



# **Kyogle Council**



# Pedestrian Access & Mobility Plan (PAMP)

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#### 1 INTRODUCTION

#### 1.1 Background

Pedestrians form the largest single road user group. Most individual trips, whatever the primary mode used, begin and / or finish with a walk section, so that walking is a fundamental component of all travel.

Kyogle Council is committed to providing long term planning for pedestrian access and mobility, to promote walking and cycling as desirable replacements for short trips and to link public transport services and community facilities.

In 1998, the Roads and Traffic Authority (RTA) began a new program to assist planning for pedestrians and developed its Pedestrian Access and Mobility Plan (PAMP) program to ensure better planning for pedestrians.

The PAMP approach involves joint funding from Council and the Roads and Traffic Authority, and in the 2006/07 financial year RTA funds were allocated to Kyogle Council for development of a PAMP for the Council area.

The PAMP is essentially a strategic document that identifies the pedestrian network hierarchy and an associated pedestrian facilities action plan. The PAMP is developed through community consultation, data collection, and review of existing standards and current practice. The outcomes of this process are the identification of pedestrian routes within the study area which form a coherent pedestrian network and the development of an action plan for these routes identifying locations where work is required to ensure the routes are safe, convenient, coherent, and meet current standards.

#### 1.2 Study Objectives.

The main aim of the Kyogle PAMP is to identify the pedestrian routes of most significance to the community and provide a strategy for the enhancement of those routes.

#### 1.2.1 Objectives

The objectives of the PAMP need to be clear and achievable within a reasonable time frame. In setting the objectives the PAMP team considered the existing footpath network, its maintenance requirements and the likely availability of funding to meet the objectives.

Specifically, the team has looked at connectivity within the network, directness, safety, accessibility and mobility and has focused strongly on providing continuity of pedestrian routes of similar standard linking the major pedestrian generators.

The PAMP team is made up of officers from the technical services, community services and planning and environmental services divisions of Council, and the teams work is subject to internal review and community consultation.

The objectives of the plan are:

• To facilitate improvements in level of pedestrian access, particularly in areas of higher pedestrian concentration.

- To provide continuity of pedestrian access by identifying and enhancing safe and convenient crossing opportunities on major roads.
- To facilitate improvements to the level of personal mobility and safety for pedestrians with disabilities and older persons through the provision of pedestrian infrastructure and facilities which cater to the needs of all pedestrians.
- To identify and resolve areas of concentrations of pedestrian incidents, crashes and near misses.
- To meet obligations under the Commonwealth Disability Discrimination Act, Civil Liability Act and Roads Act.
- To ensure that pedestrian facilities remain appropriate and relevant to the surrounding land use and pedestrian groups.
- To complement existing cycle ways and recreational paths.

#### 1.3 Methodology

In preparing this PAMP, three broad stages were involved in the process, namely;

Stage 1: Objectives

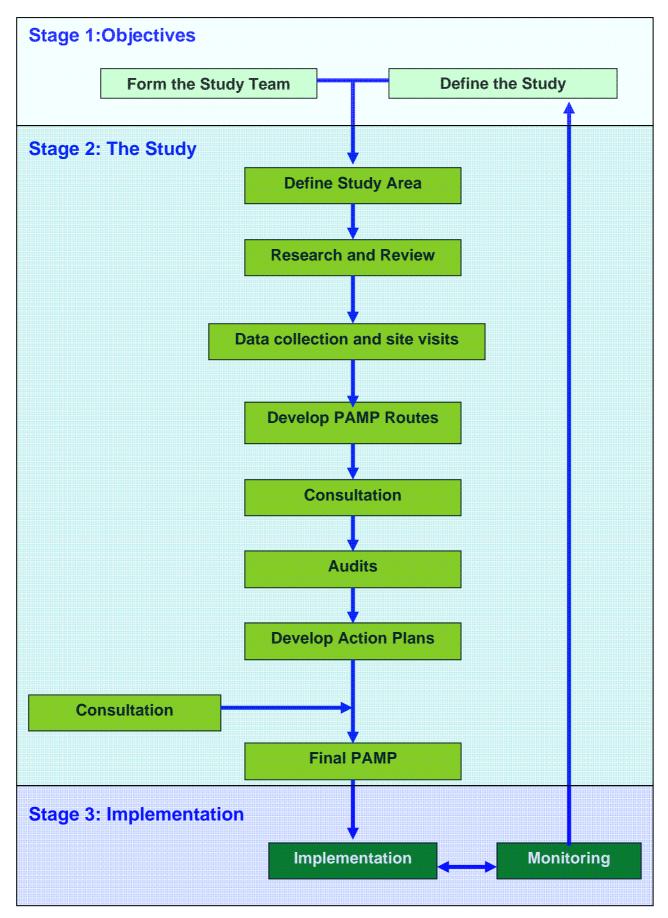
**Stage 2:** Preparation (The Study)

Stage 3: Implementation.

The methodology used for preparation of the PAMP is illustrated in Diagram 1.



Stratheden Street, Kyogle following completion of redevelopment works in 2008



**Diagram 1: PAMP Methodology Flow Chart** 

There are a number of components involved in the various stages of this methodology including;

- Data review
- Surveys
- Community consultation
- Development of PAMP routes
- Pedestrian audit of the routes
- Development of actions and the forward works program
- Consideration of Council policies and funding sources.

#### 1.4 Structure of the Report

The structure of this report is based on the suggested contents for a PAMP report from the RTA guidelines on "How to Prepare a PAMP" prepared in 2001. The document is split into 11 parts as follows;

- 1. Introduction (this part)
- 2. Study Area
- 3. Research, Review and Data Collection
- 4. Characteristics of the Local Government Area
- 5. Public Consultation
- 6. PAMP Routes
- 7. Audits
- 8. Funding Sources and Implementation of PAMP
- 9. Monitoring Program
- 10. Recommendation for Future Studies
- 11. Conclusions and Recommendations

In addition to these parts there are several figures and other relevant attachments. These are listed in the Table of Contents at the beginning of this document.

#### 2 STUDY AREA

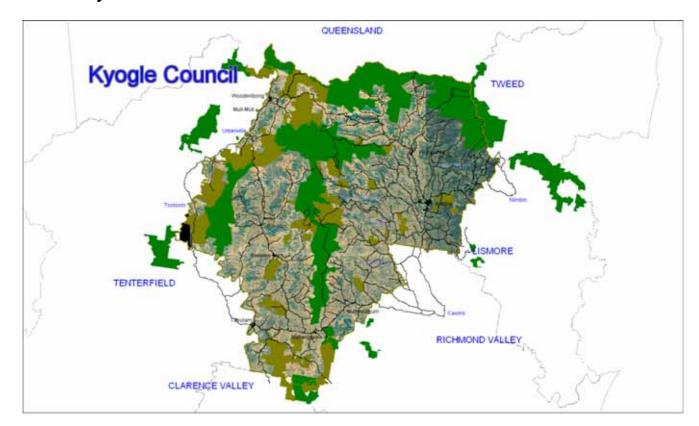
#### 2.1 Scoping Study

Although pedestrian and traffic volumes in the Kyogle Local Government Area (LGA) are relatively low in comparison with the much more densely populated areas in the region, the need to provide adequate facilities is just as important to the community. In recognition of these needs and the age and condition of the infrastructure it was decided by the PAMP team to include the following village areas;

- 1. Kyogle (including Geneva and the Golf Course Estate)
- 2. Wiangaree
- 3. Woodenbong
- 4. Old Bonalbo
- 5. Bonalbo
- 6. Tabulam
- 7. Mallanganee
- 8. Mummulgum.

Because of the different circumstances in each of the areas included in the study, each has been considered separately in the report

#### 2.2 Study Areas



#### 2.2.1 Kyogle.

#### **Population**

The population of the Kyogle / Geneva/ Golf Course area is approximately 2,798. Figures from the 2001 census show 46.1% of the population is aged between 15 and 55 years with 24.8% above the age of 55. The main method of travel in the area is by private vehicle with small numbers using public transport. Public transport is mostly used for inter town travel with few opportunities for intra town trips existing other than those undertaken by Community Transport.

#### Geographic features:

The main Kyogle area is quite hilly with steep grades common. The "flats" area separates the main urban area from the newer predominately residential area of Geneva west of the Richmond River, and the Golf Course Estate is a satellite residential development approximately 1km north of the main town area.

The Richmond River and Fawcetts Creek pass through the town with only two road bridges crossing these watercourses. Both have been constructed with pedestrian provisions.

The north coast Sydney-Brisbane railway also passes through the town in a north south direction with only three road crossings and two pedestrian underpasses within the town area. The Summerland Way crossings both provide pedestrian provisions, the northern crossing by footpath under railway bridge, the southern by pathway on bridge over railway line.

#### Road Hierarchy:

The Summerland Way is the major road through the area providing the main connecting road north and south of the town and is also the main street in the CBD, with traffic

volumes of up to 7000 vehicles per day in the town area. The Summerland Way is the main connecting road between the Golf Course Estate and Kyogle.

Anzac Drive runs west from the Summerland Way and connects the suburbs of the Flats and Geneva to the main town area, carrying traffic of about 2000 vehicles per day. Kyogle Road runs east from the Summerland way and is part of the Kyogle – Murwillumbah route as well as providing the main access to the town from the rural areas to the east which have the highest rural – residential population density. The road carries a traffic volume of about 1500 vehicle per day in the town area and 900 on the outskirts of the town.

Saville Street is the main distributor in Geneva linking with Wiangaree Back Road which also serves a large developing rural area to the north of the town, west of the Richmond River.

#### Pedestrian Generators

- Kyogle has three schools, Kyogle Public, Kyogle High and St Bridgids, all located in close proximity.
- Two preschools
- Swimming pool
- Commercial / retail area
- Carparks
- Cinema
- Public parks, sports fields and recreation grounds.
- Tourist Information / Outdoor Entertainment area
- Showgrounds
- Golf course
- 8 Churches

The Kyogle PAMP route network is shown in Figures A1 and A2 in Appendix B.

#### 2.2.2 Wiangaree

Population about 129 people. Wiangaree is situated on the Summerland way approximately 15km north of Kyogle and adjacent to the Richmond River. It has one school, a general store which services a wide community in the area, a public hall service station and two churches. Pedestrian traffic is minimal, however the community has expressed a need for a pedestrian footpath along the Summerland way for recreational use and to provide separation from the heavy traffic on the main road.

The Wiangaree PAMP route network is shown on **Figure B** in Appendix B.

#### 2.2.3 Woodenbong

Population about 333 people. Woodenbong is the second largest village area in the Kyogle LGA and has a range of pedestrian generators including a central school, hotel, shopping district, service stations, public hall, churches, police station, doctors surgery, swimming pool, sporting oval, caravan / camping area and showground.

The two major traffic routes in the village are Unumgar Street, which is part of the Mount Lindesay Road connecting the southern Darling Downs to the Northern rivers area, and McPherson Street which is part of the Clarence Way regional road linking the Bruxner Highway to the Mount Lindesay Road at Woodenbong.

The Woodenbong PAMP route network is shown on Figure C in Appendix B.

#### 2.2.4 Old Bonalbo

Population about approximately 92 people, Old Bonalbo is located on the Clarence Way at the intersection with Duck Creek road approximately 37km south of Woodenbong and 12 km north of Bonalbo. Pedestrian generators include a post office / general store, school and public hall, all located on Duck Creek Road and linked by an existing concrete footpath.

The Old Bonalbo PAMP route network is shown on **Figure D** in Appendix B.

#### 2.2.5 Bonalbo

Population of approximately 313, Bonalbo is located on the Clarence Way approximately 21 km north of the Bruxner Highway and 50km south of Woodenbong. The village has a range of pedestrian generators including a central school, preschool, swimming pool, caravan park, bowling club, golf course, recreational ground, hospital, aged care facility, central shopping area and hotel.

There is a network of concrete footpaths in the village which service most of the major pedestrian traffic generators but there are a number of missing sections and inadequate access ramps at intersections.

The Bonalbo PAMP route network is shown in **Figure E** in Appendix B.

#### 2.2.6 Tabulam

Population of approximately 112. The village is located on the Bruxner Highway at the intersection with Tabulam Road, and adjacent to the Clarence River near the Kyogle LGA boundary with Tenterfield. Pedestrian Generators include a public school, shopping area, hotel, post office, and general store and café.

The Tabulam PAMP route network is shown in **Figure F** in Appendix B.

#### 2.2.7 Mallanganee

Population of approximately 120. Mallanganee is located adjacent to the Bruxner Highway on the western side of the Richmond Range approximately 40km west of Casino. Bruxner Highway is adjacent to the village with the main access to the village via Sandilands Street. Pedestrian Generators include a public school, sporting oval and recreation area, community hall, hotel, shopping area, and restaurant.

The Mallanganee PAMP route network is shown in **Figure G** in Appendix B.

#### 2.2.8 Mummulgum

Population of approximately 20. Mummulgum is located on the Bruxner Highway approximately 25km west of Casino. The village is located on the Bruxner Highway at the intersection with Bingeebeebra Road. Pedestrian Generators include a community hall, public school and general store. The school and store are located on the southern side of the highway, the hall, and majority of residences are located on the northern side of the Highway.

The Mummulgum PAMP route network is shown in **Figure H** in Appendix B.

#### 3 RESEARCH, REVIEW AND DATA COLLECTION

#### 3.1 Literature Review

The main resource for the preparation of this PAMP was the document titled "How To Prepare A PAMP" produced by the RTA in 2001. This document is essentially a guideline for the preparation of a PAMP, and includes information on document structure, methodology and implementation of a PAMP.

The Kyogle Council footpath network was comprehensively inspected in 1999/2000, with this data being used to prepare a program of works for the existing path network, focusing on repairs and replacement of existing paths.

The Kyogle Council "Mobility Access – Management and Implementation Plan 2005" was prepared by JR Consultancy in 2005. This plan identifies many of the areas requiring attention to facilitate improved access and has been used as a starting point for this study. This represents a comprehensive audit of the existing pedestrian and access provisions to Council facilities.

The "Kyogle Council Social Plan 2005 - 2009" prepared by GHD in November 2004 provides information on demographics for the whole Council area. This information has been used in preparing the report.

The "Kyogle Road Network Management Plan" prepared by Kyogle Council in 2005 outlines Councils procedures for the inspection, assessment, prioritisation and implementation of all works associated with road related assets, including footpaths and cycle ways.

The "Northern Rivers Local Government Development and Design Manual" and "Northern Rivers Local Government Construction Manual" are based on the AustRoads guides and are used by a number of Councils in the Northern Rivers region. These documents, as reviewed from time to time, represent the design and construction criteria for all road related infrastructure, including footpaths and cycle ways.

The "Kyogle Strategy for Closer Rural Settlement and Urban Expansion" prepared by Kyogle Council in March 2005, outlines the future urban and rural residential growth areas. This document is then complemented by the "Kyogle Structure Plan For Twelve Preferred Areas" and the associated "Road Infrastructure Upgrade Assessment report To Accompany Kyogle Structure Plan" prepared by Newton Denny Chapelle in September 2007 which includes details for the re-zoning of twelve rural residential areas identified in the original strategy. Some of these areas are to be provided with a connection to the existing path network in the nearby villages.

A set of Master Layout Plans have been adopted for the Kyogle main street area. These plans were finalised in 2005 following considerable community consultation. The Kyogle Main Street Re-development — Phase 1 is currently under construction. The works being undertaken are in keeping with the Master Layout Plan. A discussion and reduced copy of the Master Layout Plans are attached in Appendix C.

Council's annual Management Plan provides information on Council's funding for all functions and services, including improvements to pedestrian facilities.

#### 3.2 Traffic and Pedestrian Data

Available traffic and pedestrian data for intersection movements and crossings were examined and used where conflicts were identified. This was used to assess the priority ranking for works.

#### 3.3 Pedestrian Crash Data

Pedestrian crash data for the past 6 years was examined and plotted on Councils GIS system as part of the overall road accident data provided by the RTA through the NSW Police records. There was very limited data available on pedestrian incidents in this data set. Council had access to some records of reported incidents and anecdotal evidence of near misses and high risk areas.

#### 3.4 Opportunities and Constraints

| Opportunities                                       | Constraints   |  |  |
|---|---|--|--|
| Possibility of external funding                     | Availability of Council funds                           |  |  |
| Provide safer routes to schools                     | Designs for site specific projects                      |  |  |
| Improve road safety                                 | <ul> <li>Isolated areas of existing pathways</li> </ul> |  |  |
| <ul> <li>Improve access for the disabled</li> </ul> | Lack of connectivity                                    |  |  |
| <ul> <li>Identify management priorities</li> </ul>  | <ul> <li>Existing pedestrian crossing</li> </ul>        |  |  |
| • Enhanced sight distance and                       | locations   |  |  |
| pedestrian visibility at major crossings            | <ul> <li>Standard of existing ramps</li> </ul>          |  |  |
| Contributions from new development                  | <ul> <li>Access for the disabled</li> </ul>             |  |  |
| through Section 94 contributions                    | <ul> <li>Topography and landform</li> </ul>             |  |  |
| Reduced pedestrian incidents                        | Vegetation  |  |  |
| Kyogle Main Street Redevelopment                    | Utility services  |  |  |

**Table 1: Opportunities and Constraints** 

#### 3.5 Design Standards

The design standards used by Council are prescribed in the Northern Rivers Local Government Development and Design Manual as updated from time to time.

Path surface and dimension standards are also outlined in Austroads Part 13: Pedestrians; Austroads Part 14: Bicycles, and the Australian Standard 1428 and 1742 series. Generally surface treatments should be stable, firm, even and smooth but slip resistant. Minimum path dimensions adopted for the Kyogle LGA are;

- Minimum footpath width 1.2m
- Desired footpath width in high traffic areas 2.4m (or full width between boundary and kerb and guttering where practicable, eg CBD Areas)
- Minimum shared cycleway/footpath width 2.0m
- Desired shared cycleway/footpath width 3.0m
- Minimum height clearance of 2.0 m above the trafficable surface
- Desirable height clearance of 2.4 m above the trafficable surface

Because of the steep terrain in Kyogle it is impractical to provide the gradients and flat landings as recommended in AS 1428.1 and paths are constructed with longitudinal gradients equal to the natural surface. Cross-falls are limited to a range of 1% desirable to a maximum of 4% except at gutter crossings and transition areas which are constructed to conform to current specifications.

The use of tactile markers is not supported for the visually impaired. In high traffic areas, or areas where visually impaired pedestrians may be common, use of contrasting colours and/or patterns is preferred at changes of grade, such as ramps. The Kyogle Main Street Re-development footpath stencilling pattern has been designed in this manner.

#### 4 Characteristics of the Local Government Area

#### 4.1 Population and Land Use

Kyogle Council services an area of 3,589 square kilometres and adjoins the Scenic Rim Regional Council in Queensland and the Councils of Tweed, Lismore, Richmond Valley, Clarence Valley and Tenterfield in New South Wales.

Kyogle Council comprises a large and diverse region with spectacular natural (including the renowned Border Ranges National Park and other world heritage listed areas) and cultural attributes, within two hours drive from Brisbane and one hour from Queensland's Gold Coast and NSW coastal communities of Byron Bay, Ballina and Tweed Heads. This, combined with a superb climate and a close proximity to all services, education and recreation, makes the Kyogle area an ideal place to live and work.

| Area       |       | Description            | 1996    | 2001    | 2006    |
|------------|-------|------------------------|---------|---------|---------|
| Far North  | Coast | Residential Population | 200,000 | 210,000 | 228,000 |
| Region     |       | Av. Annual Growth Rate |         | 0.98%   | 1.66%   |
| Kyogle LGA |       | Residential Population | 9714    | 9169    | 9256    |
|            |       | Av. Annual Growth Rate | 0.01%   | -1.15%  | 0.19%   |

**Table 2: Population Figures** 

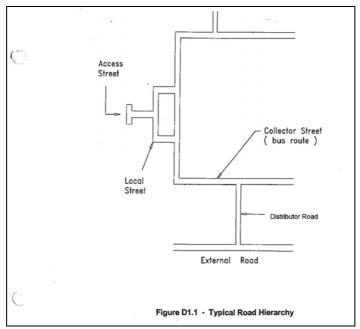
Figures published by the Australian Bureau of Statistics on 31 March, 2008 indicate an estimated resident population of 9686 for the Kyogle LGA at 30 June, 2007. This represents a 4.64% growth rate in the year following the Census count. As with the whole of the Far North Coast Region, the fastest growing demographic group in Kyogle will be the 65 and over age group, which reflects both an ageing population and also an inward migration of retired persons.

Throughout the whole of New South Wales, it is expected that the population aged 65 and over will more than double between the Years 2001 and 2031. Similarly, by the Year 2031, it is expected that the population aged 65 and over in the Richmond – Tweed Statistical Division will more than double to 91,000 persons, which will comprise almost one-third of the total population of the Richmond-Tweed Statistical Division. (Ref: New South Wales State and Regional Population Projections, 2001- 2051, 2004 Release – Department of Infrastructure, Planning and Natural Resources). This factor must be a major consideration in planning for pedestrian access and mobility.

#### 4.2 Road Hierarchy

Councils Road hierarchy and classification system for rural roads is set out in the Road Network Management Plan. For village and urban streets, a hierarchy and classification system has been defined and adopted, but not yet incorporated into the Road Network Management Plan.

A hierarchical road network is essential to maximise road safety, residential amenity and legibility. Each class of road in the network serves a distinct set of functions and is designed accordingly. The design should convey to motorists the predominant function of the road. A typical hierarchy is shown in Figure D1.1 below from the Northern Rivers Local Government Development and Design Manual, outlines a suggested road hierarchy for urban streets.



**Diagram 2: Typical Urban Streets Hierarchy** 

The urban streets hierarchy for the Kyogle LGA is based on this system. The urban streets classifications are as follows;

#### 4.2.1 Distributor Street

Referred to as a Distributor Road in the above figure and the "Northern Rivers Local Government Development and Design Manual". This is the highest order street within a residential development and should have as its main function the convenient and safe distribution of traffic generated by the development. Direct access should not generally be provided for single dwelling allotments but access can be provided multi-unit developments and non-residential land uses. The Distributor Street should serve only the development and should not attract through traffic. Provision should be made for footpath on one side of these streets as a minimum, and on both sides in some cases.

#### 4.2.2 Collector Street

The second highest order of urban street has a residential function but also carries higher volumes of traffic collected from the lower order streets. A reasonable level of residential amenity and safety is maintained by restricting traffic volumes and speeds, however, amenity and resident safety do not have the same priority as access or local streets. Provision should be made for footpath on one side of these streets.

#### 4.2.3 Local Street

The next level of urban street is a local residential street and this class should provide a balance between the status of that street in terms of its access and residential amenity functions. Resident safety and amenity are dominant but to a lessor degree than access streets. Provision for footpath on these streets is subject to a review of the network requirements.

#### 4.2.4 Access Street

The lowest order urban street having as its primary function, residential space – amenity features which facilitate pedestrian and cycle movements, and where vehicular traffic is subservient in terms of speed and volume, to those elements of space, amenity, pedestrians and cyclists. Footpaths are generally not required on these streets.

#### 4.3 Public Transport

Public transport in the Kyogle LGA is limited to privately operated bus and taxi services, and community transport services operated by government agencies or non-profit organisations. There is also the Sydney-Brisbane railway service, which operates a passenger service daily via Kyogle.

The location of bus set down and pick up areas and taxi ranks have been considered in identifying PAMP routes and projects. These have also been taken into consideration during the design and construction works associated with the Kyogle Main Street Redevelopment project.

#### 4.4 Future Pedestrian Needs

As discussed earlier, there is appears to be a significant demographic shift which will see an increase in the aged population. This also comes with a high growth projection of around 1% per annum through to 2031. This expected growth will mean that an additional 1240 dwellings will be required in Kyogle, and an additional 152 dwellings in the villages to service the population growth.

The main drivers for development in the villages are from in-fill type development at present. This is expected to change with the rezoning of the twelve preferred rural residential areas, and rezoning of new residential land in Kyogle. The rural residential areas of Geneva, Runnymede and the Golf Course Estate Stage, are all to be connected to the Kyogle path network. The rural residential areas near the villages of Wiangaree, Woodenbong, Old Bonalbo, Bonalbo, Mallanganee and Mummulgum are to be connected to the path network of the nearby villages. The rural residential areas near the villages of Tabulam and Cawongla, and the Homeleigh area will not be serviced by a path network.

#### 5 PUBLIC CONSULTATION

Kyogle Council is committed to providing long term planning for pedestrian access and mobility, and to promote walking and cycling in the communities within the Kyogle LGA. An important factor in the development of a PAMP is community consultation to determine what level of service the community finds acceptable for each pedestrian route category, and to identify current and future demands and needs to determine access priorities.

Two Council committees have been involved in the lead up work and preparation of this PAMP. These are The Access Committee and the Transport Working Group. Both committees have been meeting regularly for some years to discuss access and transport related issues, and their works are closely linked to the purpose of the PAMP. The initial Draft of this document was presented to these committees for review prior to consideration by Council.

The Draft PAMP document was exhibited for a period of 28 days during which time general submissions were received. Following consideration of these submissions, the current plan was adoption by Council at their Ordinary Meeting of February 16, 2009 (resolution number 160209/21).

#### **6 PAMP ROUTES**

A key benefit of the PAMP is to provide a prioritised route network that can help prioritise specific projects and needs, and provide a tool to assist to focus limited resources in critical areas. PAMP routes should:

- Provide links between main attractors and generators
- Improve existing pedestrian hazards locations
- Formalise existing pedestrian links
- Create new off-road facilities

#### 6.1 Route Selection

To produce this PAMP, the PAMP team needed to clearly identify a continuos and comprehensive, integrated pedestrian network keeping in mind the objectives of the PAMP. Routes have been selected based on a review of the existing network and future development areas. A high emphasis was given to providing better connectivity of the existing network, as well as providing extensions to service the most significant pedestrian generators such as schools and business districts.

In Kyogle the shared cycleway/footpath network has been identified for significant extensions to provide for an improved level of service to those seeking to utilise the path network for recreation and health and well being. The future rural residential areas have also been important factors in determining routes to provide connectivity of these communities to their nearby villages wherever practical.

#### 6.2 Route Prioritisation Methodology

The road network and built environment must cater to the needs of all pedestrians including older persons, pedestrians with mobility and vision impairments, residents, school children, tourists and recreational pedestrians.

A route prioritisation methodology was developed within the pedestrian network to identify High, Medium and Low priority routes. The hierarchy may vary along the routes according to usage patterns and other factors. These priorities were established by the PAMP team based on community input, key pedestrian routes and usage patterns. Due to the size and nature of the path networks in Kyogle and the villages, it was not considered necessary to define specific parameters or criteria for prioritisation of the PAMP routes.

In prioritising the routes a number of factors were considered such as;

- Pedestrian concentration
- Access to public transport
- Safe routes to schools
- Recreational usage
- Number of attractors/generators
- Land use types
- Proximity to attractors/generators
- Future development
- Street hierarchy

- Identified hazardous areas
- Identified pedestrian crashes/incidents
- Demonstrated use of informal paths
- Addition or connection to existing network
- Pedestrian route hierarchy relativities

#### 7 AUDITS

On-foot field audits are essential to determine the type and scale of work required along designated pedestrian routes. Generally audits will be undertaken by a PAMP team member who has training and experience in road safety auditing, or in design for access and mobility. Other detailed inspection work may be carried out by other persons using a set framework and reporting format developed by the PAMP team or technical services division.

#### 7.1 Route Audit Process

Council undertook an extensive detailed inspection and audit of its existing footpath network in 1999/2000. The results of this audit were used to prepare a Footpaths Repairs Priority Report. This report has been used since as the basis for prioritising expenditure on replacement and repairs to the existing footpath network. In 2002 a further audit was undertaken of the various access provisions to Council facilities and pedestrian provisions. This information was compiled in Kyogle Council Mobility Access – Management and Implementation Plan 2005. Again this report has been used to assist in the prioritisation of expenditure on the footpath network and Council facilities.

In the preparation of this PAMP, the proposed routes were audited by PAMP team members to verify requirements, identify project requirements, and to validate route priorities and alignments.

#### 7.2 Cost Estimate for Typical Items

Cost estimates and unit rates for typical work items used in the PAMP projects are as follows:

| ITEM                                 | COST    |
|--------------------------------------|---------|
| Bus Shelter supply and install       | \$8,000 |
| Footpath new construction /sq.m      | \$90    |
| Footpath reconstruct exist. / sq.m   | \$110   |
| Kerb Ramp construct new              | \$900   |
| Kerb Ramp modify existing            | \$1,100 |
| Kerb & Gutter new /lin.m.            | \$90    |
| Pedestrian blister                   | \$9,000 |
| Pedestrian crossing markings & signs | \$3,000 |
| Pedestrian refuge                    | \$6,000 |
| Street seating supply & install      | \$2,000 |

Table 3: Typical Cost Estimates and Unit Rates

# 7.3 Works Prioritisation Methodology

The following criteria have been adopted for prioritising the identified works program:

| Category          | Criteria                      | Performance condition                     | Score |
|-------------------|-------------------------------|---|-------|
| Land Use          | Number of attractors /        | More than 5                               | 10    |
|                   | generators                    | • 3-5                                     | 8     |
|                   |                               | • 1 – 2                                   | 5     |
|                   |                               | • 0                                       | 0     |
|                   | Land use type (of main        | Schools                                   | 10    |
|                   | generator)                    | Commercial / retail                       | 8     |
|                   |                               | Residential/recreational                  | 5     |
|                   |                               | Other                                     | 0     |
|                   | Proximity to Generators /     | <ul> <li>Less than 250m</li> </ul>        | 10    |
|                   | attractors                    | • 250 – 500m                              | 8     |
|                   |                               | • 500 – 1000m                             | 5     |
|                   |                               | Greater than 1000m                        | 0     |
|                   | Future development with       | High                                      | 5     |
|                   | attractors / generators       | Medium                                    | 3     |
|                   |                               | • Low                                     | 1     |
| Traffic Impact    | Road hierarchy                | State Road                                | 15    |
|                   |                               | Regional road                             | 10    |
|                   |                               | Local road                                | 8     |
|                   |                               | Special use                               | 5     |
|                   |                               | other                                     | 0     |
| Safety            | Identified hazardous area     | High                                      | 10    |
|                   |                               | Medium                                    | 8     |
|                   |                               | • Low                                     | 5     |
|                   |                               | • none                                    | 0     |
|                   | Identified pedestrian crashes | <ul> <li>More than 3 per year</li> </ul>  | 15    |
|                   | (police record or local       | 3 per year                                | 10    |
|                   | knowledge) average over 3     | 2 per year                                | 8     |
|                   | years                         | 1 per year                                | 5     |
|                   |                               | Nil reported                              | 0     |
| Facility benefits | Demonstrated usage            | High                                      | 10    |
|                   |                               | Medium                                    | 8     |
|                   |                               | • Low                                     | 5     |
|                   |                               | No information                            | 0     |
| Continuity of     | Addition to existing facility | <ul> <li>Link up footpath</li> </ul>      | 10    |
| routes            |                               | <ul> <li>Extension of footpath</li> </ul> | 8     |
|                   |                               | <ul> <li>Add to facilities</li> </ul>     | 5     |
|                   |                               | other                                     | 0     |
| Priority          | Pedestrian route hierarchy    | High                                      | 5     |
|                   |                               | Medium                                    | 3     |
|                   |                               | • Low                                     | 1     |
| Pi                | roject Priority               | Total Score                               |       |
|                   | High                          | 70 to 100                                 |       |
|                   | Medium                        | 55 to 69                                  |       |
|                   | Low                           | 0 to 54                                   |       |

Table 4: PAMP Works Program Prioritisation Methodology

# 7.4 Physical Works Schedules

# **7.4.1 Kyogle**

| ID   | Location                                     | Description  | Cost      | Priority |
|------|--|--|-----------|----------|
| KY01 | Summerland Way at Geneva St NE cnr.          | Construct pedestrian blister incorporating one kerb ramp   | \$9,900   | H        |
| KY02 | Summerland Way at Geneva St NW cnr           | Construct pedestrian blister incorporating two kerb ramps  | \$10,800  | Н        |
| KY03 | Geneva St. East<br>Summerland way            | Pedestrian crossing  | \$3,000   | M        |
| KY04 | Summerland way<br>opp National<br>Bank       | Construct pedestrian blister incorporating kerb ramp (Note: Part Main Street Redevelopment Phase 1)      | \$9,900   | Н        |
| KY05 | Summerland Way<br>at Stratheden St<br>NE cnr | Construct pedestrian blister incorporating two kerb ramps (Note: Part Main Street Redevelopment Phase 1) | \$10,800  | Н        |
| KY06 | Summerland Way<br>at Stratheden St<br>SE cnr | Construct pedestrian blister incorporating two kerb ramps (Note: Part Main Street Redevelopment Phase 1) | \$10,800  | Н        |
| KY07 | Stratheden St.<br>East Summerland<br>Way     | Pedestrian crossing  | \$3,000   | Н        |
| KY08 | Summerland Way                               | Pedestrian crossing incorporating pedestrian refuge and barrier at town clock                            | \$9,000   | Н        |
| KY09 | Ettrick St                                   | New footpath 2m wide SES to High school via bus bay (260m)   | \$46,800  | M        |
| KY10 | Kyogle Road                                  | Pedestrian refuge at preschool   | \$6,000   | М        |
| KY11 | Kyogle Court                                 | Replace pedestrian pathway 1.2m wide from Summerland Way (120m)  | \$15,800  | L        |
| KY12 | Ettrick Street                               | New footpath Geneva St 1.2m wide to No 65 (156m)   | \$16,848  | L        |
| KY13 | Wyangarie St                                 | New footpath 1.2m wide Bloore St to Ettrick St (60m)   | \$6,500   | M        |
| KY14 | Groom Street                                 | Extend footpath 1.2 wide Roseberry St to Rous St (primary school) (120m)                                 | \$13,000  | Н        |
| KY15 | Rous Street                                  | New footpath 1.2 wide and k & G<br>Roseberry St to school frontage<br>(80m)                              | \$ 16,000 | M        |
| KY16 | Bloore Street                                | Pedestrian refuge opposite Stratheden St   | \$6,000   | М        |
| KY17 | Bloore Street                                | New footpath 1.2 wide on W side<br>Stratheden St to Plant St incl 3<br>kerb ramps (100m)                 | \$13,500  | M        |

| ID   | Location                | Description   | Cost      | Priority |
|------|-------------------------|---|-----------|----------|
| KY18 | Roseberry Street        | New footpath 1.2 wide on N side Groom St to Short St  | \$11,000  | М        |
| KY19 | Short Street            | Replace footpath 1.2 wide from Roseberry St to Preschool (100m)   | \$13,200  | L        |
| KY20 | Crockford lane          | Modify kerb ramps at Stratheden St intersection (4 ramps)   | \$4,500   | М        |
| KY21 | Anzac Drive             | New cycleway/pathway 2m wide<br>Walters St to VIC, under rail<br>viaduct – shared cycleway (310m)   | \$55,800  | M        |
| KY22 | Anzac Dve               | New cycleway/pathway 2m wide from Marwick St to Saville st 2m wide (110m)   | \$19,800  | M        |
| KY23 | Saville St              | New cycleway/pathway 2m wide from Anzac Dve to Dalys lane (830m)  | \$150,000 | M        |
| KY24 | Summerland Way          | New cycleway/pathway 2m wide from Showgrounds to Rugby League Grounds 2m wide (550m)  | \$99,000  | M        |
| KY25 | Highfield Road          | New footpath 1.2m wide N side No 29 to no 53 (305m), 2 kerb ramps and pedestrian refuge at No 50. S side No 50 to Kamala Ave (190m), 2 kerb ramps at Kamala Ave | \$59,000  | М        |
| KY26 | Golf Course<br>Estate   | New 2m wide cycleway/pathway<br>between Rec Ground and Caddie<br>Ave via golf course<br>(1550m)   | \$155,000 | П        |
| KY27 | Clarks / Daleys<br>lane | New cycleway/pathway (2m asphalt) 1160m long and pedestrian bridge 1.5m wide  | \$240,000 | L        |
| KY28 | Kamala Ave              | Supply & install bus shelter  | \$8,000   | М        |
| KY29 | Highfield Road          | Connect 1.2m wide path from No5 to Summerland Way path (30m)  | \$2,700   | М        |
| KY30 | Warrazambil<br>Street   | Two kerb ramps at Groom St intersection   | \$1,800   | L        |
| KY31 | Wyndham Street          | Two kerb ramps at Groom St intersection   | \$1,800   | L        |
| KY32 | Summerland way          | Extend 2m wide cycleway/pathway from Boorabee Street to Motel (230m)  | \$43,000  | M        |
| KY33 | Norledge Street         | New 2m wide cycleway/pathway<br>Saville Street to Pratt Street, then<br>to Anzac Drive (360m)   | \$64,800  | M        |
| KY34 | Saville Street          | Supply and install bus shelter  | \$8,000   | М        |
| KY35 | Summerland Way          | New 1.2m wide path fronting recreation reserve and apex park both sides of road (300m)  | \$32,400  | Н        |
| KY36 | Bloore Street           | New 1.2m wide footpath E side from Geneva St to existing path (62m)   | \$6,696   | M        |

| ID   | Location      | Description                                  | Cost        | Priority |
|------|---------------|--|-------------|----------|
| KY37 | Bloore Street | New 1.2m wide footpath E side                | \$14,256    | Н        |
|      |               | from existing path to Library pathway (132m) |             |          |
| KY38 | Bloore Street | Pedestrian refuge at cinema                  | \$6,000     | М        |
|      |               | Total Kyogle                                 | \$1,204,400 |          |

7.4.2 Wiangaree

| ID   | Location       | Description                     | Cost     | Priority |
|------|----------------|---------------------------------|----------|----------|
| WI01 | Worendo St     | Extend footpath 1,.2m wide from | \$3,800  | М        |
|      |                | Shop to No 70 (32m) and provide |          |          |
|      |                | kerb ramp                       |          |          |
| WI02 | Worendo Street | Extend footpath 1.2m wide from  | \$11,340 | M        |
|      |                | hall to Queebun Street (105m)   |          |          |
| WI03 | Kunghur Street | New path 1.2m wide from school  | \$2,700  | M        |
|      |                | crossing Summerland way to Rail |          |          |
|      |                | viaduct (30m)                   |          |          |
| WI04 | Kunghur Street | New path 1.2m wide from Rail    | \$23,500 | М        |
|      |                | viaduct to school (260m)        |          |          |
| WI05 | Summerland way | New path Queebun St to Gleeson  | \$12,000 | М        |
|      |                | St (130m)                       |          |          |
|      |                | Total Wiangaree                 | \$53,340 |          |

7.4.3 Woodenbong

| ID   | Location             | Description   | Cost     | Priority |
|------|----------------------|---|----------|----------|
| WO01 | Unumgar Street       | New path 1.2m wide S side,<br>MacPherson St to Macpherson<br>lane including 2 kerb ramps at<br>MacPherson St and one at<br>MacPherson Lane. (60m) | \$8,100  | М        |
| WO02 | Unumgar Street       | New path 1.2m wide S side,<br>Lindsay St to existing including 2<br>kerb ramps at Lindsay St (30m)  | \$4,500  | Н        |
| WO03 | Unumgar Street       | At school crossing, pedestrian blisters and refuge  | \$24,000 | Н        |
| WO04 | Lindsay Street       | New path 1.2m wide W side, Unumgar St to existing (55m)   | \$5,000  | Н        |
| WO05 | Lindsay Street       | New path 1.2m wide W side, Existing to Dalmorton Street (87m)   | \$9,400  | М        |
| WO06 | Lindsay Street       | New path 1.2m wide W side, Dalmorton St to preschool (137m)   | \$14,800 | М        |
| WO07 | Unumgar street       | Two new kerb ramps at existing concrete footpath at Roseberry St intersection NE and SW corners.  | \$1,800  | М        |
| WO08 | Unumgar Street       | N side. Two new kerb ramps at Lindsay St intersection   | \$1,800  | L        |
| WO09 | MacPherson<br>Street | Modify existing kerb crossings at Dalmorton St intersection   | \$2,200  | Н        |
| WO10 | MacPherson<br>Street | New path 1.2m wide W side No 24 to No 36 and mid block crossing of MacPherson St (150m)   | \$13,500 | M        |

| ID   | Location       | Description                       | Cost      | Priority |
|------|----------------|-----------------------------------|-----------|----------|
| WO11 | Glennie Street | New 1.2m wide path from           | \$9,720   | L        |
|      |                | MacPherson St to Boomi Creek      |           |          |
|      |                | Road (90m)                        |           |          |
| WO12 | Unumgar Street | Extend existing path at 1.2m wide | \$9,720   | М        |
|      | _              | to connect to church path (90m)   |           |          |
|      |                | Total Woodenbong                  | \$104,540 |          |

# 7.4.4 Old Bonalbo

| ID                | Location      | Description   | Cost    | Priority |
|-------------------|---------------|---|---------|----------|
| OB01              | Duck Creek Rd | Extend footpath at 1.2m wide to Clarence Way intersection, construct gutter crossings at intersection, and provide street seating near Post | \$3,600 | M        |
|                   |               | Office/General Store  |         |          |
| Total Old Bonalbo |               |   | \$3,600 |          |

# 7.4.5 Bonalbo

| ID   | Location          | Description   | Cost     | Priority |
|------|-------------------|---|----------|----------|
| BO01 | Sandilands Street | Modify path and kerb ramps at Koreelah St intersection (4 of)   | \$4,400  | M        |
| BO02 | Sandilands St     | Modify path and kerb ramps at Peacock St intersection (4 of)  | \$4,400  | M        |
| BO03 | Koreelah Street   | Modify paths and kerb ramps at post Office Lane intersection (4 of)   | \$4,400  | M        |
| BO04 | Peacock Street    | Modify paths and kerb ramps at post Office Lne intersection (4 of)  | \$4,400  | M        |
| BO05 | Woodenbong Rd     | Extend path 1.2m wide E side to Pedestrian crossing at Koreelah St cut 2 new kerb ramps at crossing                                   | \$3,200  | Ι        |
| BO06 | Woodenbong Rd     | Construct path 1.2m wide S side<br>Peacock St to Yabbra St with<br>pedestrian refuge in Woodenbong<br>Rd 50m path, 2 ramps and refuge | \$12,300 | Ι        |
| BO07 | Woodenbong Road   | N side, extend path 1.2m wide from No 22 to Clarence Street   | \$7,200  | M        |
| BO08 | Woodenbong Road   | N side, extend path 1.2m wide<br>Clarence St to Council depot and<br>cross road to pool entrance                                      | \$23,600 | M        |
| BO09 | Woodenbong Rd     | S side, new footpath Koreelah St<br>to second footbridge Dyraaba st<br>(170m)   | \$15,500 | L        |
| BO10 | Woodenbong Rd     | Extend hospital lane path to Woodenbong Rd and join to path on S side. At Bonalbo St  | \$3,000  | L        |
| BO11 | Woodenbong Road   | New path 1.2m wide from existing path on Peacock Street through to pre-school and recreation ground. (90m).  Total Bonalbo            | \$9,720  | M        |
|      |                   | \$92,120  |          |          |

#### 7.4.6 Tabulam

| ID   | Location        | Description                          | Cost     | Priority |
|------|-----------------|--------------------------------------|----------|----------|
| TA01 | Clarence Street | E side Extend footpath 1.2m wide     | \$5,400  | M        |
|      |                 | from school frontage to Bruxner      |          |          |
|      |                 | Highway (60m)                        |          |          |
| TA02 | Bruxner Highway | Pedestrian blisters and refuge       | \$24,000 | Н        |
|      |                 | opposite Clarence St                 |          |          |
| TA03 | Clarence Street | E side. Extend footpath 1.2m wide to | \$3,000  | M        |
|      |                 | Court street (20m) and provide 2     |          |          |
|      |                 | kerb ramps at Court St               |          |          |
| TA04 | Court Street    | Two new kerb ramps at Barnes St      | \$1,800  | L        |
| TA05 | Bruxner Highway | New path at 1.2m wide from Bruxner   | \$28,900 | L        |
|      |                 | Highway to 1599 Tabulam Road         |          |          |
|      |                 | (268m)                               |          |          |
|      |                 | Total Tabulam                        | \$63,100 |          |

# 7.4.7 Mallanganee

| ID                | Location             | Description  | Cost     | Priority |
|-------------------|----------------------|--|----------|----------|
| MA01              | Yabbra Street        | New 1.2m wide path from Tooloom St to Sandilands Street (130m)         | \$14,100 | М        |
| MA02              | Sandilands<br>Street | New 1.2m wide path from Yabbra St to Willock St (124m)                 | \$13,400 | М        |
| MA03              | Tooloom Street       | New 1.2m wide path fronting school (110m)                              | \$11,900 | М        |
| MA04              | Sandilands<br>Street | New 1.2m path from existing path fronting hotel to entrance oval (49m) | \$5,300  | L        |
| MA05              | Sandilands<br>Street | New 1.2m wide path Pine Street to Strains Road (100m)                  | \$10,900 | L        |
| Total Mallanganee |                      |  | \$55,600 |          |

# 7.4.8 Mummulgum

| ID              | Location           | Description   | Cost     | Priority |
|-----------------|--------------------|---|----------|----------|
| MU01            | Bruxner<br>Highway | New path 1.2m wide from school bus bay to shop (160m)         | \$17,300 | M        |
| MU02            | Bruxner<br>Highway | Pedestrian refuge west of intersection with Bingeebeebra Road | \$6,000  | Η        |
| Total Mummulgum |                    |   | \$23,300 |          |

#### 8 FUNDING SOURCES AND IMPLEMENTATION OF PAMP

Generally funding for implementation of the projects identified in this PAMP come from Council and the RTA. The works identified in this PAMP total in excess of \$1.5M. This is a very significant amount, and it is important to recognise that Council will not be able to fund these works given its current level of expenditure on pedestrian facilities. In addition it is also important to recognise that there is a high level of competing priorities across all of Councils functions and only a limited level of funding available.

Councils budget for 2008/2009 contains a total funding allowance of \$20,000 for the provision of new footpaths and replacement of existing paths. The RTA have advised that they will provide additional funding towards PAMP projects of up to \$25,000, if matched by Council. At this level of expenditure, the PAMP projects would take around 30 years to implement.

The RTA Policy on Implementation Funding for PAMP works is State Roads projects 100% RTA for road crossing facilities and kerb ramps only, and Regional and Local Roads 50/50 RTA and Council.

One of the major drivers for the preparation of the PAMP is to show other possible funding providers that Council has a clear, well documented plan for its pedestrian network. It is hoped that this will place Council in a better position to access funds and grant monies from other bodies to assist in implementing the PAMP projects. Other funding sources include:

- Developers
- Local clubs and community groups
- Department of Aging and Disability, NSW
- Department of Education and Training, NSW
- Department of Health, NSW
- Department of Housing, NSW
- Department of Sport and Recreation, NSW
- Department of State and Regional Development, NSW
- Department of Transport, NSW

Council is also able to require a contribution to new footpath from the adjoining land owners under the Local Government Act. Councils fees and charges for 2008/2009 contain the following charges for contributions to new footpaving;

- Where works are programmed in Councils Management Plan (charge based on land frontage to new footpaving) – 50% of actual cost (max \$70 per metre) + GST
- Where works are requested by adjoining land owners and not programmed in Councils Management Plan (charge based on land frontage to new footpaving) – 100% of actual cost (max \$140 per metre) + GST

The works identified in this PAMP are expected to be subject to developer contributions in accordance with Section 94 of the Environmental Planning and Assessment Act. A new Section 94 Contributions Plan is being prepared concurrently to this PAMP. The proposed PAMP projects are expected to cater for the projected 2031 population.

#### 9 MONITORING PROGRAM

Initial monitoring of this plan will consist of management of works within the current budget projections, and input to future budget considerations. Works as completed will be recorded and incoming comments will be recorded to gauge effectiveness. It is proposed to review the plan on a five year basis. This will allow the document to be reviewed against works completed and community expectations. The five year cycle will also allow for a review of the objectives to ensure they remain relevant.

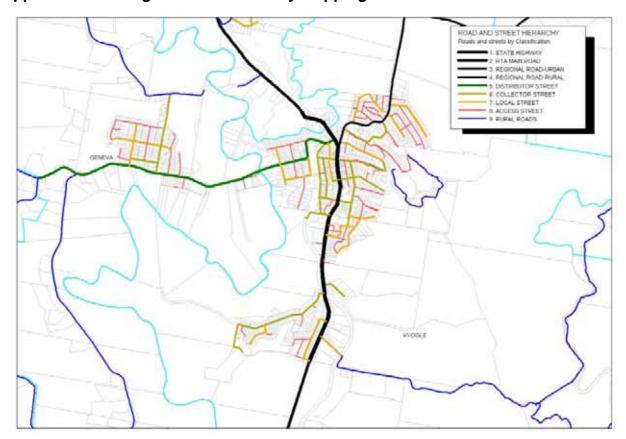
#### 10 RECOMMENDATION FOR FUTURE STUDIES

At this point it is not envisioned that further studies will be required outside the review of this PAMP at the nominated interval. Further detailed investigation and design will be required for many projects and there will be a need to ensure these works are completed to ensure delays to programmed works are minimal when funding is made available.

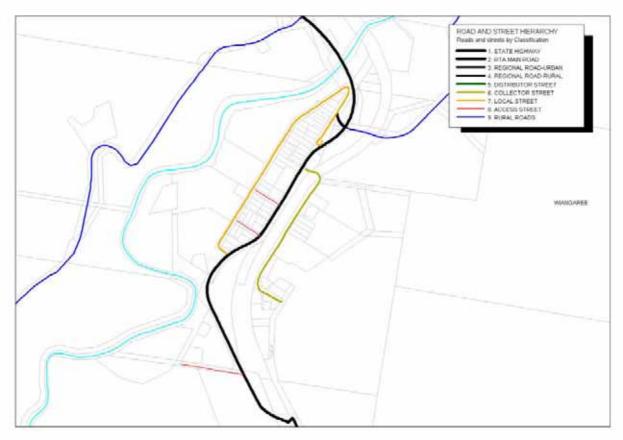
#### 11 CONCLUSIONS AND RECOMMENDATIONS

This PAMP will be a valuable tool to assist in providing enhanced access for pedestrians, cyclists and the mobility and/or vision impaired. The implementation of the nominated improvements to the pedestrian facilities in Kyogle and the villages will also provide more opportunity to the aged and a safer pedestrian environment for school children. It is recommended that Council provide a budget allowance for the implementation of the PAMP projects which reflects the community's expectations and priorities, and to allow the projects to be implemented in the fastest possible timeframe. To assist in the funding of the works, it is also recommended that Council pursue all possible funding from other sources as it becomes available.

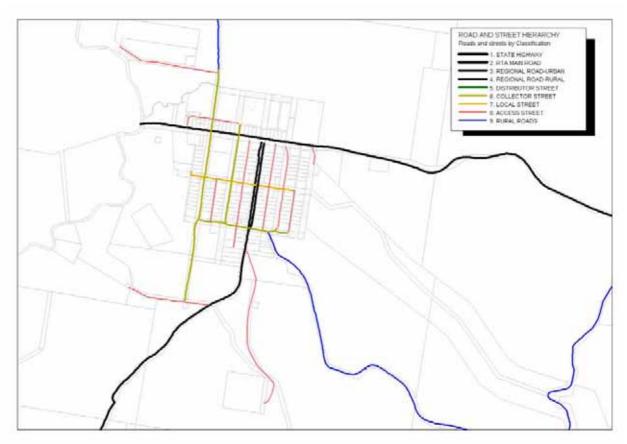
Appendix A - Village Streets Hierarchy Mapping



# 1. Kyogle



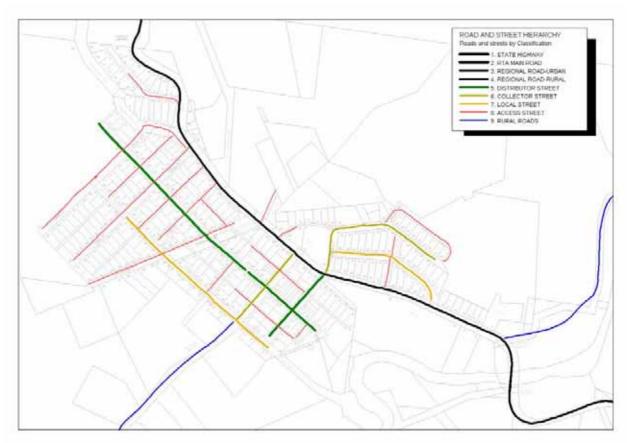
2. Wiangaree



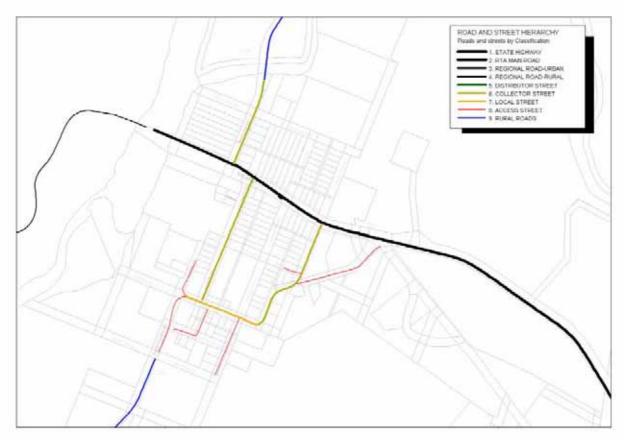
# 3. Woodenbong



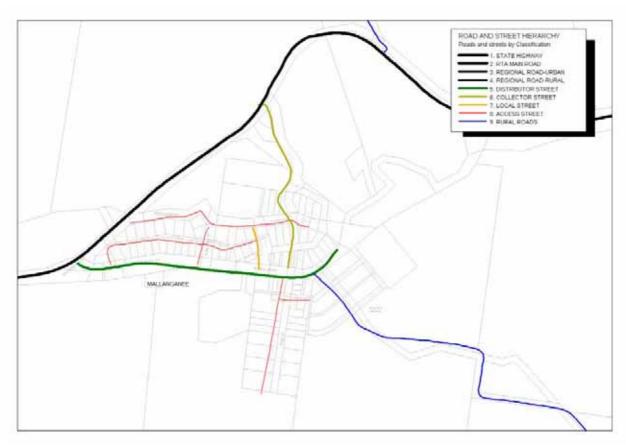
4. Old Bonalbo



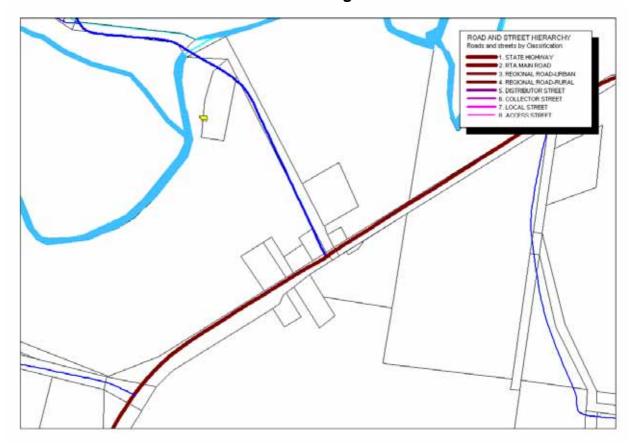
# 5. Bonalbo



6. Tabulam



# 7. Mallanganee



8. Mummulgum

# Appendix B – PAMP Routes

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## **Appendix C – Kyogle Main Street Re-Development Plans**

Kyogle's main street forms part of the Summerland Way. The area contains the main business district and is also the main thoroughfare between Casino and the Queensland Border. The Summerland Way is the alternate route to the Pacific Highway for heavy vehicles between Grafton and Queensland. In considering the re-development for the area, the Community and Council were required to assess the impact of existing traffic flows on the area.

The master plan illustrates design concepts to enhance the attractiveness and character of the township. The plan was developed in consultation with Council and representatives from the Kyogle community and has provided a framework for the design and construction of the new kerb and footpath areas, and associated development of the main street.

The master plan creates a more interesting and pedestrian friendly environment, which will attract visitors and ultimately encourage growth and business in Kyogle.

Features of the Master Plan include:

- maximisation of car parking spaces utilising 60 degree angled parking
- · providing disabled access and parking,
- creating a pedestrian friendly environment,
- reconfiguring the roadway including the addition of feature roundabouts which cater for large vehicles,
- upgrading the town clock,
- providing 'alfresco' outdoor dining areas,
- feature garden areas.
- suitable pavement materials and
- street furniture unique to Kyogle. Key furniture elements include bollards, seating and bins, which will complement the 'rainforest' theme in their design.

Vegetation selected for the beautification of the main street include mostly native rainforest species, with the exception of a few hardy native-like species which are ideally suited to climate conditions in Kyogle.

The colours chosen to compliment the rainforest theme are Dulux Teal, Tuscany Red and Pottery. These colours vary slightly in hue from the traditional heritage colours and represent the earthy tones of the soil and blue/green tones of the rainforest and mountains.

A copy of the Master Layout Plans is included on the next page.



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| Appendix D – Works Projects Scoring Matrix |  |
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| Droion4     |            | Land Use | Use       |        | Traffia   | Š       | Safety    | Facility |            |          | Totol |         |
|-------------|------------|----------|-----------|--------|-----------|---------|-----------|----------|------------|----------|-------|---------|
| <u>.</u>    | Attractors | Туре     | Proximity | Future | hierarchy | Hazards | Accidents | benefits | Continuity | Priority | score | Ranking |
| KY01        | 10         | 8        | 10        | 1      | 15        | 8       | 0         | 8        | 5          | 2        | 02    | н       |
| KY02        | 10         | 8        | 10        | 1      | 15        | 10      | 0         | 10       | 5          | 2        | 74    | I       |
| KY03        | 10         | 8        | 10        | 3      | 8         | ∞       | 0         | 8        | 2          | 5        | 65    | Σ       |
| <b>KY04</b> | 10         | 8        | 10        | 2      | 15        | 10      | 0         | 10       | 2          | 2        | 82    | Н       |
| KY05        | 10         | 8        | 10        | 3      | 15        | 10      | 0         | 10       | 2          | 2        | 92    | Н       |
| KY06        | 10         | 8        | 10        | 3      | 15        | ∞       | 0         | 10       | 2          | 5        | 74    | I       |
| KY07        | 10         | 8        | 10        | 3      | 8         | 80      | 0         | 10       | 10         | 5        | 72    | I       |
| KY08        | 10         | 8        | 10        | 3      | 15        | 10      | 0         | 10       | 2          | 5        | 92    | I       |
| KY09        | 2          | 10       | 10        | 1      | 8         | 8       | 0         | 8        | 10         | 3        | 63    | W       |
| KY10        | 2          | 10       | 10        | 3      | 10        | 10      | 0         | 8        | 5          | 1        | 62    | W       |
| KY11        | 2          | 6        | 10        | 3      | 0         | 10      | 0         | 2        | 0          | 1        | 43    | ٦       |
| KY12        | 8          | 2        | 10        | 3      | 8         | 2       | 0         | 2        | 9          | 1        | 90    | ٦       |
| KY13        | 8          | 8        | 10        | 1      | 8         | 2       | 0         | 2        | 10         | 3        | 89    | W       |
| KY14        | 2          | 10       | 10        | 1      | 8         | 2       | 0         | 8        | 8          | 3        | 89    | W       |
| KY15        | 2          | 10       | 10        | 3      | 8         | 8       | 0         | 10       | 2          | 3        | 62    | W       |
| KY16        | 8          | 8        | 10        | 3      | 8         | 80      | 0         | 8        | 8          | _        | 62    | Σ       |
| KY17        | 8          | 8        | 10        | 3      | 8         | 8       | 0         | 8        | 8          | 1        | 62    | W       |
| KY18        | 2          | 10       | 10        | 1      | 8         | 2       | 0         | 5        | 10         | 1        | 22    | W       |
| KY19        | 2          | 10       | 10        | 1      | 8         | 5       | 0         | 5        | 5          | 1        | 20    | 7       |
| KY20        | 8          | 8        | 10        | 3      | 8         | 8       | 0         | 8        | 2          | 2        | 63    | W       |
| KY21        | 2          | 8        | 8         | 3      | 8         | 8       | 0         | 2        | 10         | 3        | 89    | W       |
| KY22        | 8          | 2        | 8         | 3      | 8         | 8       | 0         | 8        | 10         | 3        | 61    | W       |
| KY23        | 10         | 2        | 10        | 2      | 8         | 5       | 0         | 2        | 8          | 3        | 69    | W       |
| KY24        | 2          | 8        | 10        | 3      | 15        | 8       | 0         | 8        | 8          | 3        | 89    | W       |
| KY25        | 10         | 2        | 8         | 3      | 8         | 8       | 0         | 8        | 8          | 1        | 69    | W       |
| <b>KY26</b> | 8          | 2        | 2         | 5      | 0         | 0       | 0         | 5        | 8          | 1        | 37    | 7       |
| KY27        | 10         | 2        | 2         | 2      | 8         | 2       | 0         | 0        | 8          | 3        | 49    | ٦       |
| KY28        | 8          | 2        | 10        | 3      | 8         | 8       | 0         | 8        | 2          | 1        | 99    | W       |
| KY29        | 10         | 2        | 8         | 3      | 8         | 8       | 0         | 8        | 10         | 1        | 61    | W       |
| KY30        | 10         | 2        | 10        | 1      | 8         | 2       | 0         | 5        | 5          | 3        | 52    | 7       |
| KY31        | 10         | 2        | 10        | 1      | 8         | 2       | 0         | 5        | 5          | 3        | 52    | ٦       |
| KY32        | 8          | 5        | 8         | 3      | 15        | 5       | 0         | 8        | 10         | 3        | 65    | Σ       |

| Project     | <u>-</u>   | Land | Land Use  |        | Traffic   | 2Se     | Safety    | Facility |            |          | Total |         |
|-------------|------------|------|-----------|--------|-----------|---------|-----------|----------|------------|----------|-------|---------|
| <u> </u>    | Attractors | Туре | Proximity | Future | hierarchy | Hazards | Accidents | benefits | Continuity | Priority | score | Ranking |
| KY33        | 2          | 5    | 10        | 3      | 8         | 5       | 0         | 8        | 10         | -        | 55    | Σ       |
| KY34        | 8          | 5    | 10        | 3      | 8         | 8       | 0         | 8        | 8          | က        | 61    | Σ       |
| KY35        | 10         | 2    | 10        | 8      | 15        | 8       | 0         | 8        | 10         | 3        | 72    | Ŧ       |
| KY36        | 10         | 8    | 10        | 3      | 8         | 9       | 0         | 10       | 10         | 3        | 67    | M       |
| KY37        | 10         | 8    | 10        | 3      | 8         | 8       | 0         | 10       | 10         | 3        | 70    | н       |
| KY38        | 10         | 8    | 10        | 8      | 8         | 8       | 0         | 10       | 5          | 3        | 65    | M       |
| WI01        | 2          | 8    | 10        | 8      | 8         | 9       | 0         | 8        | 8          | 3        | 28    | M       |
| WI02        | 8          | 8    | 10        | 1      | 12        | 2       | 0         | 8        | 8          | 1        | 64    | M       |
| WI03        | 2          | 10   | 8         | 3      | 8         | 8       | 0         | 8        | 10         | 3        | 63    | M       |
| WI04        | 2          | 10   | 10        | 1      | 8         | 8       | 0         | 8        | 8          | 3        | 61    | M       |
| WI05        | 8          | 5    | 8         | 1      | 15        | 8       | 0         | 5        | 8          | 1        | 59    | M       |
| WO01        | 8          | 8    | 10        | 8      | 10        | 9       | 0         | 2        | 10         | 2        | 64    | M       |
| WO02        | 8          | 10   | 10        | 3      | 10        | 9       | 0         | 10       | 10         | 2        | 71    | Н       |
| WO03        | 8          | 10   | 10        | 3      | 10        | 8       | 0         | 10       | 10         | 2        | 74    | Н       |
| <b>WO04</b> | 8          | 10   | 10        | 3      | 8         | 8       | 0         | 8        | 10         | 2        | 70    | Н       |
| <b>WO02</b> | 2          | 10   | 10        | 3      | 8         | 8       | 0         | 8        | 8          | 3        | 63    | M       |
| WO06        | 5          | 10   | 10        | 3      | 8         | 5       | 0         | 5        | 8          | 1        | 55    | Σ       |
| WO07        | 2          | 10   | 10        | 1      | 10        | 2       | 0         | 8        | 5          | 2        | 59    | 7       |
| WO08        | 5          | 10   | 10        | 1      | 10        | 5       | 0         | 5        | 5          | 3        | 54    | 7       |
| MO09        | 8          | 8    | 10        | 8      | 10        | 10      | 2         | 8        | 5          | 2        | 72    | Н       |
| WO10        | 8          | 8    | 10        | 1      | 10        | 8       | 0         | 8        | 8          | 2        | 66    | M       |
| W011        | 5          | 5    | 10        | 3      | 8         | 5       | 0         | 5        | 10         | 1        | 52    | 7       |
| W012        | 8          | 8    | 10        | 1      | 10        | 5       | 0         | 8        | 8          | 1        | 59    | Σ       |
| <b>OB01</b> | 5          | 8    | 10        | 3      | 10        | 8       | 0         | 5        | 5          | 3        | 57    | Σ       |
| B001        | 10         | 8    | 10        | 8      | 8         | 8       | 0         | 8        | 5          | 2        | 65    | M       |
| BO02        | 10         | 8    | 10        | 3      | 8         | 8       | 0         | 8        | 5          | 2        | 65    | M       |
| BO03        | 10         | 8    | 10        | 3      | 8         | 8       | 0         | 8        | 5          | 3        | 63    | M       |
| BO04        | 10         | 8    | 10        | 3      | 8         | 8       | 0         | 8        | 5          | 3        | 63    | Σ       |
| BO05        | 8          | 10   | 10        | 3      | 10        | 8       | 0         | 8        | 10         | 5        | 72    | Ŧ       |
| BO06        | 8          | 10   | 10        | 3      | 10        | 8       | 0         | 8        | 10         | 5        | 72    | Ŧ       |
| BO07        | 8          | 8    | 10        | 3      | 10        | 8       | 0         | 8        | 10         | 3        | 89    | Σ       |
| BO08        | 8          | 8    | 10        | 3      | 10        | 8       | 0         | 8        | 10         | 1        | 99    | Σ       |
|             |            |      |           |        |           |         |           |          |            |          |       |         |

|             |            | Land | Land Use  |        | 7:33°1    | Sa      | Safety    |                      |            |          |       |         |
|-------------|------------|------|-----------|--------|-----------|---------|-----------|----------------------|------------|----------|-------|---------|
|             | Attractors | Type | Proximity | Future | hierarchy | Hazards | Accidents | racility<br>benefits | Continuity | Priority | score | Ranking |
| BO09        | 8          | 5    | 8         | 3      | 10        | 2       | 0         | 2                    | 8          | -        | 53    | _       |
| BO10        | 2          | 6    | 9         | 1      | 10        | 2       | 0         | 9                    | 10         | 1        | 51    | ٦       |
| B011        | 2          | 10   | 10        | 1      | 10        | 2       | 0         | 8                    | 8          | 1        | 28    | W       |
| TA01        | 2          | 10   | 10        | 3      | 8         | 8       | 0         | 8                    | 8          | 3        | 63    | ¥       |
| TA02        | 8          | 10   | 10        | 3      | 15        | 10      | 0         | 8                    | 9          | 3        | 72    | I       |
| TA03        | 2          | 8    | 10        | 1      | 8         | 2       | 0         | 8                    | 10         | 3        | 28    | Z       |
| TA04        | 2          | 8    | 10        | 1      | 8         | 2       | 0         | 8                    | 9          | 3        | 53    | ٦       |
| TA05        | 2          | 2    | 8         | 1      | 8         | 2       | 0         | 9                    | 8          | 1        | 46    | ٦       |
| MA01        | 2          | 10   | 10        | 3      | 8         | 2       | 0         | 8                    | 8          | 3        | 09    | Z       |
| MA02        | 8          | 8    | 10        | 1      | 8         | 2       | 0         | 8                    | 8          | 3        | 29    | Z       |
| MA03        | 2          | 10   | 10        | 1      | 8         | 2       | 0         | 8                    | 8          | 1        | 26    | ¥       |
| MA04        | 2          | 8    | 10        | 1      | 8         | 2       | 0         | 9                    | 8          | 1        | 51    | ٦       |
| MA05        | 5          | 2    | 10        | 3      | 8         | 5       | 0         | 0                    | 10         | 1        | 47    | ٦       |
| MU01        | 8          | 10   | 10        | 3      | 15        | 8       | 0         | 8                    | 9          | 3        | 20    | Н       |
| <b>MU02</b> | 2          | 10   | 10        | 3      | 15        | 10      | 0         | 9                    | 9          | 3        | 99    | W       |

## Appendix E – Works Program Priorities

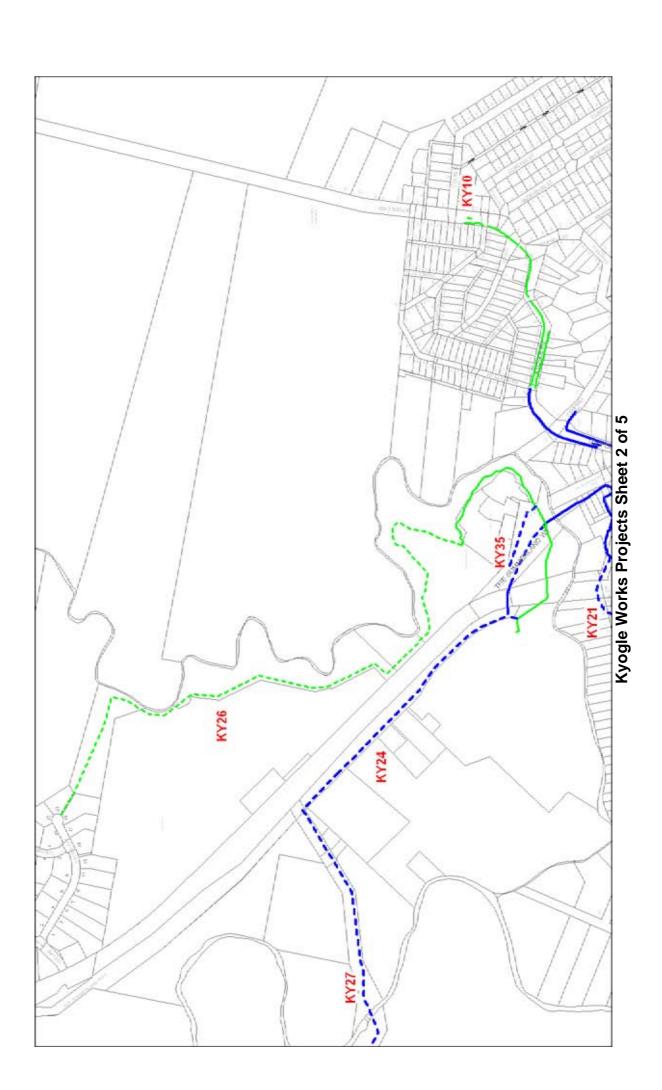
| ID   | Cost     | Priority | Works Program<br>Order |
|------|----------|----------|------------------------|
| KY04 | \$9,900  | Н        | 1 (2007/08)            |
| KY05 | \$10,800 | Н        | 2<br>(2008/09)         |
| KY06 | \$10,800 | Н        | 3<br>(2008/09)         |
| KY03 | \$3,000  | М        | 4                      |
| KY07 | \$3,000  | Н        | 5<br>(2008/09)         |
| WO09 | \$2,200  | Н        | 6<br>(2008/09)         |
| OB01 | \$3,600  | М        | 7                      |
| BO05 | \$3,200  | Н        | 8<br>(2008/09)         |
| BO01 | \$4,400  | М        | 9<br>(2008/09)         |
| BO02 | \$4,400  | М        | 10<br>(2008/09)        |
| TA03 | \$3,000  | М        | 11                     |
| TA04 | \$1,800  | L        | 12                     |
| BO03 | \$4,400  | М        | 13<br>(2008/09)        |
| BO04 | \$4,400  | М        | 14<br>(2008/09)        |
| BO06 | \$12,300 | Н        | 15                     |
| WO08 | \$1,800  | L        | 16                     |
| WO07 | \$1,800  | М        | 17                     |
| KY01 | \$9,900  | Н        | 18<br>(2008/09)        |
| KY02 | \$10,800 | Н        | 19                     |
| KY08 | \$9,000  | Н        | 20                     |
| KY30 | \$1,800  | L        | 21                     |
| KY31 | \$1,800  | L        | 22                     |
| KY10 | \$6,000  | М        | 23                     |
| KY16 | \$6,000  | М        | 24                     |
| KY20 | \$4,500  | М        | 25                     |
| KY29 | \$2,700  | М        | 26                     |
| WI01 | \$3,800  | М        | 27                     |
| KY13 | \$6,500  | М        | 28                     |
| KY38 | \$6,000  | М        | 29                     |
| KY09 | \$46,800 | М        | 30                     |
| KY37 | \$14,256 | Н        | 31                     |
| KY35 | \$32,400 | Н        | 32                     |
| WO02 | \$4,500  | Н        | 33                     |
| WO03 | \$24,000 | Н        | 34                     |

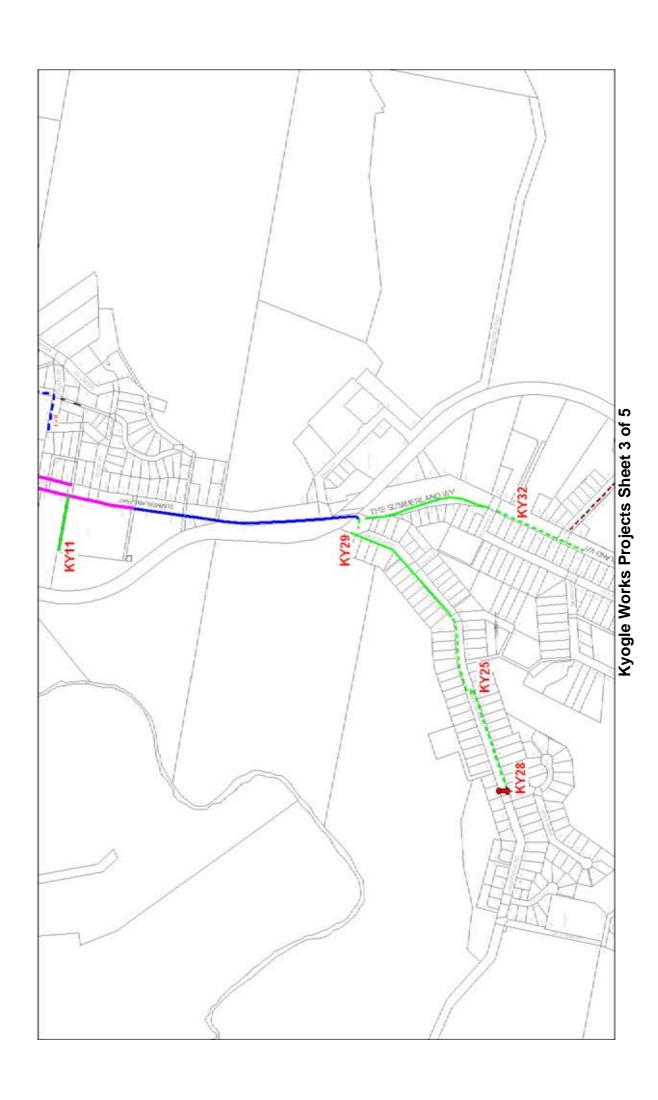
| ID   | Cost      | Priority | Works Program<br>Order |
|------|-----------|----------|------------------------|
| WO04 | \$5,000   | Н        | 35                     |
| WO01 | \$8,100   | M        | 36                     |
| TA02 | \$24,000  | Н        | 37                     |
| MU02 | \$6,000   | Н        | 38                     |
| TA01 | \$5,400   | М        | 39                     |
| KY14 | \$13,000  | Н        | 40                     |
| KY22 | \$19,800  | М        | 41                     |
| KY15 | \$16,000  | М        | 42                     |
| KY24 | \$99,000  | М        | 43                     |
| WI02 | \$11,340  | М        | 44                     |
| WI03 | \$2,700   | М        | 45                     |
| WI04 | \$23,500  | M        | 46                     |
| WO05 | \$9,400   | M        | 47                     |
| BO09 | \$15,500  | L        | 48                     |
| BO10 | \$3,000   | L        | 49                     |
| BO07 | \$7,200   | M        | 50                     |
| MA01 | \$14,100  | M        | 51                     |
| MU01 | \$17,300  | M        | 52                     |
| KY36 | \$6,696   | M        | 53                     |
| WO10 | \$13,500  | М        | 54                     |
| MA02 | \$13,400  | М        | 55                     |
| KY21 | \$55,800  | M        | 56                     |
| BO08 | \$23,600  | М        | 57                     |
| KY18 | \$11,000  | М        | 58                     |
| KY28 | \$8,000   | М        | 59                     |
| KY25 | \$59,000  | М        | 60                     |
| KY12 | \$16,848  | L        | 61                     |
| KY17 | \$13,500  | М        | 62                     |
| KY32 | \$43,000  | M        | 63                     |
| KY34 | \$8,000   | M        | 64                     |
| KY19 | \$13,200  | L        | 65                     |
| KY11 | \$15,800  | L        | 66                     |
| WO06 | \$14,800  | M        | 67                     |
| MA03 | \$11,900  | М        | 68                     |
| WI05 | \$12,000  | M        | 69                     |
| WO12 | \$9,720   | M        | 70                     |
| BO11 | \$9,720   | М        | 71                     |
| MA04 | \$5,300   | L        | 72                     |
| KY33 | \$64,800  | М        | 73                     |
| WO11 | \$9,720   | L        | 74                     |
| TA05 | \$28,900  | L        | 75                     |
| MA05 | \$10,900  | L        | 76                     |
| KY26 | \$155,000 | L        | 77                     |
| KY23 | \$150,000 | М        | 78                     |
| KY27 | \$240,000 | L        | 79                     |

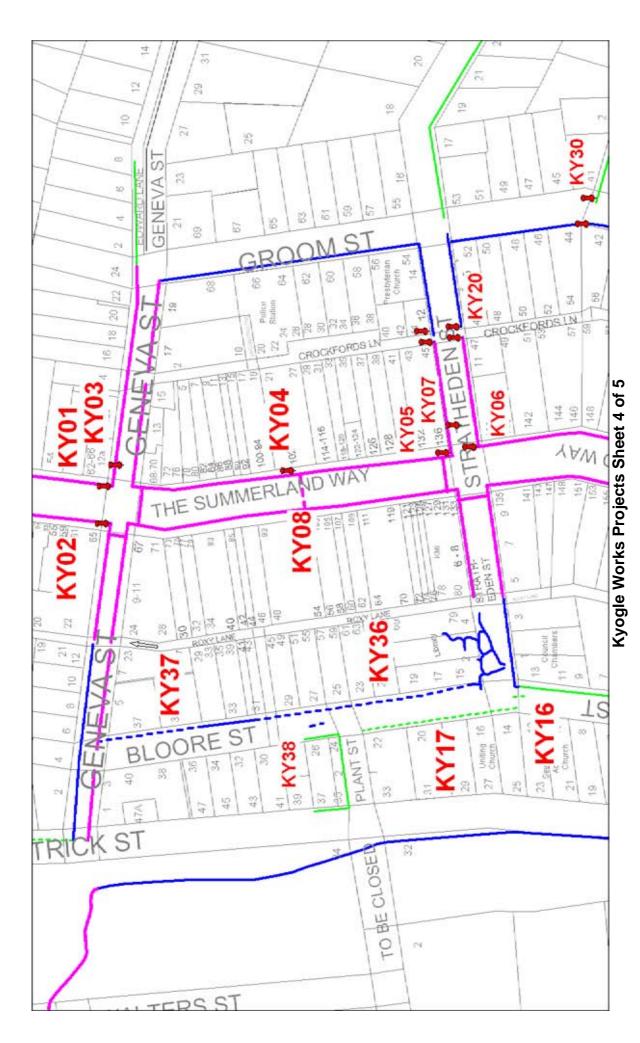
| Appendix F – Works Projects Mapping |  |
|-------------------------------------|--|
|                                     |  |
|                                     |  |
|                                     |  |
|                                     |  |
|                                     |  |
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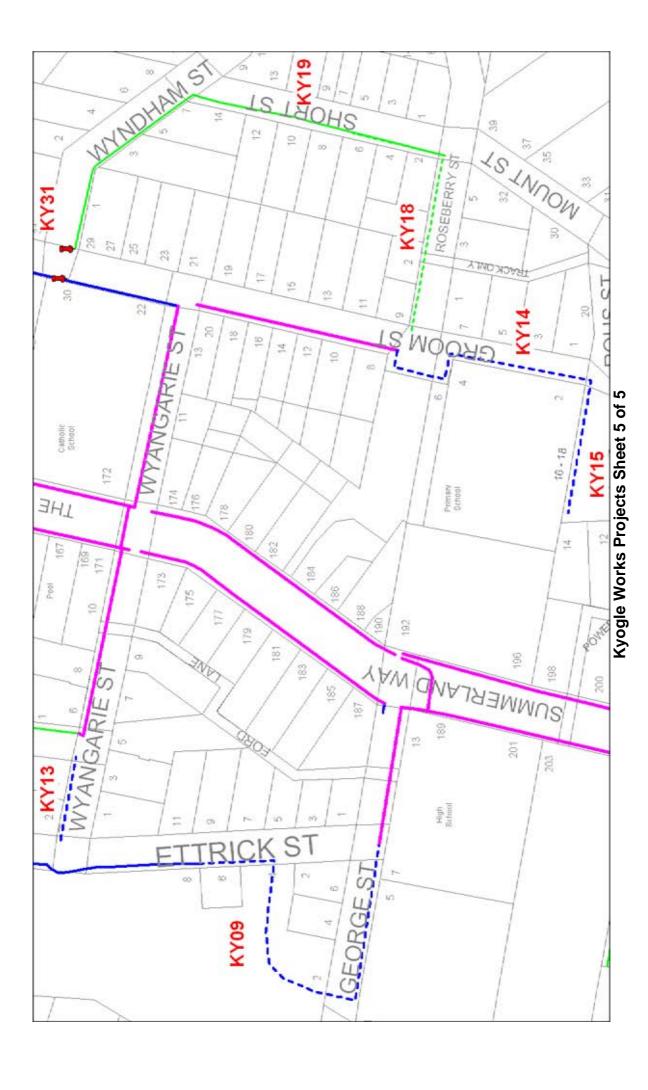
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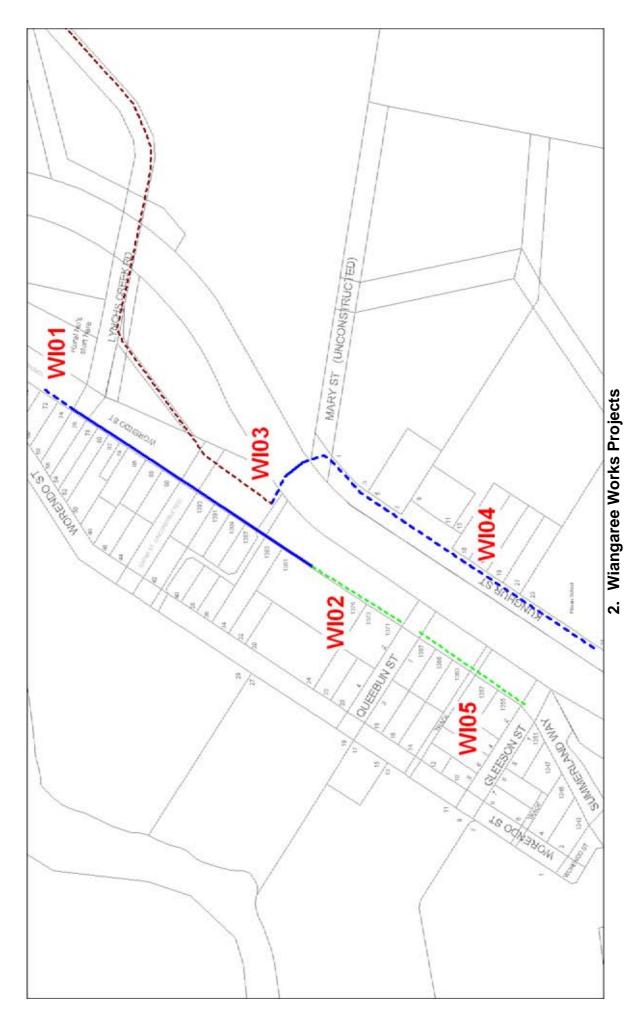




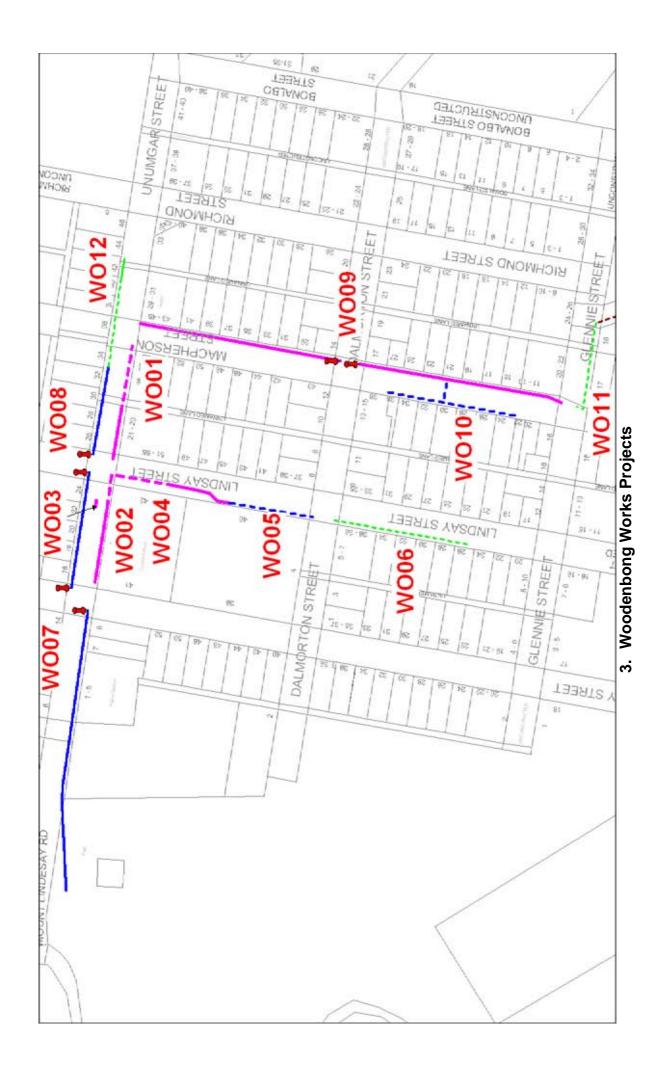


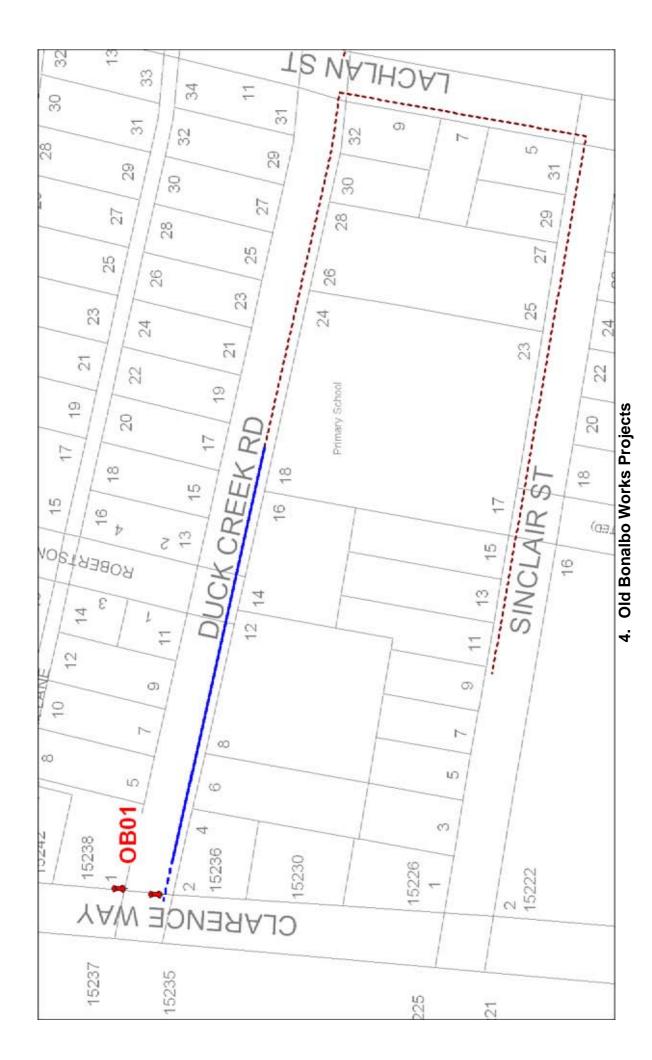


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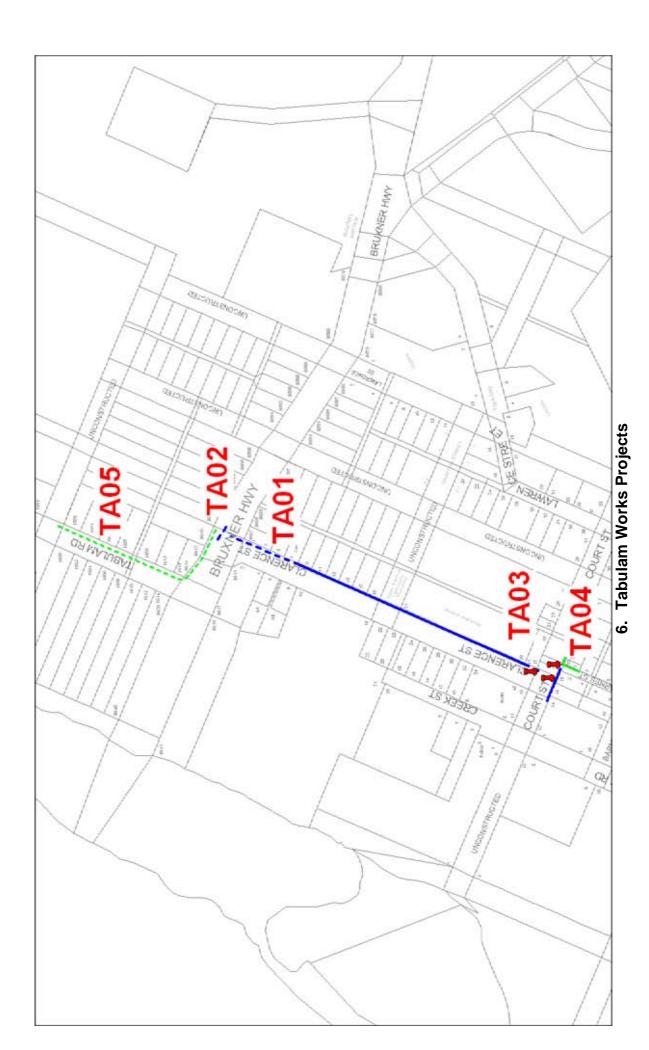


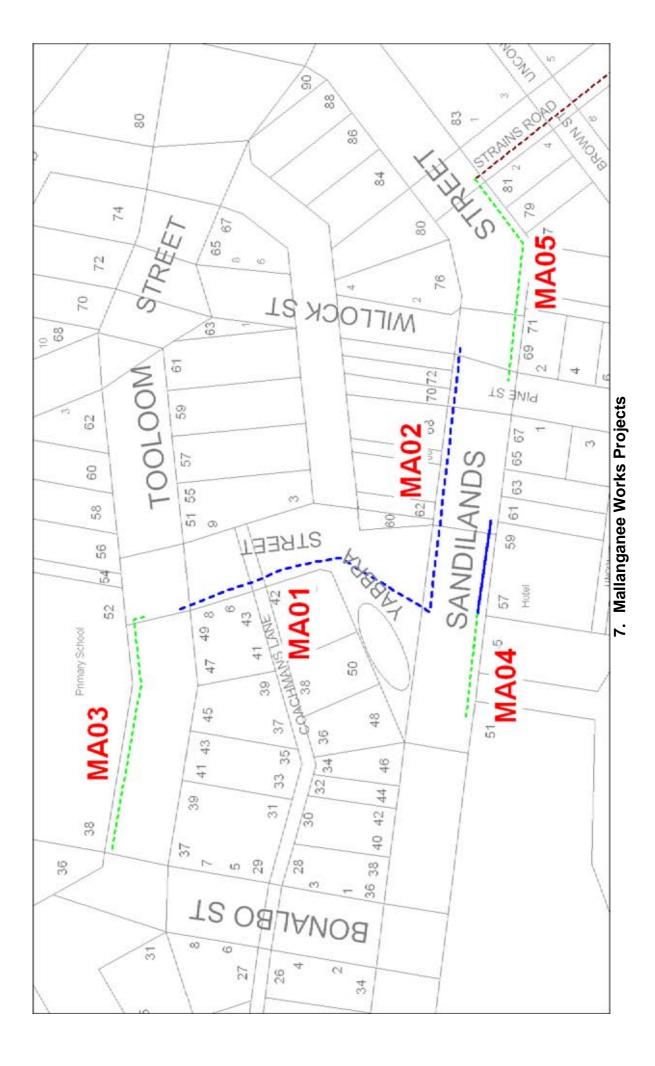
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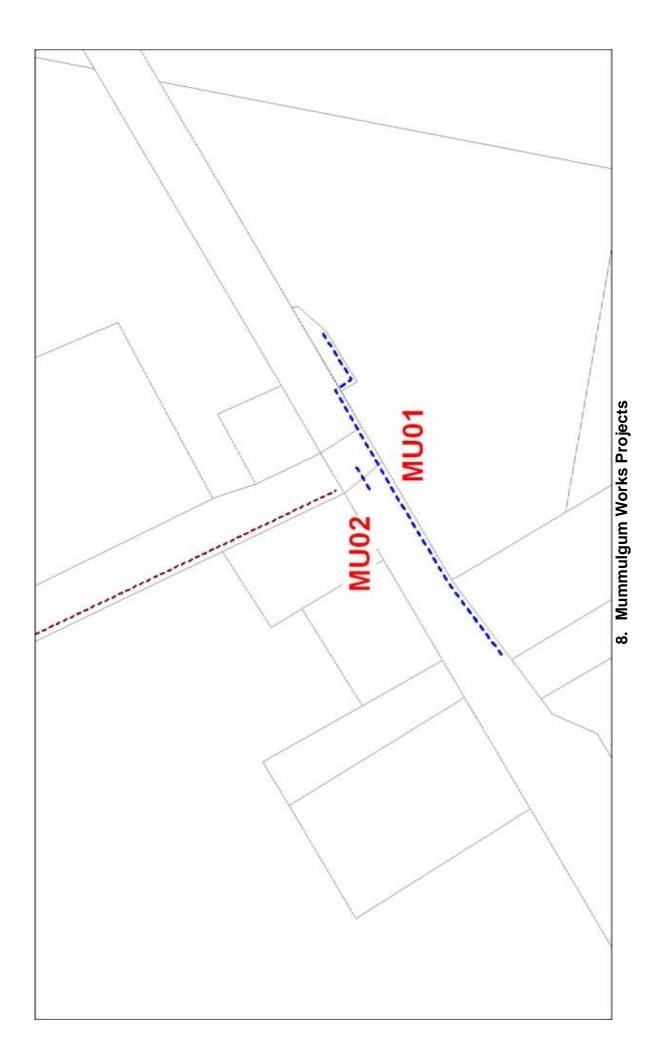


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