visual obstruction between east and west and are generally out of scale in relation to the surrounding built form.



View north west across Kolora Park ponds and open space from Kolora Park walking track pedestrian jetty.



View north east from Margaret Street to the existing railway viaduct and busy road intersection.

Pastureland and cropland to the north of Palmwoods is characterised by expansive views unique to the local area and composed of flat to gently undulating topography; lush, green, pastureland/crops; tree lined creeks and perimeter fences bisecting the landscape; intermittent bushland blocks; and regular paddock patterns. Scattered rural residences also form part of these views and are residents in these areas will be sensitive to changes in the visual landscape. Views to the existing railway corridor are filtered in places by existing mature vegetation.

Substantial impacts upon visual amenity in Palmwoods are likely to be experienced by residents, road users and people using recreation facilities to the east of the town and on the eastern side of the study focus area.

Woombye

Woombye has a strong sense of place characterised by a relatively dense residential layout, a busy main street at elevation to the railway station, the existing railway corridor along the western edge of the business centre and high quality recreational open space to the west and south-west of the town centre (Woombye Showgrounds).

The built form reflects the historical development of the town with the town centre situated in close proximity to the railway station. Building types generally average as mostly single storey terrace, semi-detached or detached timber structures, some with awnings. However, some buildings are slightly run down in condition, and are visible from the western railway station and showgrounds to the west.

The public realm surrounding the railway station (including trains, station and associated infrastructure), as well as a row of mature trees, form the foreground to views from the business centre west. Open space and recreational fields in good condition (Woombye Showgrounds, scout hall, cricket and football fields, and the pony club), Paynter Creek and agricultural paddocks to the west are very important contributors to the setting, quality and amenity of the township. However, a row of mature trees along the railway corridor visually disconnects the town centre to this open space to a degree.



View east from Campbell Street across the railway station precinct to the Woombye town centre behind.

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View north west across Woombye Showgrounds and recreational facilities from Back Woombye Road.

Substantial impacts upon visual amenity in Woombye are likely to be experienced by residents, road users and people using recreation facilities particularly to the west of the segment D. In particular, changes to the recreational open space could severely impact upon the setting and character of the township. Residents in houses adjacent to the existing railway corridor would also be significantly affected and are potentially the most sensitive of affected groups. In both towns, shoppers and visitors, public transport patrons, users of recreational facilities and open space, occupants of commercial/retail premises could also be affected, however the severity are likely to be reduced due to the grade separation of the rail line from the townships.

7.5.6 Socio-economic Characteristics

Palmwoods

The population of Palmwoods at the time of the 2006 Census was 2,622, which was an increase of 13.9% compared to the 2001 figure of 2,302.

Indigenous people accounted for 1.6% of the total population in Palmwoods. This was relatively consistent with the low proportion of 1.7% of residents who identified themselves as being Indigenous within the study area.

The township of Palmwoods recorded a slightly lower proportion of couple families with children than the Landsborough to Nambour study area as a whole. In contrast, a higher proportion of one parent families were recorded in Palmwoods (17.8%) than in the study area (15.7%).

The average household size in Palmwoods was 2.7, which is the same as that of the study area.

The dominant industries of employment in Palmwoods were construction (13.7%), retail trade (14.1%) and health care and social assistance (13.3%). The town was also strongly represented in the education and training, and manufacturing industries.

The most common occupations in Palmwoods were technicians and trades workers (16.6%) and professionals (16.2%). This compared to 18.0% and 14.8% respectively.

The median weekly individual income in Palmwoods was \$250-\$399.

At the time of the 2006 Census, 40.0% of all occupied private dwellings in Palmwoods were in the process of being purchased. This was the largest tenure type in Palmwoods, just ahead of outright ownership (30.0%) and renting (21.6%).

In Palmwoods, 88.5% of dwellings are separate houses, while in the Landsborough to Nambour study area, the proportion is slightly lower at 86.8%.

Housing loan repayments were marginally lower in Palmwoods than they were in the Landsborough to Nambour Study Area. The average housing loan in Palmwoods was \$1,163 per month, while in the average for the study area was \$1,215.

The majority of households in rented dwellings were paying between \$225-349 per week for rent.

Compared to the study area, slightly higher proportions of people were currently attending pre-school (7.0%), primary school (36.1%), TAFE (8.0%) or university (6.3%) than in the study area.

Palmwoods had a relatively similar distribution of non-school qualifications to the Landsborough to Nambour study area with residents with graduate diplomas accounting for 3.3%, those with bachelor degrees being 16.84%, those with advanced diplomas being 16.3% and residents with certificates accounted for 42.7% of residents.

Woombye

At the time of the 2006 Census, Woombye township had a population of 812 persons, which was equivalent to an increase of 12.6% from the 2001 Census population figure of 721. This increase was higher than the growth recorded for the study area (11.38%).

The proportion of non-Indigenous population in Woombye was similar to that of the study area (94.8% and 94.4% respectively). Indigenous people accounted for 2.1% of the total population compared to 1.7% in the study area, indicating a higher proportion of Indigenous people residing in Woombye.

Proportions of families with children including couple parents and single parent families residing in Woombye were both higher than that of the study area (45.2% compared to 43.6% and 17.5% compared to 15.7%) whilst the proportion of couple families with no children was lower (36.0% compared to 39.7%). The high proportion of families with children in Woombye is likely to be due to its close proximity to schools located in Nambour and surrounds.

The average household size in Woombye was 2.6 persons per household which was slightly lower than that of the study area at 2.7 persons per household.

The most common occupations for Woombye residents were labourers (18.2% of employed persons), technicians and trades workers (17.9%) and professionals and sales workers (13.9%).

The dominant industries in Woombye were retail trade (16.3%), construction (11.2%), manufacturing (8.8%) and health care and social assistance (9.1%). Proportions of employed persons who work in the retail industry were higher in Woombye at 16.3% than in the study area at 13.1%.

The median individual income in Woombye was \$400-\$599. Woombye contained greater proportions of households who earn high incomes, specifically from \$1,400 and upwards. The median household income for Woombye and the study area was \$1,000-\$1,199 per week.

Dwelling tenure in Woombye indicates greater proportions of fully owned and rented properties, with fewer properties in the process of being purchased when compared to the study area. In Woombye, 39.7% of dwellings were reported as being fully owned compared to 35.4% in the study area. Households who were renting a dwelling accounted for 28.2% of all households in Woombye compared to 22.5%.

Separate houses accounted for the majority of dwelling types in Woombye which included 91% of all households which was higher than 86.8% in the study area. The proportion of semi detached dwellings was slightly higher in Woombye at 5.45% than the study area at 3.3%.

Monthly home loan repayments in Woombye were slightly higher than repayments made in the study area, with on average \$1,300 being paid per month in Woombye compared to \$1,215 in the study area.

Based on the available data from the 2006 Census, the majority of rents paid by households in Woombye was between \$140 and \$499 per week.

According to the 2006 Census, the proportion of Woombye residents attending pre-school was 7.1%, those attending primary school was 33.3% and those attending secondary school was 24.3% (compared to 5.5%, 33.9% and 23.5% for the study area respectively).

Woombye residents were more likely to be attending a tertiary institution compared to the study area as a whole. Those who were attending TAFE accounted for 7.1% in Woombye (5.9% in the study area) and those attending university comprised 8.1% of Woombye residents (6.3% in the study area).

Certificate qualification was the most common type of education attained by Woombye residents (40.0%) although proportionally, it was lower than the study area (41.8%). With postgraduate qualification, a higher proportion of Woombye residents held a postgraduate degree (3.6%) compared to the study area (2.0%). It is likely that the lifestyle of the area attracts qualified professionals who commute to larger centres for employment.

7.5.7 Geology, Topography and Soils

Segment D comprises a generally level and low lying area adjacent to Paynter Creek. It is likely that the proposed alignments follow the edge of the alluvial deposits associated with this water course, and would therefore be anticipated to be underlain by soft, compressive soils. The presence of these soils will ensure that the extensive earthworks required to maintain the proposed alignments be designed to prevent or cater for significant settlements and potential for deep seated instability of bulk fills.

Proposed alignments to the east or west of the corridor are likely to be similarly impacted by the presence of alluvial soils.

7 Overview of the Study Focus Area

7.5.8 Flooding

Segment D includes the Paynter Creek floodplain. Due to the geometry of the floodplains, the lateral spread of the 100 year ARI design flood is significant. Assuming that the entire floodway should be bridged to avoid upstream negative impacts, the cumulative length of bridge could vary from 1,205m to 2,110m depending on the route option. Route options to the east are likely to cross less flood prone areas than route options to the west.

In addition to the major bridges, between two and three cross-drainage structures are required to accommodate small flowpaths.

7.5.9 Water Quality

The following significant waterways are present in Segment D of the study area:

- Paynter Creek
- Tributaries of Paynter Creek.

Paynter Creek and its tributaries lie within the Maroochy catchment and flow into Petrie Creek and subsequently to the lower Maroochy River estuary. As mentioned in the baseline reporting, the freshwater streams in the Maroochy catchment are generally in fair condition.

7.5.10 Noise

Palmwoods

The informal and historic settlement pattern of Palmwoods is concentrated on the western side of the railway corridor and is characterised by detached dwellings on residential allotments. Both residential and commercial developments directly abut the western corridor. Some industrial uses are also immediately adjacent to the line in close proximity to the town centre. Other residential pockets are dispersed on the eastern side of the corridor. A number of community facilities are located within the town centre including the Anglican Church. Residential development spans much of the study area around the Palmwoods town centre with the exception of a swathe of rural land to the east. Potential noise generators such as the incubator craft industries and industrial area are located on the western side of the corridor.

Anecdotal evidence suggests that residents have identified that noise associated with passing loop/shunting is a concern to those living in its vicinity.

Woombye

The urban area of Woombye is concentrated on the eastern side of the NCL and is contained by the Nambour Connection Road resulting in a distinct village. Woombye village is residential in nature with traditional detached housing as the predominant form focused on the commercial main street. Sensitive receptors by way of residential dwellings and community facilities are focused to the east of the corridor. Within the general Woombye area other sensitive receptors include rural residential development and the Woombye Care Residential and Community Aged Care to the west.

7.5.11 Transport and Road Network

The following major roads are located in segment D:

- Chevallum Road (a district collector)
- Palmwoods-Woombye Road (a controlled distributor)
- Jubilee Road (a district collector)
- The Palmwoods-Montville Road (via Margaret Street in the Palmwoods township).

Presently these four roads intersect adjacent to a rail bridge with low clearance. The road at this intersection is subject to inundation and forms an unsafe intersection with poor sight lines.

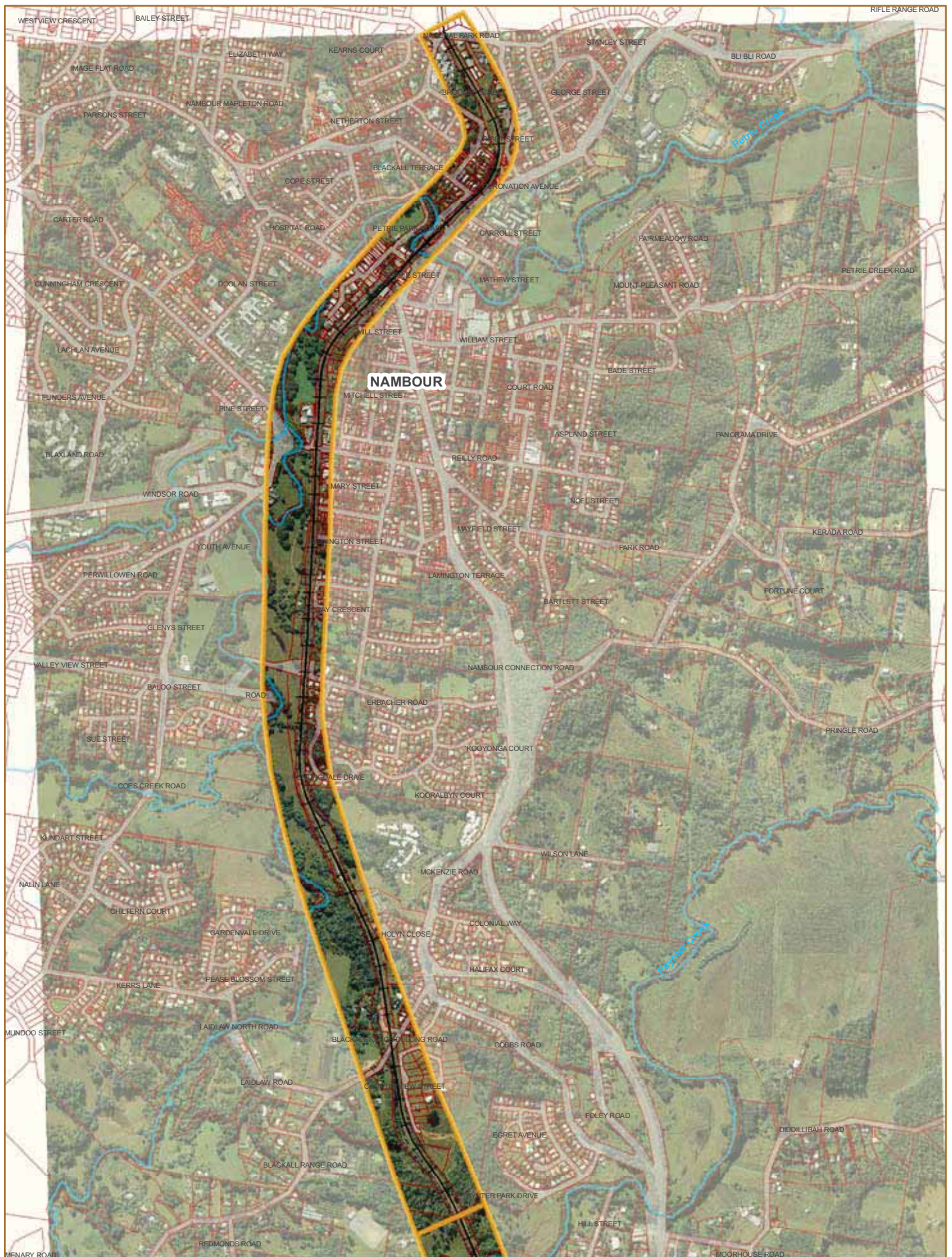
These streets also form part of an identified local cycle route.

Other local roads traversing parts of segment D include:

- Railway Street
- Spackman Lane
- Taintons Road
- Mullers Road/Back Woombye Road.

7.6 Segment E – Nambour

Segment E begins just to the north of Paynter Creek, and the township of Woombye. It ranges from 280 m wide, to 200 m towards the northern end. It continues to north of Nambour station, mostly along the existing alignment. Between Woombye and Nambour, the current line is elevated above the Petrie Creek flood plain, which is located on the western side of the rail line. This segment of the study focus area has been extended north of Nambour Station to allow for consideration of future train stabling requirements and to ensure efficient rail operations at Nambour Station. Segment E is one of the most constrained from an urban land use perspective and also needs to meet up with Nambour Station in its current location. Segment E is shown in Figure 7.6.



March 2008

0 200 400 600 800 Meters

- Legend**
- Study Focus Area
 - Creeks
 - Existing Rail Line
 - Property Boundaries
 - Roads

**Landsborough to Nambour
Rail Corridor Study**

**Figure 7.6
Nambour (Segment E)**

While every care is taken to ensure the accuracy of this data, Queensland Transport makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which might be incurred as a result of the plan being inaccurate or incomplete in any way and for any reason. Base information supplied by Maroochy and Caloundra Councils and Department of Natural Resources and Water. The areas shown in this figure are subject to change and final refinements during further assessment and preliminary design.

7 Overview of the Study Focus Area

7.6.1 Community Feedback

- Concerns about impacts to local horticultural businesses
- Concerns about impacts on local road network (including issues about existing road infrastructure)
- Environmental concerns associated with Petrie Creek
- Suggestion to place routes to the east of urban development within Nambour
- Concerns about existing safety and security of the pedestrian underpass at Nambour Station.

7.6.2 Ecology

Key features of ecological significance within segment E of the study focus area are summarised below.

The Biodiversity Planning Assessment (BPA) maps indicate that there is a scattering of State significant areas within Segment D, particularly around creek lines and tributaries of Petrie Creek. The habitat is largely broken up in this area, which is heavily affected by rural and residential development. The significant areas are recognised particularly for these criteria:

- Core habitat for EVR species.

Regional Ecosystems in this area are dominated by 'Of Concern' vegetation and 'Not of Concern' vegetation, concentrated around Petrie Creek. There is little vegetation elsewhere within segment E.

Areas protected for conservation purposes within Segment E include local parks, which are not protected by the *Nature Conservation Act 1992*.

Major Waterways within Segment E are Petrie Creek and its many tributaries. These waterways are significant in that they support 'Of Concern' vegetation. The majority of the minor drainage lines contribute to the Maroochy River catchment area.

The area has not been recognised as Urban Koala Habitat in the *Nature Conservation (Koala Conservation) Plan 2006*.

Significant Species recorded in the area are generally concentrated in and around Petrie Creek. They include several species listed under the *Nature Conservation Act, 1994*:

- *Adelotus brevis* (Tusked Frog) – Vulnerable
- *Accipiter novaehollandiae* (Grey goshawk) – Vulnerable (SEQ Qld).

Consultation with Maroochy Shire Council has indicated that Petrie Creek is considered to have significant ecological and conservation values, and also forms part of a recreational and open space link.

7.6.3 Land use and planning

To the south of Nambour, segment E traverses rural land that is transitioning to residential. A number of pockets of low density residential development, a recreational reserve and the Nambour Christian College abut the eastern side of the rail line. From Arundell Street heading north, the land on both sides of the existing railway line is used for a mix of commercial and industrial uses.

Located in the foothills of the Blackall Range, the town of Nambour is surrounded by hills and hillside vegetation. It has a country town character which reflects its agricultural past.

Until the closure of the Moreton Sugar Mill in 2003, sugar cane was the major economic activity in the Nambour region. Today the long term future of the sugar industry in the area is in doubt and Nambour's economic future is determined by its role as the Major Administration Centre for the region, including Maroochy Shire Council's administrative centre, a public and a private Hospital and other regional health facilities. Business in Nambour consists of higher order goods and services to residential communities in the hinterland and rural parts of the shire. These include medical and educational facilities which are considered to be district and regional level facilities. Nambour also has a relatively high number of retirement villages and aged care facilities.

The range of community infrastructure and services found in Nambour, include:

- Nambour State Schools
- Nambour Christian College
- TAFE
- Places of worship
- Nambour Library
- Civic Centre
- Neighbourhood centre
- Visual and Performing Arts Facility
- Showgrounds
- Horse and Pony club
- Hospital and allied services
- Recreational facilities and parks within Nambour include Petrie Park, Moss Day Park, Huntingdale Park, Jubilee Park and Koala Park.

Nambour is identified in the Regional Plan as being a Major Activity Centre, Commercial/General Economic Activity Centre and a key inter-urban node for the regional public transport system.

The draft LGMS identifies Nambour as a Major Activity Centre/ Specialist Activity Centre, thereby supporting the Regional Plan's designation. Accordingly, Nambour is a focus for residential intensification. Council projects that the population of Nambour and its rural hinterland will double by 2026. Urban growth is likely to continue sprawling outwards from Nambour, within the Urban Footprint, including a major growth area to the south which will result in a continuous band of development between Woombye and Nambour framed by the existing railway and the Nambour Connection Road. Other development areas are to the north and west, beyond the study area. The Maroochy Plan 2000 also expects Nambour to become more valued as a pleasant residential location due to its attractive vegetation, topography and "country town" character.

Land within this segment is mostly freehold in private ownership with the exception of Reserves generally associated with creek lines and pocket parks.

7.6.4 Cultural Heritage

Historical records show that Nambour has always been an administrative centre for the Maroochy Shire region, with the Maroochy Divisional Board being established in the township in 1890. The establishment of the board coincided with the creation of the rail line that operated between Nambour and Brisbane. The township became officially known as Nambour in 1891.

In 1897, the Moreton Central Sugar Cane Mill began its operations in Nambour and it formed an important regional centre supporting the sugar industry in the region. The township's population grew in line with the growth of the Moreton Mill. As a result of the population growth, health, business and education facilities were also developed to cater for the needs of Nambour and other hinterland communities. The mill eventually ceased operation in 2003.

Despite the role of the railway in the growth of the town, it would appear that the rail line does not retain the same historical significance to the town, as it does to the other townships within the study area. The identity of the town is instead shaped by the history of the Mill and the town's role as a regional centre.

Table 7.6.4 following lists sites with cultural heritage values within the study focus area, or with values that may be impacted by the proposed works. Key sites are described in the following text. A more comprehensive listing of all heritage sites in the locality is included in the Cultural Heritage Report in Appendix D.

7 Overview of the Study Focus Area

Table 7.6.4: Cultural Heritage Sites

Category ¹⁰	Location	Located in study focus area	Source	Located During Survey	Photo
Known Place of Indigenous Significance				No	-
National or State Register	Nurses Quarters Nambour Hospital. Hospital Road, Nambour.	No	Register of National	No	-
National or State Register	Nambour Section of the Moreton Central Sugar Mill Cane Tramway, Mill Street, Currie Street and Howard Street, Nambour	Yes	Queensland Heritage Register	✓	✓
National or State Register	Moreton Central Sugar Mill Worker's Housing (former). 17 & 19 Mill Street, and 14 & 16 Bury Street, Nambour.	Yes	Queensland Heritage Register	14 17 19	✓
Potential National or State Register	Old Bruce Highway Road Rest Areas Foleys Road, Paynters Creek, Nambour Connection Road	No	Proposed for inclusion in Queensland Register	✓	✓
Potential National or State Register	Big Pineapple Nambour Connection Road, Nambour	No	Proposed for inclusion in Queensland Register	✓	✓
Precinct	Currie Street Precinct, Nambour	No	Maroochy Shire Council	✓	✓
Precinct	Nambour Hospital, Hospital Road, Nambour	No		✓	✓
Precinct	Mill Street, Nambour	Yes		✓	✓
Precinct	Netherton Street and Blackall Terrace Precinct	No	Maroochy Shire Council	✓	✓
Precinct	Lower Blackall Terrace Precinct, Nambour	Yes	Maroochy Shire Council	✓	✓
Precinct	St Josephs Catholic Church and trees Precinct, 173-170 Currie Street, Nambour	No		✓	✓
Precinct	Donaldson Street and surrounds	No	Maroochy Shire Council	✓	✓
Precinct	Magnolia Street and surrounds	No	Maroochy Shire Council	✓	✓
Precinct	Vernon Street and Washington Street Residential Precinct, Nambour	Yes		✓	✓
Heritage Place	Club Hotel, 78-84 Currie Street, Nambour	No		✓	✓
Heritage Place	Railway Bridge, Currie Street, Nambour	Yes		✓	✓
Heritage Place	Royal George Hotel, 90-92 Currie Street, Nambour	No		✓	✓
Heritage Place	Salvation Army Hall, Church and Shop, 163 Currie Street, Nambour	No		✓	✓
Heritage Place	Northern Warehouse (former cinema), 94-98 Currie Street, Nambour	No		✓	✓
Heritage Place	Lowe Residence and others, 72 Netherton Street	No		Gone	-
Heritage Place	Residence, 37 Blackall Terrace, Nambour	No		✓	✓
Heritage Place	Masonic Lodge, 5-7 Blackall Terrace, Nambour	Yes		✓	✓

Category ¹⁰	Location	Located in study focus area	Source	Located During Survey	Photo
Heritage Place	Community Hall, Diddillibah and cemetery, 658-622 Diddillibah Road, Nambour	TBA		No	-
Heritage Place	Moreton Mill Weir, Petrie Creek	TBA		No	-
Heritage Place	Nambour Museum, 18 Mitchell Street, Nambour	No		✓	✓
Heritage Place	Petrie Park, Price Street, Nambour	Yes		✓	✓
Heritage Place	Mill Manager's home and two others, 14 Bury Street, Nambour			See items of State Significance	
Queensland Rail Heritage Register	Nambour Station, Nambour	Yes		✓	✓
Queensland National Trust Register	Maroochy Shire former Nambour Post Office, Currie Street Nambour	TBA		No	-
Identified During Study	Timber road bridge , Blackall Range Road, Woombye, GPS 56 J Easting 0498481, Northing 6964135	Yes		✓	✓
Identified During Study	1920s House, Thompson Residence, 15 Blackall Terrace, Nambour	Yes		✓	✓
Identified During Study	Historic Houses, Staines Residence and others, 42 Vernon Street, Nambour	Yes		✓	✓
Identified During Study	Community Hall, 20-24 Price Street, Nambour	Yes		✓	2/28
Identified During Study	Early 20th century timber shop, Corner Price Street and Hospital Road, Nambour	Yes		✓	2/29
Identified During Study	Asymmetrical Bungalow, 43 Price Street, Nambour	Yes		✓	✓
Identified During Study	Memorial Park and Cenotaph, Corner of Blackall Terrace and Coronation Avenue	Yes		✓	✓
Identified During Study	Early 20th century timber house, 4 Blackall Terrace, Nambour	Yes		✓	✓
Identified During Study	Early 20th century timber house, 17 Blackall Terrace, Nambour	COS		✓	✓
Identified During Study	Early 20th century timber house, 33 Blackall Terrace, Nambour	COS		✓	✓
Identified During Study	Early 20th century timber house, 37 Blackall Terrace, Nambour	Yes		✓	✓
Archaeological Potential	Former Sugar Mill Site, Mill Street, Nambour	Yes		✓	✓

¹⁰ Refer explanation of categories in section 7.2.4

7 Overview of the Study Focus Area

Nambour Section of the Moreton Central Sugar Mill Cane Tramway

The tramway was constructed to service the Moreton Central Sugar Mill and was in use from 1897 until 2003. The cane tramway is laid directly into the centre of the roadway and runs through the central business district of Nambour. It is of 2-foot (610 mm) gauge and travels between the road reserve in front of the former mill site in Mill Street, across the Currie Street intersection and down to the Howard Street marshalling yards.



Figure 7.6.4a: Former Moreton Central Sugar Mill Tram Tracks, Mill Street, Nambour

Former Moreton Central Sugar Mill Workers' Housing

Located along Mill Street and Bury Street, on the elevated position adjacent to the site of the former Moreton Central Sugar Mill, are several workers cottages as well as the former Mill Manager's residence. The two timber cottages at 17 and 19 Mill Street, built sometime between 1897 and 1917, and the timber house with its extensive garden and mature trees on Bury Street, built between 1907 and 1911, provide rare surviving evidence of the sugar industry that powered the economy of Nambour and the Maroochy Shire from 1897 to 2003 (EPA 2007).

14-16 Bury Street is a large colonial, featuring an open U-shaped veranda, later porched entry and extensive grounds. The proportions of this former residence in relation to the other cottages and its location further away from the Mill site, support the assumption that this is the probable location of the former Mill Manager's residence.

17 Mill Street is a early 20th century low-set bungalow with L-shaped veranda. The timber framed and clad residence, with a weatherboard clad veranda and corrugated iron roof is set within a large block of land on an elevated position.

19 Mill Street is an early 20th century low-set bungalow with front facing veranda. The house is of symmetrical design with central stair access, timber framed and clad, with corrugated iron roof.



Figure 7.6.4b: View to 14 Bury Street from east



Figure 7.6.4c: View to 19 Mill Street from west



Figure 7.6.4d: View to 17 Mill Street from west

Mill Street Precinct

The Mill Street Precinct, Nambour, located proximally to the Nambour Railway Station, includes the site of the former Moreton Sugar Mill, several remaining Sugar Mill workers and managers' houses, and the prominent heritage listed former Moreton Mill tramway tracks that run along Mill Street, cross Currie Street and continue along Howard Street. Despite the recent loss of the Sugar Mill buildings, the precinct retains tangible associations with this former prominent infrastructure.



Figure 7.6.4e: View to north, former sugar mill site

Lower Blackall Terrace Precinct

The Lower Blackall Terrace Precinct, Nambour, is a residential street that aligns along the railway line then veers perpendicular up the hill towards the ridgeline on which the Nambour Hospital is located. The lower part of the street, closest to the railway station, features the Nambour Masonic Lodges as well as a fine collection of early 20th century timber residences, many of which are set amongst ample allotments with established vegetation.



Figure 7.6.4f: View to Masonic Lodge, Blackall Terrace, Nambour



Figure 7.6.4g: View to residence, Blackall Terrace, Nambour

Vernon Street and Washington Street Precinct

The Vernon Street and Washington Street Precinct, Nambour, is an area of early residential development for the town of Nambour, located adjacent to the existing railway line. The precinct features many fine examples of early 20th century architecture, predominantly asymmetrical bungalows, of timber frame and cladding and corrugated iron roofs.



Figure 7.6.4g: View to south Vernon Terrace, Nambour

7 Overview of the Study Focus Area

7.6.5 Visual Amenity and Landscape Character

There are two areas with different visual characteristics and context within segment E:

- The dense urban form of the Nambour Station precinct
- The more suburban form of the urban settlement area of Nambour including Rangebrook Estate, Petrie Creek Valley and Nambour North.

The visual character of the greater Nambour area is characterised by its:

- Tree lined streets following undulating topography
- Strong presence of street trees
- River flats with dense riparian vegetation
- Railway in cutting and/or on embankment
- Urban setting against the forested hills and foothills of the Blackall Range
- Recent residential subdivisions.

The station precinct is located close to the rear of the business centre with visual links restricted by the built form to the east of the railway, and a mature stand of trees to the west of the corridor. This area is generally of poor to average visual quality with areas for improvement in condition of built and landscape elements, and visual links. The station itself is of average to good condition. Characteristic visual features include the built form of the railway station itself and its relationship to the town centre. The layout currently reflects the functional purpose of the development of Civic Way. Views from/to this section of road are composed of traffic movements (passenger drop off/pick up, buses, and taxis), the trains and train infrastructure itself. The rear of buildings currently fall adjacent to the railway precinct and do not contribute positively to a sense of place, visual amenity or security of the public realm.

The majority of receptors within the station precinct include shoppers and visitors, public transport patrons, occupants of commercial/retail premises, and users and staff of Queensland Rail. The most sensitive residential receptors exist in houses adjacent to the existing railway corridor comprise the minority proportion of viewers.



Figure 7.6.5a: View south of Nambour Station

Visual amenity is enhanced by the landscape of the Petrie Creek Valley located to the west of the existing rail corridor and between ongoing urban development – a local landmark view. Building type is generally detached bungalows to one storey in height set back from street edges and/or within cul-de-sacs. Infrequent pedestrian movement and some vehicular movement add to the visual context. Views from street level are influenced by the undulating topography, but are broad along wide streets, across the open space of Petrie Creek Valley and the railway corridor. Views of the railway corridor itself are generally filtered by vegetation, topography and the railway in cutting. However, some residences are at elevation to the route and may experience clear views. Mature trees within open space and lining street verges also frame and/or filter views.

The most sensitive residential receptors exist in houses adjacent to the existing railway corridor comprise the majority proportion of viewers. Road user numbers viewing the corridor are also high, with pedestrians and users of open space forming the minority.



Figure 7.6.5b: View west along Arundell Avenue to the existing railway bridge.



Figure 7.6.5c: View west across the new Rangebrook Estate to the existing railway corridor (in cutting) and bridge.



Figure 7.6.5d: View west from Erbacher Road across the existing rail corridor and Petrie Creek Valley.



Figure 7.6.5e: View west from residential Erbacher Road towards rail corridor and Petrie Creek Valley.

It is anticipated that any route option will cause localised change to the existing landscape and visual amenity, particularly within the Petrie Creek Valley. Scheme elements would be visible within the landscape, but would be seen within the context of the existing railway corridor. The ultimate layout, form, material and colour of the infrastructure would play some role in determining its influence on visual amenity. Vegetation removal would also constitute an obvious change in view. However, there is scope for mitigation, particularly through vegetation screening, earthworks (bunds), but the impacts can not be completely mitigated because of the nature and location of the project within the landscape through which it passes.

7.6.6 Socio-economic Characteristics

Nambour's population increased from 12,782 in 2001 to 14,121 in 2006, which equated to a percentage change of 10.5%, slightly lower than the change recorded for the study area for the same period (11.4%).

Indigenous persons accounted for 2.7% of the population, which was higher than that of the study area (1.7%).

Couple families without children accounted for the majority of all families in Nambour (39.1%) whilst couple families with children accounted for 38.7%. Compared to the study area, Nambour had a higher proportion of single parent families (20.7%) than the Landsborough to Nambour study area (15.7%).

The average household size in Nambour was 2.48. This was lower than the average recorded for the Landsborough to Nambour study area, which was 2.7 persons per household.

The dominant industries of employment for Nambour residents were health care and social assistance (16.7%) and retail trade (14.6%). These industries were proportionally higher in Nambour when compared with the study area (12.8% and 13.1% respectively). Nambour was also strongly represented in the construction, and manufacturing industries.

The dominant occupation in Nambour was technicians and trade workers, representing 17.9% of the employed population. This is followed by labourers (15.8%), with machinery operators and drivers the least prevalent occupation in Nambour (6.9%).

7 Overview of the Study Focus Area

The median weekly individual income in Nambour was \$250-\$399. Nambour was proportionately underrepresented in all income brackets above \$1,200 per week compared to the study area.

Separate houses are by far the dominant dwelling type in Nambour. In Nambour, nearly four in every five dwellings (78.4%) were separate houses, while separate houses accounted for 86.8% of all dwellings in the study area. In contrast, semi-detached dwellings represented 5.9% of dwelling stock in Nambour, compared to 3.3% for the Landsborough to Nambour study area.

One third of all occupied private dwellings in the town of Nambour were being purchased at the time of the 2006 Census. This was the largest tenure type followed by renting (accounting for a slightly lower proportion of dwellings at 31.3%) followed by full ownership (30.8%). Compared to the study area (22.5% and 35.4%), Nambour had a higher proportion of rented dwellings. This is likely to be due to Nambour having a lower median rental price in comparison to other localities in Maroochy Shire.

Housing loan repayments were significantly lower in Nambour than they were in the study area. The average housing loan in Nambour was \$1,115 per month, while in the Landsborough to Nambour Study Area, the average was \$1,215.

Generally, rents are cheaper in Nambour than they are in the Landsborough to Nambour Study Area. According to the 2006 Census, more than a quarter (28.7%) of rented dwellings in Nambour cost less than \$140 per week compared to 24.3% of dwellings in the study area. Similarly, Nambour had the lowest median weekly rental price compared to other townships in the study area.

In contrast, there are comparatively few rented dwellings in Nambour that cost between \$275-\$349 per week and just 1.5% that cost over \$350. In contrast, in the Landsborough to Nambour study area 14.5% of all rented dwellings cost between \$275-\$349 per week, and 3.0% that cost over \$350 per week.

Slightly lower proportions of Nambour residents were attending a pre-school, primary school or secondary school when compared to the Landsborough to Nambour Study Area. However, of the persons attending an educational institution in 2006, a higher proportion attended both TAFE and University while living in Nambour than did in the Landsborough to Nambour study area. This may be attributable to the close proximity of Nambour to the Sunshine Coast TAFE and the Sunshine Coast University and the availability of affordable rental housing in Nambour.

With regard to educational attainment, Nambour had a slightly lower proportion of persons with a certificate (41.5%) compared to the study area (41.8%). Similarly, the proportion of Nambour residents with an advanced diploma or diploma degree was lower (13.6%) compared to that of the study area (14.6%).

7.6.7 Geology, Topography and Soils

The section from Woombye to Nambour is undulating, with generally minor earthworks required to achieve the desired grade of the route options.

The geological map indicates that this area is underlain by alluvial materials associated with these water courses, which would be anticipated to comprise potentially soft and compressible soils, with possible acid sulphate soil issues.

The extent of earthworks and structures in this area will be determined by potential impacts on flood storage impacts, and structures would likely be founded on deep foundations, bearing on the sandstone and shale of the Nambour Formation that underlies the alluvial soils.

7.6.8 Flooding

The Petrie Creek floodplain is located to the west of the existing rail corridor, within segment E.

7.6.9 Water Quality

Petrie Creek lies within the Maroochy catchment and flows directly into the lower Maroochy River estuary. As mentioned in the baseline reporting, the freshwater streams in the Maroochy catchment are generally in fair condition. The site with the lowest long-term annual ecosystem health “score” in the 2005/06 EHMP for the Maroochy catchment was on Petrie Creek.

7.6.10 Transport and Road Network

A new road bridge will be required on Blackall Range Road to replace the existing narrow bridge. This may have some impacts on surrounding properties, dependant on the final rail alignment.