



NARROMINE SHIRE COUNCIL

PEDESTRIAN ACCESS AND MOBILITY PLAN (PAMP)

2011 – 2021

TABLE OF CONTENTS

SUBJECT	PAGE
Executive Summary	2
1. Introduction and Background	6
2. PAMP Project Objectives	7
3. Overview of the Narromine Shire	7
4. PAMP Methodology	9
5. Review of Literature and Available Data	10
6. Results of the Community Consultation Process	17
7. Pedestrian Attractors and Generators	18
8. Criteria for Walking Catchments	18
9. Route Priority	24
10. The Audit Process	24
11. Other Issues for Consideration	24
12. Possible Funding Sources	25
13. Cost Estimates	26
14. PAMP Action Plan	27
15. Recommendations	51
16. References	52
17. Acknowledgements	53

EXECUTIVE SUMMARY

Introduction

In 2004, Narromine Shire Council engaged David Riches and Associates Pty Ltd (DRA) to develop a Pedestrian Access and Mobility Plan (PAMP) for the three major towns in the Narromine Shire Council area. The resulting document covered the period from 2004 to 2014. Since then, new projects have been identified that Council would like to include in the PAMP and it was considered timely to conduct a review of the PAMP to include additional works that provide connectivity within the existing pedestrian facility network.

The towns identified for the study were Narromine, Trangie and Tomingley.

Within each town the PAMP plan was designed to assist Council to provide a road network and built environment that caters to the needs of all pedestrians. Pedestrians for the purpose of the Narromine PAMP included older persons, pedestrians with mobility and vision impairments, residents, school children and recreational pedestrians.

The rationale for the Narromine PAMP plan supports a State and Local Government commitment to safe and accessible pedestrian infrastructure in country areas on the key local pedestrian routes where people are more likely to walk than drive.

Additionally, the PAMP philosophy provides for a strategic and coordinated framework for local investment in pedestrian infrastructure on routes that have been identified by the community as important to sustainable and enhanced safety, convenience and mobility for walkers.

The overall focus of the PAMP plan is to improve pedestrian safety, mobility and access in Narromine by developing safe pedestrian networks for the resident and visiting population.

For the purposes of the Narromine PAMP a maximum distance of 1 kilometer (10 minute walk) has been determined as a cut off for attractors and generators identified in the study, and this has been applied to all three towns in the Shire.

Methodology

The core features of the PAMP methodology were broken into three primary stages, the first two of which were concerned with the development of the PAMP plan and required consultant support.

In these stages key pedestrian routes were identified, within an identified study area, which form a coherent pedestrian network. Additionally, a prioritised Works Schedule was developed for the key pedestrian routes identifying locations that could be improved to be safe and accessible, whilst meeting RTA guidelines and relevant Australian Standards.

The third stage of the PAMP plan is the implementation of the Work Schedule over a defined period of time. The 2011 review concentrated on updating the PAMP Action Plan to reflect the community needs in consideration of works that have been completed to date and by including some new projects.

Community consultation was an important part of the process. Consultation with the community occurred through a number of mediums, including newspaper advertisements and a community workshop conducted on 30 November 2011.

In 2011 the PAMP was half way through its life and 60% of work was completed. As the PAMP has had such great success over the past 6 years, council decided to keep the program running and conduct a review.

Contributing Plans and Associated Issues

Narromine Shire Council has in place or under development, plans that contribute to improved pedestrian safety and amenity, and thus, are relevant to this study. They include:

- Narromine Shire Community Strategic Plan 2010 - 2020
- Guidelines for Pedestrian Facilities (RTA)
- Narromine Shire Transport Strategic Plan -A Strategy for Improving the Passenger Transport Service
- Street Light Project (1999)
- Narromine Shire Bicycle Plan
- Guidelines for Pedestrian Facilities (RTA)
- "Integrating Land Use and Transport" (TNSW and DUAP)

These plans address the following key issues for pedestrians including:

Education, Encouragement and Enforcement (identified as a road user priority in the Narromine Shire Road Safety Strategic Plan)

Access for People With Disabilities (Narromine Shire Social Plan identifies access to transport and mobility difficulties for people in wheelchairs as major issues)

Off Road Pedestrian Facilities (identified as a priority in the Narromine Shire Bicycle Plan)

Security and Lighting (identified in Council's Street Light Project with the aim to light each intersection and provide one mid block street light)

Special Event Management (identified as an issue in the Narromine Shire Road Safety Strategic Plan and Narromine Shire Transport Strategic Plan)

New Developments (ensuring transport considerations are included in all events that require Council approval).

Pedestrian Crashes

Seven pedestrians were killed or injured over the five-year period from 1998 – 2002 in seven crashes. Two pedestrians were killed.

Three of the seven crashes (42%) occurred between 5 km – 14 km from major town centres.

Pedestrians are less likely to be killed or injured when in Narromine Shire (4.4%) than in the Western Region of the State (5%) and more likely than across NSW (3.5%).

Small sample sizes make interpretation difficult, however 71% of all pedestrian crashes occur across the 26 – 50 years age groups.

Pedestrian fatalities represent 22% of all fatal crashes in Narromine Shire.

Community Consultation Process

The review of the PAMP continued to build on the results of workshops previously conducted by Council with a specific focus on people that use special mobility vehicles (SMV), otherwise known as gophers, and a secondary target group being people confined to or using wheelchairs.

Additionally, comments were sought directly from the community through newspaper advertising and a PAMP community workshop was held. Findings are provided in the body of the report.

Route Priority

Routes where works have been identified in the PAMP are defined as Priority 1 and Priority 2. Priority 1 affects pathways used by school aged children, mobility impaired and seniors. Priority 2 covers all other pedestrian routes.

This approach provides Council with criteria to allocate current and future funding.

The Audit Process

The PAMP methodology requires that access barriers for pedestrians be identified with recommendations made to improve pedestrian safety, flow and networks. Consideration for people who have mobility impairment, such as seniors and disabled segments of the population also provide a particular focus.

Works Action Plan

Cost estimates for works were based on a review of construction estimates (see page 28) generally used and recommended by Council's in NSW that have instigated pedestrian facility works, as well as information provided by Narromine Shire Council's engineering staff.

The Action Plan identified thirty items at a cost of \$500,300 for the town of Narromine, eight items at a cost of \$80,925 for the town of Trangie and one item at a cost of \$25,536 for the town of Tomingley. Total costs for identified works across the Shire are \$606,761.

PAMP Recommendations

The PAMP recommends that Council consult with the Roads and Traffic Authority to ascertain funding viability for a staged implementation of pedestrian works over the next five to ten years, as identified in the PAMP.

It is suggested works commence in priority order, with those identified Priority One (affecting school children, seniors and mobility impaired people) scheduled before all other identified works.

Specific recommendations provided in this plan are to:

- Ensure all new footpaths constructed provide for a minimum width of 1.5 metres to allow wheelchairs to pass

PAMP 2011 to 2021 ACTION PLAN

- Upgrade existing 1.2 metre footpaths to 1.5 metres wide over time, in line with AustRoads recommendations (AustRoads Part 13: Pedestrian)
- Ensure pedestrian facilities identified in the PAMP action plan are constructed to meet the requirements of AS 1428 and AustRoads Part 13, Pedestrians as the standard
- In determining suitable crossing facilities AustRoads Part 13, Section 3 – Treatments for Pedestrians Crossing Roads should be used as a guide
- Consider that pedestrians integrate with traffic and cyclists across the road space when allocating future funding
- Ensure future pedestrian works are completed in concrete and asphalt, and replace existing bitumen and gravel footpaths over time
- Retain existing colour schemes in future paving works in town centres to assist sight impaired people
- Continue to implement the Street Light Project to ensure placement of lights mid block and at all intersections
- Instigate a six-monthly footpath sweeping program to remove loose gravel and other objects that can cause pedestrians to slip and trip
- Implement road safety education and enforcement activities for pedestrians in Narromine and Trangie as a component of Council's road safety strategy
- Implement a program with schools in the Shire to improve parental understanding of the road safety issues that affect young pedestrians.



1 INTRODUCTION AND BACKGROUND

In 2004 Narromine Shire Council engaged David Riches and Associates (DRA) to develop a Pedestrian Access and Mobility Plan (PAMP) for the three major towns in the Narromine Shire Council area.

The towns identified for the study were Narromine, Trangie and Tomingley.

Within each town the PAMP plan would assist Council to provide a road network and built environment that caters to the needs of all pedestrians. Pedestrians for the purpose of the Narromine PAMP included older persons, pedestrians with mobility and vision impairments, residents, school children and recreational pedestrians.

The rationale for the Narromine PAMP plan supports a State and Local Government commitment to safe and accessible pedestrian infrastructure in country areas on the key local pedestrian routes where people are more likely to walk than drive.

Additionally, the PAMP philosophy provides for a strategic and coordinated framework for local investment in pedestrian infrastructure on routes that have been identified by the community as important to sustainable and enhanced safety, convenience and mobility for walkers.

Pedestrians form the largest single road-user group. As a group they are particularly vulnerable to injuries and fatalities and their safety depends on a complex combination of the competence of drivers, the pedestrian facilities available and their own skills and abilities.¹

In the event of a crash, pedestrians are more likely to be killed or seriously injured than motor vehicle drivers or passengers.

Walking is both an important mode of travel and an important way to stay healthy and active. People will generally rationally assess whether it is more pleasant and safer to walk than to drive. Ideally, the environment should tilt the balance in favour of not using the car.

The recommended environment is accessible, safe and pleasant. The most common reasons for being physically active and therefore a part of a healthy community relate to shopping and linking up to public transport. Other facilities including healthcare centres, childcare centres, schools, sporting facilities and Post Offices are cited as giving people a reason to walk.²

The overall focus of the PAMP plan will be to improve pedestrian safety, mobility and access in Narromine by developing safe pedestrian networks for the resident and visiting population.

A PAMP Team was established to guide the planning and audit process. The Team comprised Council and community representatives and relied on local knowledge to determine problem pedestrian locations.

¹ NSW Country Road Safety Summit Pedestrian Issues Paper May 2004 Roads and Traffic Authority

² NSW Physical Activity Task Force. Simply Active Everyday: A Plan to promote Physical Activity in NSW 1998 – 2002 NSW Health Department, Public Health Division

2 PAMP PROJECT OBJECTIVES

Planning objectives for Narromine have been drawn from RTA guidelines in consultation with Council and the PAMP committee.³ The agreed key objectives for the Narromine Shire PAMP are:

- To facilitate improvements in level of pedestrian access and priority, particularly in areas of pedestrian concentration
- To reduce pedestrian access severance and enhance safe and convenient crossing opportunities on Shire roads
- To identify and resolve known and potential pedestrian crash points
- To facilitate improvements in 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 ensure that pedestrian facilities remain appropriate and relevant to current and future surrounding land use and pedestrian user groups

3 OVERVIEW OF THE NARROMINE SHIRE

3.1 The Narromine Shire Area

Narromine Shire covers an area of 5224km². The Shire is situated near the centre of New South Wales and forms the heart of the rich Macquarie Valley. The Shire has a population of approx 6800 and consists of three urban centres. Narromine (pop. 3500) is the main township, with Trangie (pop. 1000) 34km to the West, and the village of Tomingley (pop. 50) 38km to the South. The remaining 2250 residents live in the rural area.

The Shire is renowned for the quality and quantity of its agricultural production, so it is no surprise that wheat, cotton, citrus, cattle, fat lambs, corn, barley, oats, sorghum, and lucerne are in high production. The Shire is also home to Yates Research Station and Narromine Transplants, a large tree raising nursery.

Narromine was an air force training base in World War II and remains a renowned flying and gliding centre, in part due to the unique thermal currents.

The population in the area is expected to grow with the recent release of its Residential Skypark Development at Narromine Aerodrome. The Shire is experiencing increasing interest and activity across commercial, industrial and residential sectors, which in turn is encouraging additional development.

The planned future direction of the Shire is to encourage industrial development and to provide a rural quality of life with the advantages of an inland city. The Shire is centrally located in the State with excellent links to capital cities, and the port of Newcastle.

³ How to Prepare a Pedestrian Access and Mobility Plan March 2002 Roads and Traffic Authority

3.2 Population Overview

In 2001 (ABS Census 2001), within the Narromine Shire area:

- 12% of the population were aged 65 years or over.
- Young people aged under 25 made up over one-third of the population (36%).
- Most people residing in the Shire were born in Australia (91%)
- The major population groups born overseas are from English speaking countries (New Zealand and United Kingdom)
- Around 84% of households in the Shire have at least one motor vehicle and 60% of those employed drive to work.

Technology use is relatively low. Around a quarter of the population use the internet, either at home and/ or work. A quarter of the population aged over 15 have post-high school, TAFE or university education. The unemployment rate of the Shire is high, at 8.5% of the population. 22% of those employed work as managers and administrators, 14% work as labourers and 11% work in a trade.

3.3 Road Traffic Volumes

Traffic volume data on the road system in the Shire (for the town of Narromine) was available from the RTA for 2002. High traffic volumes were evidenced on the following roads:

Table One: Traffic Volumes

ROAD	LOCATION	AADT (DAILY TRAFFIC VOLUME)
Burraway Street	Narromine – East of Dandaloo Street	4,070
Dandaloo Street	Narromine – at level crossing	7,254
Dandaloo Street	Narromine – north of Burraway Street	9,887
Dandaloo Street	Narromine- south of Derribong Street	4,839
Derribong Street	Narromine – east of Dandaloo Street	2,501
Warren Road	Narromine – north of Mitchell Highway	1,955

3.4 Transport Options

Information on local transport options is available in Council’s Transport Strategic Plan. A summary of current transport options available as outlined in the plan is as follows:

Local Buses

The principal local bus operators in Narromine and Trangie are those that provide school services. However, there is also a school bus services that runs from Dubbo and Peak Hill to Tomingley. These services will carry public passengers if space permits.

A Community Transport Service operates from Narromine to Dubbo once a week. A Daycare Respite bus is available 5 days a week for residents in Narromine also.

The Aboriginal Lands Council has an eighteen-seater bus that can be hired out to community groups.

CountryLink Services pass through Narromine and Trangie twice per day.

Trangie RSL operates a bus to pick up older people and take them to the RSL on a weekly basis.

Long Distance Buses

There are two services operating through the Narromine Shire. These are:

- Greyhound Pioneer (Sydney to Adelaide service)
- CountryLink Coaches (daily between Narromine and Sydney, other regional centres)

Taxis

Narromine Radio Cabs are the only operator in the town. They provide subsidised services for older and disabled people as a part of the government funded Taxi Transport Subsidy Scheme, as well as a Seniors Club service offering cheaper trips for older people. They have one wheelchair accessible taxi.

There is no taxi operator in Trangie or Tomingley.

Rail

There is a rail link from our Shire, Trangie and Narromine, being Country Link Coaches to Dubbo from the rail terminal.

Cycling/Pedestrians

Extensive bicycle and pedestrian pathways are located at the edges of Narromine and Trangie for recreational and tourist use. Although not designated shared footpaths, both cyclists and pedestrians use the existing paved and bitumen footpaths located in both towns.

4 PAMP METHODOLOGY

The core features of the PAMP methodology are broken into three primary stages, the first two of which are concerned with the development of the PAMP Action Plan and require consultant support.

In these stages key pedestrian routes are identified, within an identified study area, which form a coherent pedestrian network. Additionally, a prioritised Works Schedule is developed for the identified key pedestrian routes identifying locations that can be improved to be safe and accessible, whilst meeting RTA guidelines and relevant Australian Standards. (The third stage of the PAMP plan is the implementation of the Work Schedule over a defined period of time).

Considerations include pedestrian concentration, centres of activity, identifiable accident clusters, walking patterns and links between land use, pedestrian facilities including pedestrian accessibility, and mobility issues within the agreed study area in the main town centres of Narromine, Trangie and Tomingley.

Consultation is an important part of the process. Planning meetings were held with Council's Road Safety Officer, Council staff and elected members to ensure organizational ownership contributes to future commitment to the PAMP recommendations.

It was also considered important to consult with the community. Information gathered in this process was extremely useful in that it provided details of actual experiences and observations of local community members. Consultation occurred through a number of mediums, including a newspaper advertisement, media release, and community and key stakeholder surveys (see Appendix 1-4).

To complete the consultation process a stakeholder workshop was held at Council Chambers on November 3, 2004. Findings from this component of the consultation are detailed in the results of the community consultation process on pages 18 – 19.

5 REVIEW OF LITERATURE AND AVAILABLE DATA

5.1 Plans

Narromine Shire Council has in place or under development plans that contribute to improved pedestrian safety and amenity, and thus relevant to this study. They include:

- Guidelines for Pedestrian Facilities (RTA)
- Narromine Shire Transport Strategic Plan -A Strategy for Improving the Passenger Transport Service
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Security and Lighting (identified in Council’s Street Light Project with the aim to light each intersection and provide one mid block street light)

Special Event Management (identified as an issue in the Narromine Shire Road Safety Strategic Plan and Narromine Shire Transport Strategic Plan)

New Developments (ensuring transport considerations are included in all events that require Council approval)

5.2 Pedestrian Crash Data

Across NSW

The pedestrian casualty problem in country NSW is primarily an urban problem. Specifically, 20% of fatalities on country urban roads are pedestrians (compared with 3% of fatalities on country non-urban roads being pedestrians).

In general terms, pedestrian fatalities occur during the day with the peak between the hours of 4pm – 9pm. However, a third of fatalities also occur between the hours of 10 pm and 6 am.

The majority of pedestrian fatalities (87%) in country areas occurred at non-intersection locations (with only 3% occurring at pedestrian crossings).

More than three quarters of drivers involved in fatal pedestrian crashes were males aged 17-49.

Over the period 1998–2002 two particular sub-groups stand out as particularly vulnerable and represent a significant portion of pedestrian fatalities in country areas.

These are 'drink walkers' and older pedestrians. When compared to metropolitan areas, country pedestrian fatalities differ in terms of the involvement of these two groups - there is a lower involvement of older pedestrians and a higher involvement of 'drink walkers'.

In Narromine Shire

Seven pedestrians were killed or injured over the five-year period from 1998 – 2002 in seven crashes. Two pedestrians were killed.

Three of the seven crashes (42%) occurred between 5 km – 14 km from major town centres.

Crash locations are provided for Narromine and Trangie in Figures One and Two below.



Figure One: Pedestrian Crashes in the Town of Narrromine (1998 – 2002)

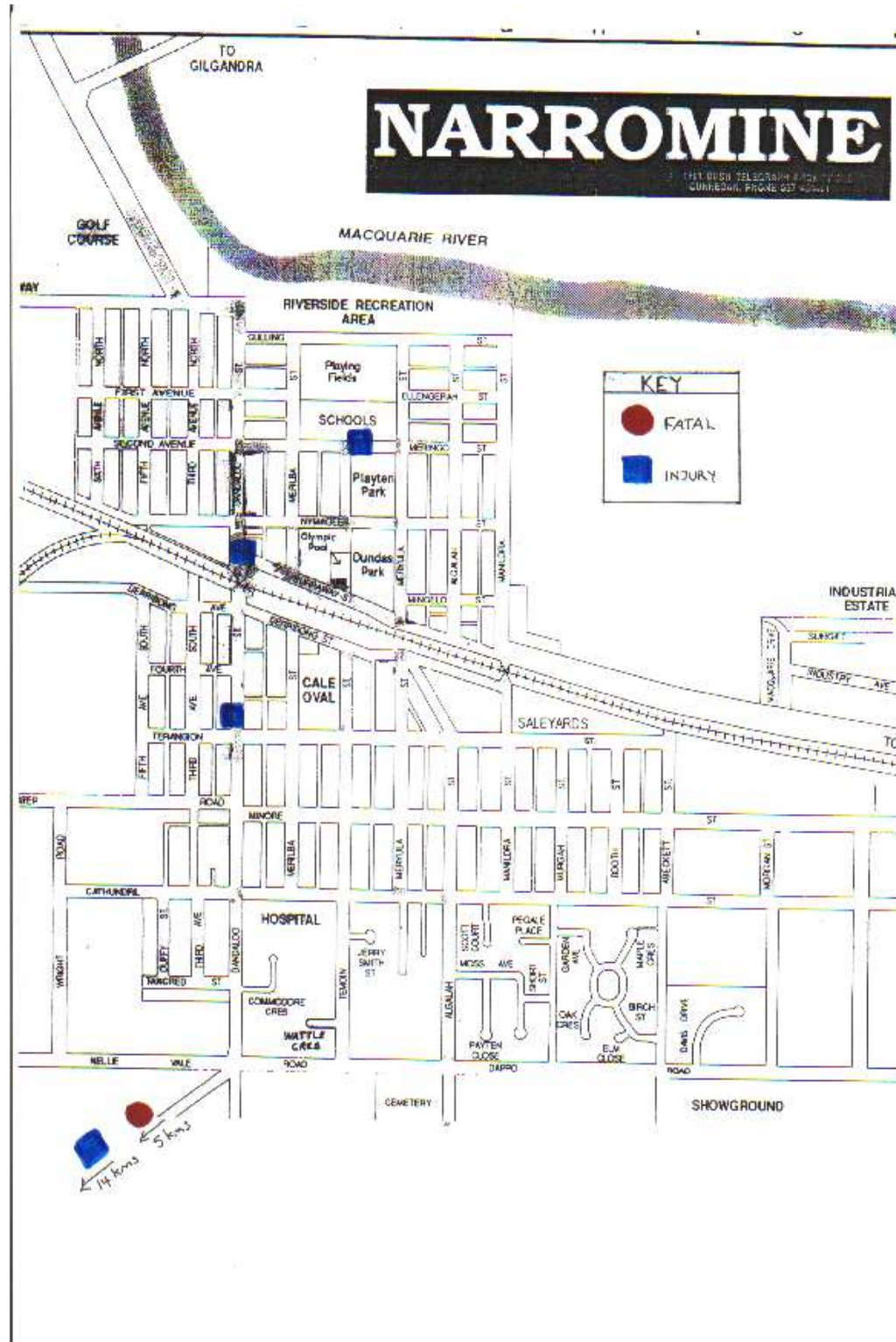
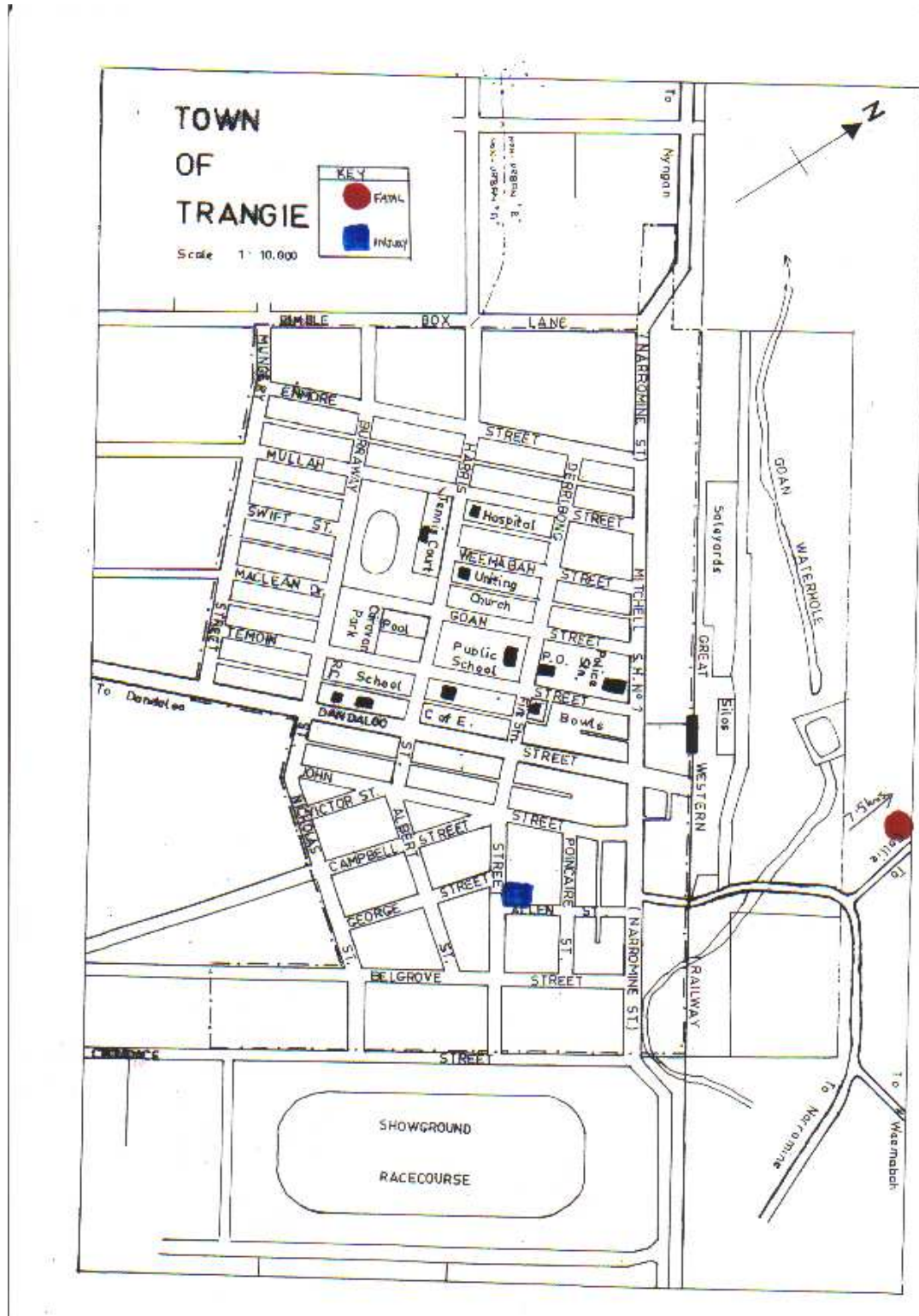


Figure Two: Pedestrian Crashes in the town of Trangie (1998 – 2002)



Pedestrians are less likely to be killed or injured when in Narromine Shire (4.4%) than in the Western Region of the State (5%) and more likely than across NSW (3.5%).

Small sample sizes make interpretation difficult. However 71% of all pedestrian crashes occur across the 26 – 50 years age groups.

Pedestrian fatalities represent 22% of all fatal crashes in Narromine Shire.

The RTA defines a pedestrian accident cluster as any location up to 100 metres long with three or more pedestrian accidents over a five-year period. In the Narromine Shire there are no identified clusters, according to these criteria.

5.3 Pedestrian Crash Detail

A Pedestrian Road User Movement Code summary is attached as Figure Three.

A detailed summary of RTA pedestrian crash data reviewed from January 1998 to December 2002 is provided in Figure Four.



Figure Three: RTA RUM (Road User Movement) Summary

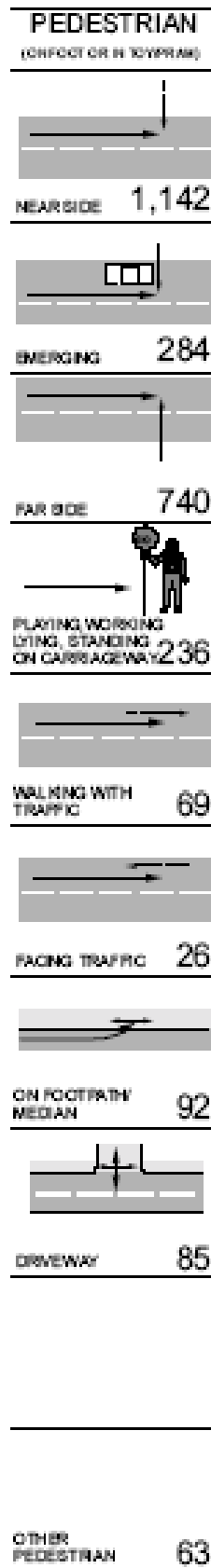


Figure 4: Pedestrian Crash Summary Narromine Shire (1998 – 2002)

Day	Month/Year	Suburb	Street	Distance	Accidob	Dir	Time	Street Lights	Cond	Weather	Rum	Degree	Type1	Type2	Sex1	Age1	Sex Ped	Age Ped
Sat	Jan-98	Trangie	Collie Rd	7.5 kms	Mitchell Hwy	North	505	Nil	Dry	Fine	On carriageway	Fatal	Road Train	Ped	Male	49	Male	36
Thurs	May-98	Narromine	Dandaloo St	0	Railway Lx	On the spot	1735	Off	Dry	Fine	Near side	Injury	Other motor vehicle	Ped	Unk	Unk	Male	29
Sat	Jun-98	Narromine	Dandaloo St	0	Number 129	On the spot	15	On	Dry	Fine	Far side	Injury	Car	Ped	Male	24	Male	49
Sun	Jan-99	Narromine	Tullamore Rd	5kms	Narromine Town	South	130	Off	Dry	Fine	On carriageway	Fatal	Other motor vehicle	Ped	Unk	Unk	Male	29
Thurs	Apr-02	Trangie	Derribong St	10 mtrs	Allen Street	West	1530	Off	Dry	Fine	Near side	Injury	Car	Ped	Female	20	Male	15
Mon	Nov-02	Narromine	Meringo St	0	Temoin Street	On the spot	1600	Off	Dry	Fine	Near side	Injury	Car	Ped	Male	19	Female	Unk
Mon	Sep-02	Wyanga	Peak Hill Rail Rd	14 kms	Tullamore Road	South	830	Nil	Dry	Fine	On carriageway	Injury	Rigid Tanker	Ped	Male	59	Male	54

5.4 Existing Pedestrian Facilities

The towns of Narromine and Trangie each have six pedestrian refuge facilities sited within the defined geographic area for the PAMP study. Kerb ramps are in place in these locations. Locations are provided in Figures five and six.

6 RESULTS OF THE COMMUNITY CONSULTATION PROCESS

PAMP Community Workshop

A PAMP community workshop was held in November, 2011. Invitations were widely distributed to the major community organizations.

The workshop was attended by representatives from Council (elected and staff), the Roads and Maritime Services, community members and a letter was received from Timberbongie House (aged care).

An important component of the workshop involved identification of locations that it was considered cause access and safety problems for the local community in the towns of Narromine, Trangie and Tomingley.

Specific locations and problems identified included:

- Railway Crossing in Narromine – Manildra St level crossing – lack of pedestrian maze.
- Elderly pedestrians twalking on the Bicycle Lanes marked on the road as there is no path along eastern Dandaloo St.
- Western side of Temoin St to be omitted to allow for Dandaloo St funding.
- Narromine Pool pedestrian refuge on highway.
- Tomingley footpath to link BP service station and Bus Stop on highway.

All locations identified in the review, were deemed appropriate and included in the PAMP Action Plan (see Attachments 6,7 & 8 and also PAMP Action Plan).

7 PEDESTRIAN ATTRACTORS AND GENERATORS

Pedestrian attractors and generators are locations that pedestrians travel to and from many times, and can also be gathering points for pedestrians.

A number of pedestrian attractors and generators are located in the Shire's major towns.

They include schools, railway station, recreational parks, shopping ribbon, hotels, churches, hospital council buildings (including administration and library services), post offices, swimming pool, Tourism Information Centre and health services.

In Narromine

- Main street
- Service clubs
- Day care facilities
- Retirement villages (2) and the Hostel
- Main street pedestrian crossing
- O'Neill Square, including landscaping in the road centre and shopping both sides of the road

- Church on Sundays
- Paten Oval
- Public School
- Hospital – crossing to the corner store in Cathundril Street to the Christian School in Peak Hill Road.

In Trangie

- Multi-purpose Gym
- Footpaths (good standard)
- Football ovals
- Pool
- Hotels/Clubs/Bowling Club.

In Tomingley

- Truck stop
- Roadhouses (2)
- Motel and pub
- School bus stops (also act as an interchange).

Proximity of pedestrians to facilities is considered a major factor in providing priority to proposed works.

8 CRITERIA FOR WALKING CATCHMENTS

For the purposes of the PAMP, walking distances are assumed to be in line with that proposed in the AustRoads Guidelines. This states that a reasonable limit for non-recreational walking trips is around 1.5 kms for people with no disability. Shorter distances apply for those people that have mobility problems.

For the purposes of the Narromine PAMP a maximum distance of 1 kilometre (10 minute walk) has been determined as a cut off for attractors and generators identified in the study, and this has been applied to all three towns in the Shire.

Other criteria used to assess pathways are based on user type (see below), results of community consultation workshops (Gopher Broke) already held, and inspection.

Older People and People with a Mobility Impairment

Older people aged 55 years and over make up 22.9% of the Narromine Shire population. Most older people live at home and around 5% live in care accommodation. A large older population in the Shire makes ease of access and route preference an important consideration in the PAMP plan. This in turn assists older people to retain independence and remain in their own home.

The PAMP considers contributively factors to crossing behaviour when assessing the suitability of the proposed pedestrian refuges for older and disabled people.

- In general, older pedestrians delay 3-4 seconds longer at the kerb than younger adults do. When delays at the kerb are taken together with slow crossing times and other behavioural changes the overall effect reduces the capacity of older people to deal with complex road systems.
- Once stepping from the kerb older pedestrians tend to make less head movements than younger pedestrians. They have a reduced ability to continue scanning for safety while crossing. Thus by avoiding eye contact with the

approaching vehicle and driver the older pedestrian is in effect transferring responsibility for their safety to the driver. However drivers often assume, incorrectly, that pedestrians make all the appropriate checks.

Older and disabled people also have loss of sensory, cognitive and motor skills (in varying degrees). These losses include:

- Decline in visual acuity
- Decline in contrast sensitivity
- Visual field loss
- Loss of auditory capacity
- Reduced perceptual performance
- Reductions in motion perception
- Reduced dark adaptation and glare recovery
- Declines in attention and memory capacity
- Decision time deterioration
- Neuromuscular strength loss
- Postural control and gait changes
- Slowed reaction times
- Declines in cognitive processing ability.

It is therefore important that proposals for pedestrian safety solutions for older and disabled people consider these factors. It should also be considered that across NSW most pedestrian crashes involving older pedestrians occur in 60 km/h zones.

For pedestrians with a mobility problem (seniors and disabled people) the PAMP considers the following issues:

- Quality of pavement surfaces
- Quality of ramps
- Crossing facilities
- Potential for conflict with shopping and other entry points
- Seating

The 1996 census identifies around 18% of the Shire's population with a disability.

The Narromine Shire Council Social and Community Plan (2005 – 2009) identifies wheelchair access around Narromine and footpath maintenance as the key issues of concern.

School Children

The DOT set 1.6 kms (primary students) to 2 kms (secondary students) as a no-free bus area.

School pedestrian routes in the three towns include state and collector roads.

Schools in the town of Narromine are: Narromine Christian School, Narromine High School, St. Augustine's Parish School, Narromine Public School

Schools in the town of Trangie are: St. Johns School, Trangie Central School, Trangie Infants School.

Children under the age of 14 years represent 24.7% of the population in the Narromine Shire (ABS Census 2001), making school and child care catchments an important part of the PAMP action plan.

Shopping Precincts

In the towns of Narromine and Trangie recreational routes need to link all pedestrians to shopping ribbons, major service points and the town centre. Tomingley is a small village without a shopping precinct.

The previous PAMP action plan identifies pathways both existing and proposed based on the results of the "Gopher Broke" mobility workshops held in 2003. The PAMP used these findings to assess the condition of existing footpaths, and to cost the construction of new footpaths in the PAMP Action Plan.

Figure 5: Recreational Pedestrian Routes in the town of Narromine (Existing and Proposed)

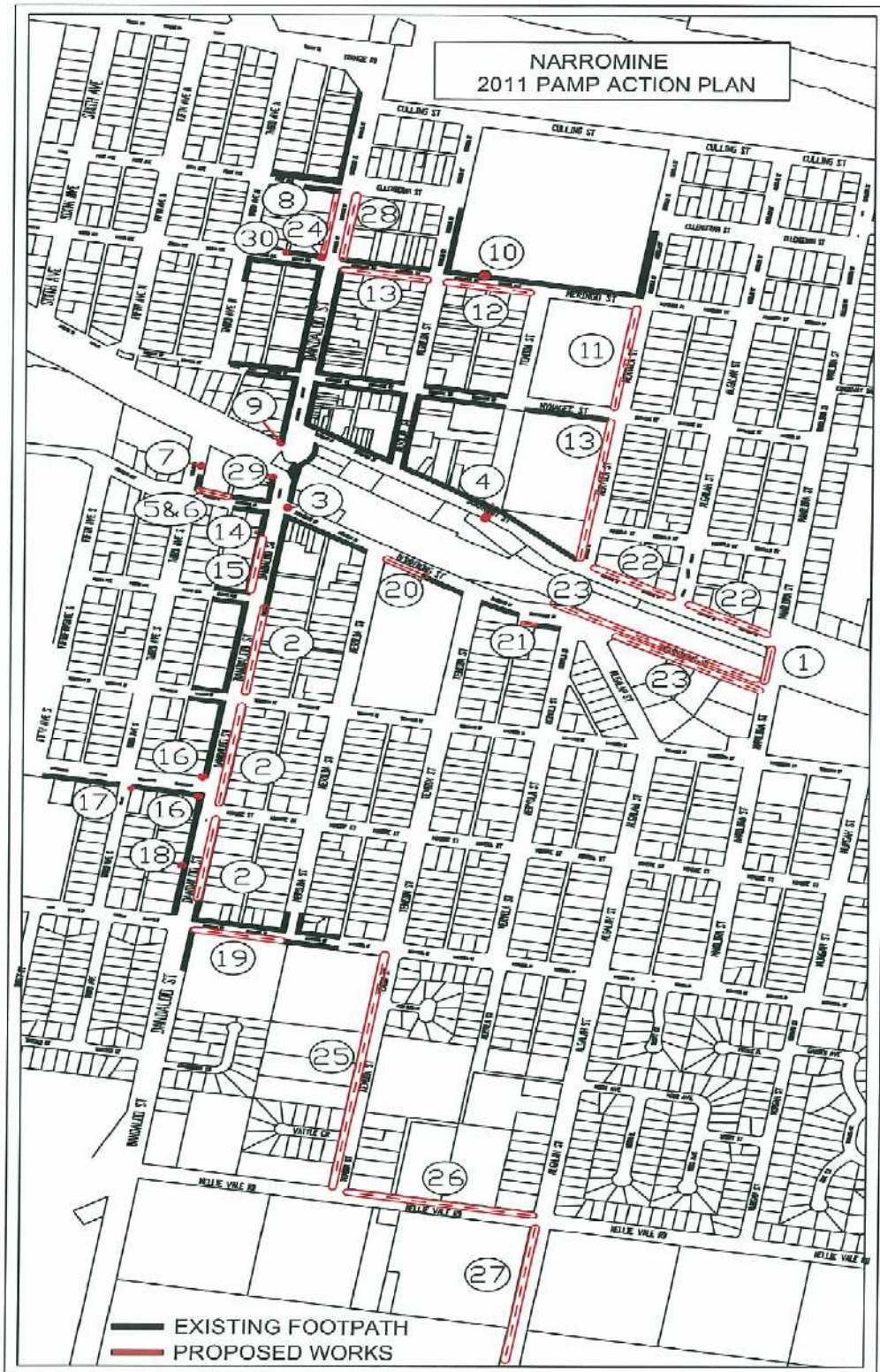
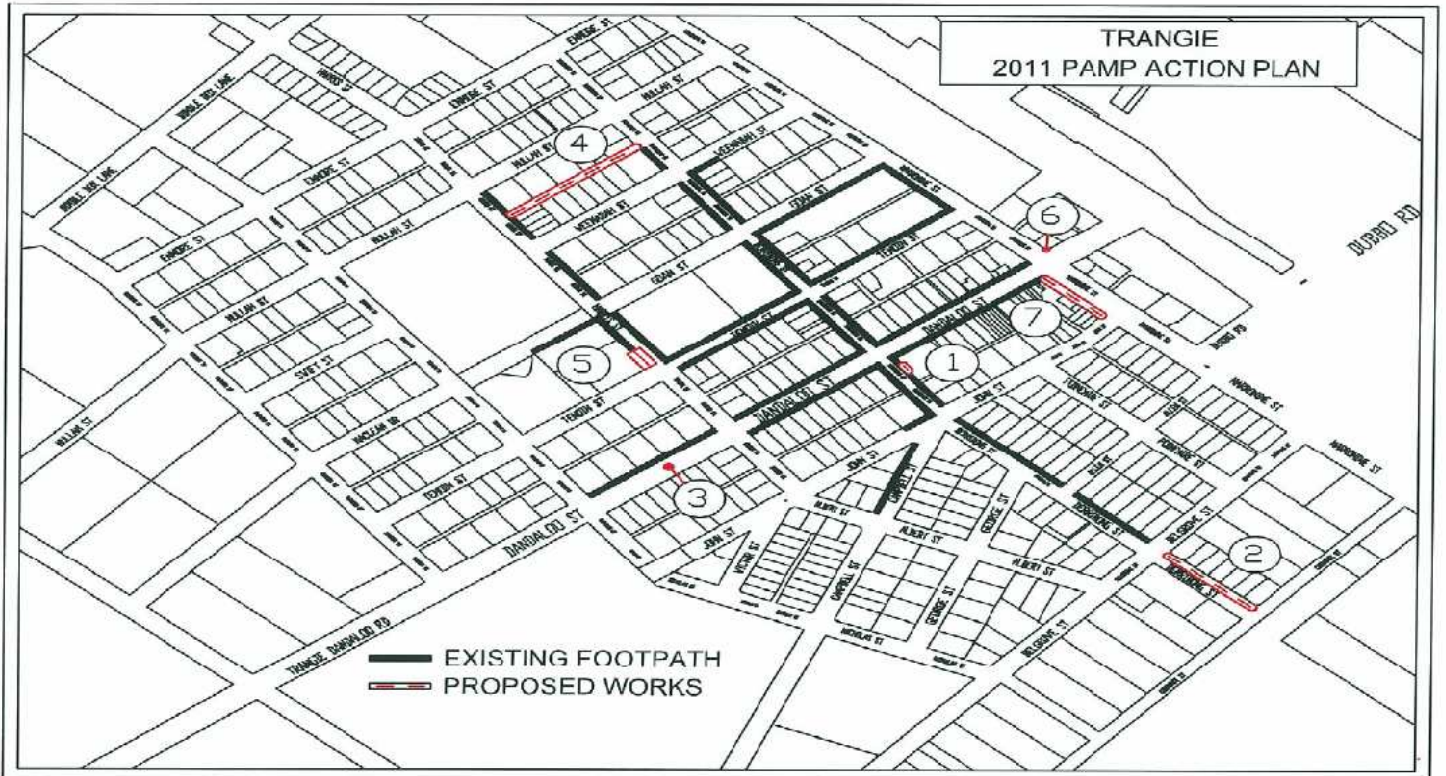
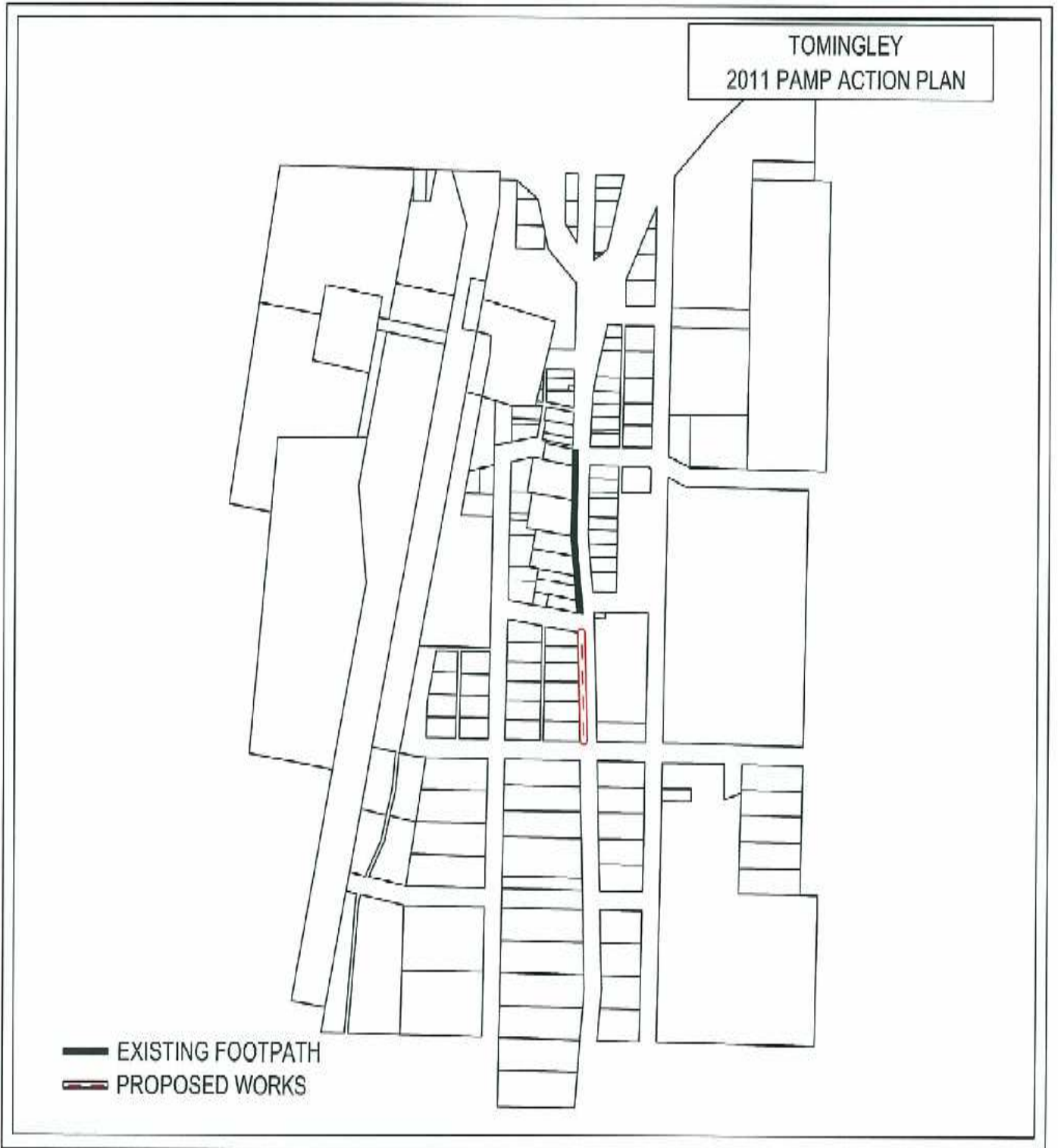


Figure 6: Recreational Pedestrian Routes in the town of Trangie (Existing and Proposed)



**Figure 7: Recreational Pedestrian Routes in the town of Tomingly
(Existing and Proposed)**



9 ROUTE PRIORITY

Routes where works have been identified in the PAMP are defined as Priority 1 and Priority 2. Priority 1 affects pathways used by school, aged children and seniors. Priority 2 covers all other pedestrian routes.

This approach provides Council with criteria to allocate current and future funding to deliver the PAMP Action Plan.

10 THE AUDIT PROCESS

The PAMP methodology requires that access barriers for pedestrians be identified with recommendations made to improve pedestrian safety, flow and networks. Consideration for people who have mobility impairment, such as seniors and disabled segments of the population also provide a particular focus.

A physical inspection of the preferred routes that were submitted in "Gopher Broke" workshops was conducted by Council's Road Safety Officer and a draft footpath plan was developed (see Action Plan below).

The consultant firm, Road Safety Officer and Council engineering staff conducted an additional audit of Narromine, Trangie and Tomingley to identify any additional action elements, and to measure and cost proposed footpaths.

The audit findings recommend that existing 1.2 metre footpaths be upgraded to 1.5 metres wide over time. In general a footpath width of 1.2 metres is considered adequate. However AustRoads recommendations (AustRoads Part 13: Pedestrian) provide for a minimum width of 1.5 metres to allow wheelchairs to pass. Due to the high use of "gophers" across the Shire it is recommended that a width of 1.5 metres be adopted by Council as a minimum standard for rectification and future pedestrian works.

It is also recommended that future pedestrian works are completed in concrete and asphalt. Existing bitumen and gravel footpaths should be replaced over time. They are less expensive but are easily slipped on and loose gravel presents problems for disabled people and people using wheelchairs. Existing bitumen pathways across the Shire should be swept twice a year.

Additionally, future paving works in town centres should retain existing colour schemes, as sight impaired people frequently use the difference in colour of the pavement to help guide their route. Variation in colours can cause confusion.⁴

11 OTHER ISSUES FOR CONSIDERATION

11.1 Physical Activity

Improving the environment may afford opportunities for increased physical activity and therefore a healthier population in the Narromine Shire. Improved access to pedestrian links may lead to an increase in walking as a form of exercise and mode of transport.

This concept is supported by the NSW Health Simply Active Everyday, Active Australia (1998 – 2002) Plan.

⁴ AustRoads Part 13: Pedestrian - page 24

11.2 Access for People with Disability

The PAMP plan for Narromine Shire supports the NSW Government approach to providing disabled people with the same access to services that are offered to the general community. This is reinforced by the NSW Government Disability Policy Framework.

11.3 The Three Es (Education, Enforcement and Engineering)

The PAMP plan offers engineering solutions designed to meet the needs of resident and visiting pedestrians. Engineering options provide physical change to the road environment but do not guarantee use. Road safety education and enforcement work to reinforce environmental change by providing for a better understanding of road safety issues and road user decisions to improve road safety behaviors and attitudes. This view is supported in the RTA's "Road Safety 2010 Framework for Saving 2,000 Lives by the Year 2010".

The Narromine Shire Road Safety Strategic Plan (2005 – 2009) will work to reinforce these principles by providing local education and awareness activities designed to improve pedestrian behavior and reduce crash rates.

11.4 Lighting and Safety

At night a safe pedestrian environment is associated with adequate street lighting. Council is currently implementing the Street Light Project (commenced in 1999) to improve lighting in the towns of Narromine and Trangie. Funds for this project are provided by an ongoing grant from Country Energy. Each intersection and one street light mid block will be lit. At the time of writing one hundred and fifty street lights had been placed in this program.

11.5 Events

Major events in the Shire attract increased numbers of pedestrians. Events include:

- Australia Day celebrations (January 26th)
- Natfly Ultra Light Fly-In (Easter)
- Easter fishing competitions
- Agricultural Show (early September)
- Crossing the Divide (March), Goan Waterhole, Trangie

Pedestrian safety, mobility and access are important concerns for all events held in public areas and places. It is important Council give consideration to pedestrian issues using support available in the RTA's guidelines on "Traffic Management for Special Events" (1999).

12 POSSIBLE FUNDING SOURCES

12.1 Council Budget

Council's budget for the 2011/2012 year includes amounts as follows:

Total Budget	\$40,000.00
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The estimated total cost for pedestrian works identified in the PAMP 2011 to 2021 is \$606,761 (both Priority One and Priority Two). Council will resource projects identified

in the PAMP during the course of the PAMP and will also seek additional funding where possible to complete projects earlier, where possible.

12.2 Section 94 Contributions

Section 94 contributions for public facilities and services can be sought from developers in accordance with the Environmental Planning and Assessment Act (1979).

It is recommended that ongoing review be conducted by Council to determine the extent that new development in the Shire creates a need for a particular service or facility. For example should population increase in new development areas contribute to increased pedestrian volume in the development, or in other areas of the Shire, funding should be sought from the developer at the approvals stage through Section 94 contributions.

12.3 Local Area Traffic Management (LATM) Approaches

Improvements for pedestrian amenity can be generated by integrating traffic, pedestrian and cyclist amenities in the road space at the concept development stages. Funding can be allocated and prioritized for these work types.

12.4 Maintenance Programs

Maintenance work should be undertaken as it affects pedestrian safety and access issues for local road users in the Shire. Funding may be sought from both Council budgets and the Roads and Traffic Authority.

13 COST ESTIMATES

Cost estimates are based on a review of construction estimates generally used and recommended by Council's in NSW that have instigated pedestrian facility works, as well as information provided by Narromine Shire Council's engineering staff. It is important to note estimates are provided as a guide for future budget allocations and do not provide an accurate costing for sites identified in the Revised PAMP.

Unit costs used for this study are shown below in Table Two.

Table Two: Cost Estimates for Pedestrian Works

Item	Cost
Install new footpath	\$152/m
Replace existing footpath (1.5m)	\$76/m
Repair cracks in footpath (1.5 m)	\$89/m
Replace existing footpath (3.2 m)	\$445/m
Restore sunken paving	\$89/m
Grind concrete sections footpath	\$51/m
Remove kerb ramp and restore gutter line	\$ 635 per
Re-sheet existing bitumen pathways	\$102/m
Replace kerb ramps	\$1270 per
Relocate kerb ramps	\$1270 per
Repair cracking around service entry	\$762
Repair minor cracking	\$25/m
Repair major cracking	\$254/m
Repaint line markings	\$2096 per
Install AS signage at crossing	\$191 per

PAMP 2011 to 2021 ACTION PLAN

Repair road way crossing surface	\$2540 per
Trim trees	\$191 site
Relocate crossing pole from path of travel	\$2540
Supply and install AS bench seat	\$2413
Supply and install new bin	\$1397
Install tactile tiling (AS 1428.4) at kerb ramps for sight impaired	\$254 per
Relocate bins away from path of travel	\$254 per
Provide sign and stem	\$254

14 PAMP ACTION PLAN


The PAMP Action Plan has been developed with the assumption of delivery over the term of twenty years.

Priority One initiatives will be undertaken first.



The action plan identifies relevant facility user groups for each recommendation, using the following identifiers:

SH	SHOPPERS
SEN	SENIORS
DIS	DISABLED
REC	RECREATIONAL USE
SCH	SCHOOL CHILDREN


PAMP 2011 to 2021 ACTION PLAN

NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
1	Manildra street rail line crossing	<p>Construct new footpath and crossing to standard</p> 	Provide a safe crossing area for pedestrians across the railway line		\$25,000	SCH REC	1

PAMP 2011 to 2021 ACTION PLAN



NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
2	West side Temoin from Derribong to Cathundril	<p>Construct new footpath to standard and kerb ramps e.g. Minore and Dandaloo Intersection</p> 	Link to Community Health Centre	1.5 x 570	\$86,868	REC SEN SCH	1
3	Eastern Derribong St and Dandaloo St Intersection	<p>Construct new pedestrian refuge</p> 	Provide safe crossing for pedestrians		\$20,000	REC SCH	1

PAMP 2011 to 2021 ACTION PLAN



NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
4	Burraway St in front of swimming pool	<p>Construct new pedestrian refuge to standard</p> 	Link between parking area and cycle track to swimming pool		\$8,500.00	REC	1

PAMP 2011 to 2021 ACTION PLAN

NARROMINE




Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
5	Entrance to rest area for Seniors at Aged Care Centre	Level pavers to gutter line 	Trip hazard	2	\$178	SEN	1
6	Front of Aged Care Centre on south side Derribong Street	Level pavers to gutter line between bottle shop and Third Ave 	Trip hazard	5	\$445	SEN SH	1

PAMP 2011 to 2021 ACTION PLAN

NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
7	Third Ave South and Railway Line	Level pavers to entry point 	Seniors access point to Aged Care Centre	3	\$267	SEN	1
8	West side Dandaloo to Second Ave	Level walking surface to service and gutter points 	Trip hazard	5	\$445	SCH REC	2



PAMP 2011 to 2021 ACTION PLAN

NARROMINE

Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
9	Car park service entry at back of Coles	Repair cracking around service entry 	Trip hazard		\$762	SH	2
10	Outside High School on Meringo	Restore level of footpath to meet gate 	Trip hazard/disabled access	2	\$203	SCH	1
11	West side Merulya to Nymagee	Construct new footpath to standard 	Safe and accessible link to Payton Park	1.5 x 214	\$32,528	SCH REC	2



PAMP 2011 to 2021 ACTION PLAN

NARROMINE

Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
12	West side Meringo to Temoin	Construct new footpath to standard 	Safe and accessible link to playing fields and Riverside Recreation Area	1.5 x 95	\$14,440	SCH REC	2
13	West side Nymagee to Burraway	Construct new footpath to standard 	Safe and accessible link to Dundas Park areas	1.5 x 287	\$43,624	SCH REC	2



PAMP 2011 to 2021 ACTION PLAN

NARROMINE



Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
14	Outside Council Building	Supply and install AS Bench seat 	Rest point for seniors and others accessing Council, or walking to shopping area		\$2413	SEN REC SH	2
15	West side Dandaloo – Council Building to Fourth Ave	Grind footpath at marked locations 	Trip hazard	Various locations	\$191	REC SEN	2

PAMP 2011 to 2021 ACTION PLAN

NARROMINE



Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
16	Cnr Dandaloo and Backwater	Repair roadway crossing surface 	Trip hazard		\$2,540	SEN REC	2
17	Intersection Third Avenue and Backwater	Repair roadway crossing surface 	Trip hazard		\$2,540	REC	2

PAMP 2011 to 2021 ACTION PLAN



NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
18	West side Dandaloo outside the Bowling Club	Supply and install AS Bench seat 	Rest point for Seniors and others accessing Hospital		\$2,413	SEN REC DIS	1
19	Cathundral at corner Hospital and Hospital car park	Replace existing bitumen footpath with concrete to standard 	Improved access for Seniors and disabled to Hospital	1.5 x 38	\$5,791	SEN DIS REC	2

PAMP 2011 to 2021 ACTION PLAN



NARROMINE

Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
20	South side Derribong from Merilba	Construct new footpath to standard 	Link to BMX Track	1.5 x 64	\$9,754	SCH REC	2
21	South side of Derribong outside Number 140 to existing footpath	South side of Derribong Street 	Link to Church and BMX Track	1.5 x 44	\$6,706	SCH REC	2


PAMP 2011 to 2021 ACTION PLAN

NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
22	North side Burraway – Meryula to Manildra	Construct new footpath to standard 	Link to Dundas Park	1.5 x 350	\$50,800	REC	2
23	North side Derribong– Manildra to Meryula	Construct new footpath to standard 	Link BMX track to Cycle way	1.5 x 400	\$60,960	SCH REC	2


PAMP 2011 to 2021 ACTION PLAN

NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
24	Crossing on corner West of Dandaloo and Nymagee Street West	Level lip to service points 	Trip hazard	2	\$178	SCH REC	2
25	West side Temoin from Cathundril to Nellie Vale	Construct new footpath to standard 	Link to Cemetery	1.5 x 500	\$76,200	REC	2


PAMP 2011 to 2021 ACTION PLAN

NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
26	North side Nellie Vale from Temoin to Alagalah	Construct new footpath to standard 	Link to Cemetery	1.5 x 170	\$25,908	REC	2


PAMP 2011 to 2021 ACTION PLAN

NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
27	West side Alagalah – Dappo Road to past cemetery	Construct new footpath to standard 	Link to Cemetery	1.5 x 180	\$27,432	REC	2

PAMP 2011 to 2021 ACTION PLAN

NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
28	East side Dandaloo between Ellengerah and Meringo	Grind and level footpath at various marked locations 	Trip hazard	Various locations	\$190	REC	2

PAMP 2011 to 2021 ACTION PLAN



NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
29	West side of Dandaloo	Remove pedestrian ramp and restore gutter line 	Encourage safe crossing behaviour/ does not link to services		\$1270	REC SH	2

PAMP 2011 to 2021 ACTION PLAN



NARROMINE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
30	South side Second Ave (outside Narromine Transmission)	Fill driveway to meet pathway 	Trip hazard	3	\$254	REC SH	2
TOTAL ESTIMATED COST FOR TOWN OF NARROMINE- PRIORITY ONE WORKS				\$182,668.00			
TOTAL ESTIMATED COST FOR TOWN OF NARROMINE- PRIORITY TWO WORKS				\$317,632.00			
TOTAL ESTIMATED COST FOR TOWN OF NARROMINE – ALL WORKS				\$500,300.00			

PLEASE NOTE: FIGURES SHOWN ARE ESTIMATES ONLY


PAMP 2011 to 2021 ACTION PLAN

TRANGIE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
1	East side Derribong lane entry at Services Club	Repair cracking around service entry 	Trip hazard		\$762	SEN SH REC	1
2	East side Derribong from Belgrove to Showground	Construct new footpath to standard 	Link to Showground area	1.5 x 190	\$13,716	REC	2


PAMP 2011 to 2021 ACTION PLAN

TRANGIE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
3	West side Harris and Dandaloo	Relocate school crossing and ramps to immediate front of Catholic school 	School crossing is not located in front of school. It meets driveways and poses some danger to children		\$6,350	SCH	1
4	Lane way behind Hospital	Construct new footpath to standard along edge of lane way 	Link to Hospital/avoid conflict with vehicles using lane way	1.5 x 205	\$31,242	REC DIS	1

PAMP 2011 to 2021 ACTION PLAN

TRANGIE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
5	Goan Street outside pool to Caravan Park	Construct new footpath to standard	Link to pool and Caravan Park	1.5 x 104	\$15,850	REC SCH	1
6	Corner Narromine and Dandaloo on east side	Replace kerb ramp 	Gradient too steep for mobility impaired people		\$1,270	DIS	1
7	East side Dandaloo between mower and secretarial services shops	Replace existing 3.8 m bitumen footpath with concrete	Slip hazard	3.8 x 4	\$1,829	REC SH	2

PAMP 2011 to 2021 ACTION PLAN

TRANGIE							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
8	South side Narromine from Dandaloo to John	Construct new footpath to standard 	Link to service centre	1.5 x 65	\$9,906	REC SH	2
TOTAL ESTIMATED COST FOR TOWN OF TRANGIE- PRIORITY ONE WORKS				\$55,474.00			
TOTAL ESTIMATED COST FOR TOWN OF TRANGIE- PRIORITY TWO WORKS				\$25,451.00			
TOTAL ESTIMATED COST FOR TOWN OF TRANGIE- ALL WORKS				\$80,925.00			

PLEASE NOTE: FIGURES SHOWN ARE ESTIMATES ONLY

PAMP 2011 to 2021 ACTION PLAN

TOMINGLEY							
Item Number	Location	Work item description	Reasons for Works	Length in metres	Estimated Cost	Facility User Group	Priority 1 or 2
1		Build footpath to standard	Link bus stop to BP	168	\$25,536.00	REC	2
TOTAL ESTIMATED COST FOR TOWN OF TRANGIE- PRIORITY ONE WORKS				\$25,536.00			
TOTAL ESTIMATED COST FOR TOWN OF TRANGIE- PRIORITY TWO WORKS				\$			
TOTAL ESTIMATED COST FOR TOWN OF TRANGIE- ALL WORKS				\$25,536.00			

15 RECOMMENDATIONS

It is recommended that Council consult with the Roads and Traffic Authority to ascertain funding viability for a staged implementation of pedestrian works over the next ten years, as identified in the PAMP.

Works should commence in priority order, with those identified Priority One (affecting school children, seniors and mobility impaired people) scheduled prior to all other identified works.

Other specific recommendations provided in this plan are to:

- Ensure all new footpaths constructed provide for a minimum width of 1.5 metres to allow wheelchairs to pass
- Review the results of the Local Environment Plan, when completed to ascertain potential to provide a signposted "town walk" for recreational and visiting users
- Upgrade existing 1.2 metre footpaths to 1.5 metres wide over time, in line with AustRoads recommendations (AustRoads Part 13: Pedestrian)
- Ensure pedestrian facilities identified in the PAMP action plan are constructed to meet the requirements of AS 1428 and AustRoads Part 13, Pedestrian as the standard
- In determining suitable crossing facilities AustRoads Part 13, Section 3 – Treatments for Pedestrians Crossing Roads should be used as a guide
- Consider that pedestrians integrate with traffic and bicyclists across the road space when allocating future funding
- Ensure future pedestrian works are completed in concrete and asphalt, and replace existing bitumen and gravel footpaths over time
- Retain existing colour schemes in future paving works in town centres to assist sight impaired people
- Continue to implement the Street Light Project to ensure placement of lights mid block and at all intersections
- Instigate a six-monthly footpath sweeping program to remove loose gravel and other objects that can cause pedestrians to slip and trip
- Implement road safety education and enforcement activities for pedestrians in Narromine and Trangie as a component of Council's road safety five-year strategy.

16 REFERENCES

- Active Australia *Simply Active Every Day – A Plan to Promote Physical Activity in NSW*
- AustRoads *Guide to Traffic Engineering Practice Part 13: Pedestrians*
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- Narromine Shire Council *Narromine Shire Bikeplan 2001*
- Narromine Shire Council *Narromine Mobility and Access Map 2003*
- Narromine Shire Council *Narromine Shire Passenger Transport Strategic Plan - A Strategy for Improving the Passenger Transport Service – Narromine and Trangie 2003*
- Narromine Shire Council *Social Community Plan 1999 – 2004*
- Narromine Shire Council *Social Community Plan 2005 – 2009*
- Narromine Shire Council *Trangie Mobility and Access Map 2003*
- NSW Country Road Safety Summit Pedestrian Issues Paper May 2004 Roads and Traffic Authority
- NSW Health *NSW Healthy Aging Framework 1998 – 2003*
- Riches D *Older and Disabled Pedestrian Safety 2002*
- Roads and Traffic Authority *Building on Successes – Making New Gains RTA Sydney 2002*
- Roads and Traffic Authority *How to Prepare a Pedestrian Access and Mobility Plan March 2002*
- Roads and Traffic Authority *Road Traffic Accident Database for Narromine Shire (1998 – 2002) 2002*
- Roads and Traffic Authority *Road Safety 2010 A Framework for Saving 2,000 Lives By The Year 2010 In New South Wales 2000*
- Roads and Traffic Authority *Road Accidents in New South Wales 2001 2003*

17 ACKNOWLEDGEMENTS

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Mick Bell	Manager of Community Facilities
Gai Wilson	Councillor
Prue Brit	Roads and Maritime Services
John Edmunds	Local Bus Driver
Sandra Edmunds	Timberbongie

PLEASE NOTE – All care and consideration has been included in this document however, there may be changes carried out as demands of the population changes.

This plan will be reviewed on an ongoing basis to enable the Narromine Shire Council to better facilitate improvements.