

Appendix A - Public Art Concept and Ideas



Public Art Concept and Ideas
Ashfield Town Centre Public Domain Project
Supporting Master Planning Opportunities Process
November 2014



The Runner, by artist Faith Bebbington, Liverpool



Love Letter from Berlin project



Atlanta City, USA

1. The aim of this document

The aim of this document is to assist Council with briefing Conybeare Morrison to incorporate Public Art into the Ashfield Town Centre Public Domain Project Master Planning Opportunities Process. This document will not dictate what type of art or medium, but will provide a framework for an approach to Public Art. It will also identify possible sites within the Town Centre Public Domain concepts presented by Conybeare Morrison to date, and suggest possible examples for these sites.

2. Overall Concept – ‘Ashfield a Contemporary Public Art Destination’

The Ashfield Town Centre has the potential to become a *Contemporary Public Art* destination if Council is willing to dedicated appropriate resources to this concept. The program should be about engaging professional contemporary artists to tender for, and present design concepts for identified sites in response to well defined and developed project briefs. If Council manages this process well there is potential to promote Ashfield as a 'destination', monopolising on it's proximity to the CBD, and it's transport hub status.

3. The Ideas

Ashfield Town Centre becomes home to iconic contemporary Public Art by building a Public Art trail throughout the town centre that includes art that is:

- Designed and realised by professional and high profile artists
- Highly visible (e.g. potential for artwork to be viewed by passengers in passing trains)
- Interactive
- 2D & 3D installations using a range of mediums e.g neon, video projections, lighting installations, murals, sculpture, performance etc
- A combination of permanent, temporary and ephemeral works
- Culturally appropriate and celebrates the LGA's cultural diversity

4. Process

If Council approves the concept it will require a well developed approach to the process that includes:

- An open and creative approach that requires an element of risk
- Appropriate budget dedicated to the program
- Establishment of a panel of external experts
- Well developed EOI process targeting high profile contemporary artists. EOI to be developed by experienced staff to ensure the essence of the LGA is encapsulated e.g. cultural diversity and relevance
- Support of additional internal resources to ensure Council has the capacity to roll out an iconic Public Art program

Appendix A - Public Art Concept and Ideas

5. Murals

There are a series of existing murals in the Ashfield Town Centre as marked with a ★ in the attached Conybeare Morrison Map. The artwork is rather dated, and some require major maintenance. Community Programs is recommending the following options:

- Option 1 - Maintenance and repair existing murals
- Option 2 – Develop a new concept brief for these walls, and engage new artists to create more contemporary and relevant pieces

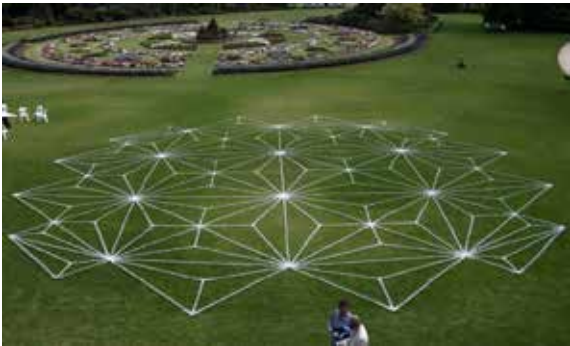
5. Conybeare Morrison Map

Community Programs have identified sites for public art installations shown on the following map.

- ★ Murals
- ⊙ 3D installation/sculptures
- ▲ Installation on ground as part of road and/or footpath treatment
- X Lighting installation

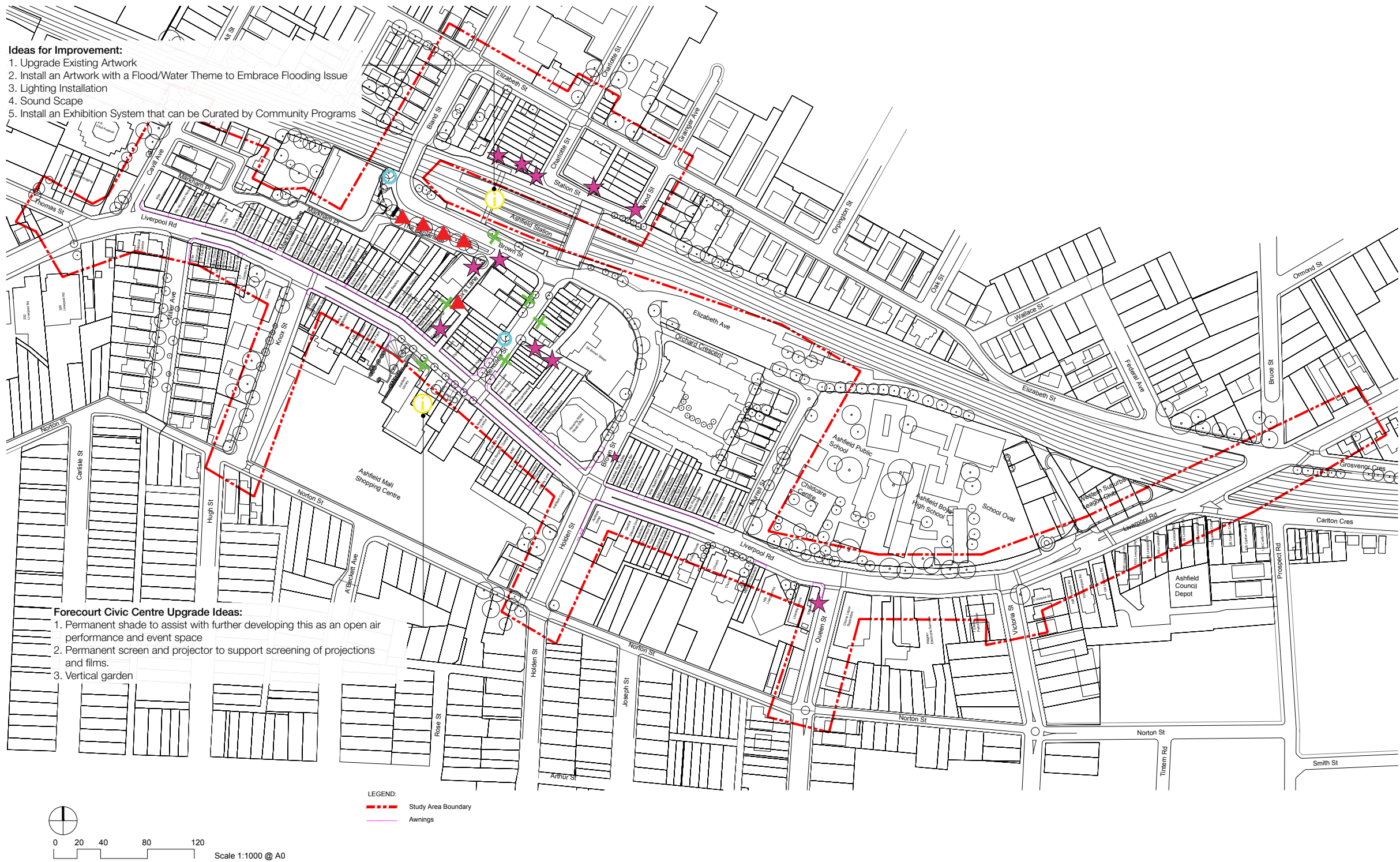
6. EXAMPLES to assist with suggestions made on page 3 of attached Conybeare Morrison map

Esplanade – Site-specific art work as part of the pavement and/or road treatment



City of Sydney has recently engaged artist Kerrie Polliness to create a site specific work for the Green Square redevelopment

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Perhaps an artistic impression of a traditional game could work ?

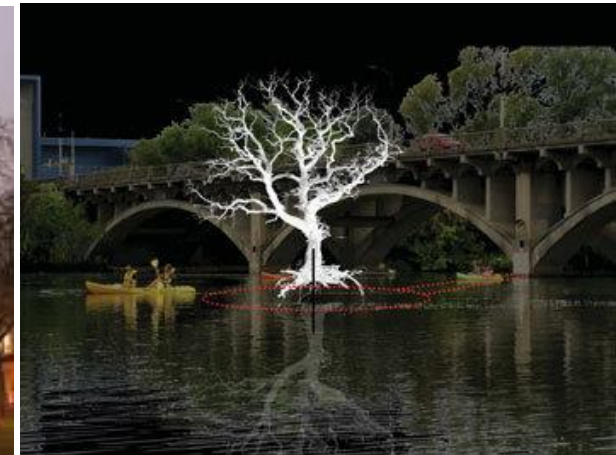
Illusions – road treatments



Perhaps 'Fox' artwork in fox lane could be an illusion?



Light Installations in trees in Hercules Street, in the Civic Centre Forecourt and Brown Street



Appendix A - Public Art Concept and Ideas

Iconic site-specific 3D art work on the deck at the end of the Esplanade



Large mural on wall on building at the exit of the underline tunnel



Purpose Built structure for curated 2D works



Newtown Art seat



Appendix A - Public Art Concept and Ideas

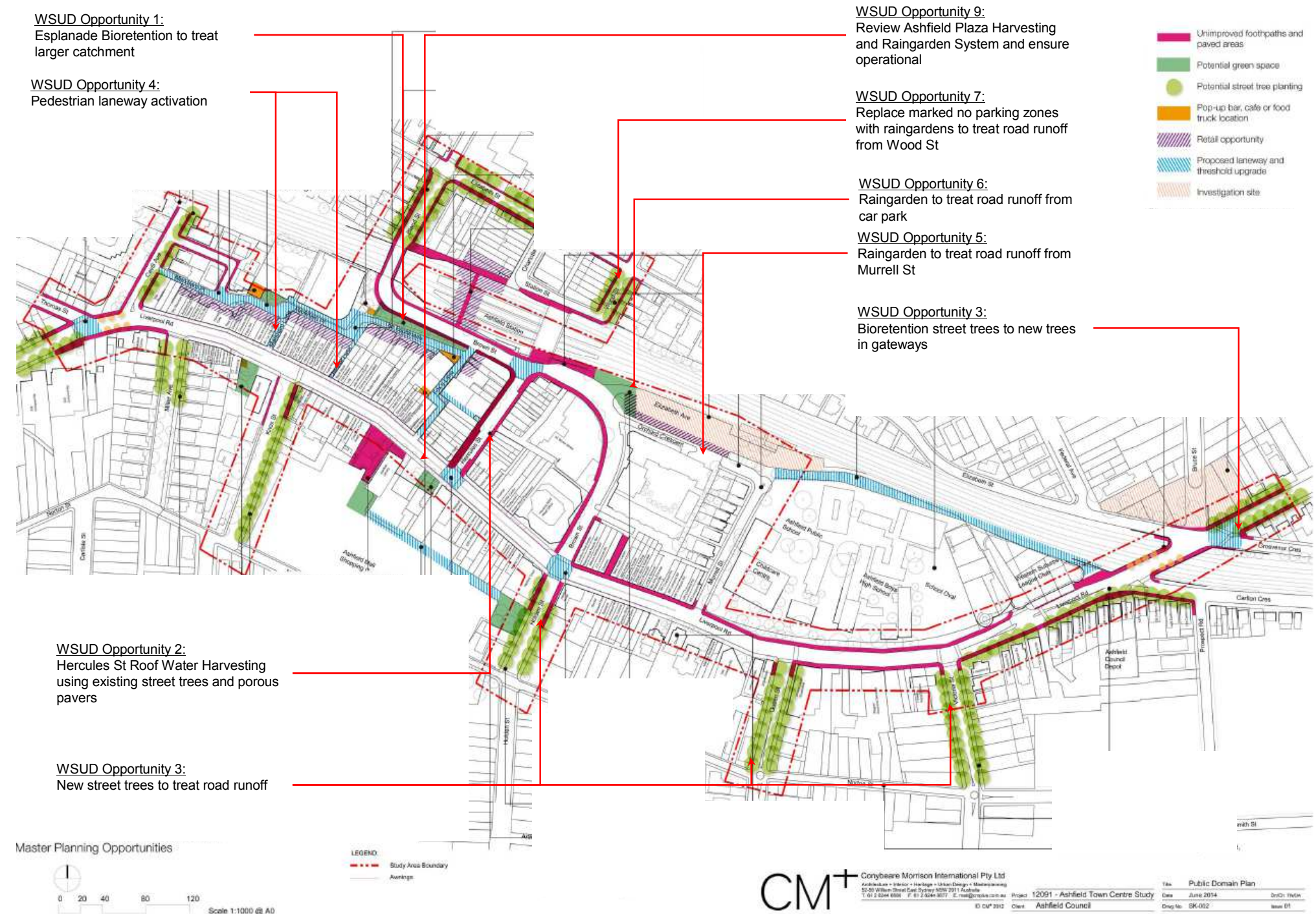
Water theme in underline



More contemporary murals/street art



Appendix B - WSUD Opportunities Study (Alluvium)



Esplanade WSUD Opportunities
(Baseplan supplied by Conybeare Morrison)

alluvium

Appendix B -WSUD Opportunities Study (Alluvium)

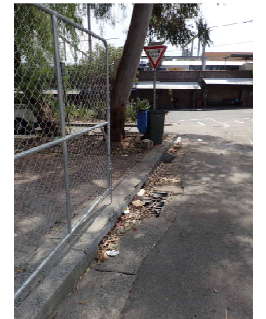


Fox's Lane has been identified as a key opportunity in town centre renewal. As Fox's Lane is in the catchment area of the raingarden and because Fox's Lane is relatively constrained, Fox's Lane does not need to incorporate any WSUD opportunities. Note that porous pavers would not be required to be installed inside this catchment area either (including on the Esplanade).

Existing raised garden bed between Brown St and The Esplanade is a potential opportunity for a raingarden to treat a larger catchment area. Trees are located at the Esplanade level and may have tree roots in the garden bed which would limit opportunities for raingardens.



A catchment area of approximately 8,500 m², 100% impervious can be diverted into the raingarden along the Esplanade. This catchment is drained by three pits at the eastern, western and central part of the Esplanade. These three pits would be diverted into the raingarden. The eastern pit at the intersection of Fox's Lane and The Esplanade is shown in the image on the right



The raingarden required to treat the catchment is 130 m². The total potential footprint available is approx 300m². A precedent image of a raingarden situated along a wall at Pirrama Park in Pyrmont is shown here. This raingarden similar to that proposed at Ashfield as it diverts water from a larger local catchment into the raingarden, before storing it for reuse for irrigation.



Esplanade WSUD Opportunities
Raingarden
 (Baseplan supplied by Conybeare Morrison)

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Appendix B -WSUD Opportunities Study (Alluvium)



A roof catchment area of approximately 1,500 m², 100% impervious can be diverted into passively irrigated street trees.

Note that this option can be applied and is recommended for further investigation wherever new paving is going in next to existing trees in the streetscape. If combined with repaving works this options is a very cost effective way of treating and irrigating street trees. It could be developed as a standard detail for any new paving or footpath works for Council to apply.



Hercules St has a number of existing street trees as well as awnings and roofs which drain to the street gutter system. It is proposed that in re-paving the Hercules St footpath that the down-pipes (which are just below the surface) are diverted. This has the benefit of treating and infiltrating the roof runoff as well as watering the trees providing for more even growth. As the current trees are not watered this will aid their growth, particularly in dry times.



Abercrombie St, Redfern has recently been upgraded including new paving, seating and other street furniture. As part of the upgrades downpipes from the houses were diverted when the repaving was undertaken. An image of the downpipe diversions during construction is shown in the image above. Leaky PVC pipes are being installed around all the existing trees.

Hercules St WSUD Opportunities
Passively irrigated street trees
 (Base image from Google Maps)

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Appendix B -WSUD Opportunities Study (Alluvium)



In designing new road pavement at Hercules St porous pavers could be installed. Porous pavers are similar to other segmental pavers and pavers need to be selected which are appropriate to the vehicle loadings and frequency of vehicle use. Porous pavers can be designed for heavy vehicle, however vehicle frequency is a major limitation and they are not recommended on roads with high vehicle use. Pavers can be easily cleaned with a standard street sweeper. An example of an installation is in carpark of Newington using Hydroston pavers (photo from Hydrocon). This installation has been operating successfully for approximately 3 years in a well used car park.



A road catchment area of approximately 1000 square metres which is 100% impervious can be treated with porous pavers in Hercules and a portion of Brown St.

As Fox's Lane and Esplanade can be treated in a raingarden, porous pavers are not required in these locations (although they can be still installed in these areas if they are the preferred paving option).

The subsoil conditions at Ashfield Town Centre consist of heavy clays. Heavy clays are not suitable for infiltration and hence water which drains through the paver needs to be laid on a 200 to 300mm bed of porous media with subsoil drainage to collect the treated water and discharge it to the stormwater. An example of the a porous media being laid for porous pavers at Newington is shown below (courtesy of Hydrocon)



Hercules St Porous Pavers
Alluvium November 2014
(Base image from Conybeare Morrison)

Appendix B -WSUD Opportunities Study (Alluvium)



Queen St is a typical example of streets connecting to Liverpool St. It is devoid of any street trees or vegetation at the intersection with Liverpool Street. There exists excellent opportunities to incorporate trees and garden beds into these streets and thereby get more vegetation into the town centre and to use this to treat stormwater runoff and passively irrigate the trees



Where *new* street trees are proposed along side streets including Holden St, Victoria St, Queen St, Knox St, Bland St, Cavill St and Wood St there are good opportunities to design these street trees as stormwater filter street trees. Throughout the town centre the treated water can be discharged back to the stormwater system, after it filters out the pollutants from the road runoff. An example of a high density street tree is shown in Little Bourke St, city of Melbourne. It has a small pit diverting water into the tree.



New street trees have the potential to treat a large portion of the roads in the town centre. An initial estimate is that 15,000m² could be treated in more than 100 new trees and road verge gardens in the town centre.



Where street trees and planter strips are proposed such as along the western gateway there are good opportunities to treat road runoff from Liverpool St. An example of this linear raingarden is shown at the Bourke St Cycleway in Surry Hills on the right. The vegetation that has been incorporated into the cycleway also functions to treat stormwater. Water is diverted from the street into the garden and then treated stormwater is discharged back to the stormwater system.

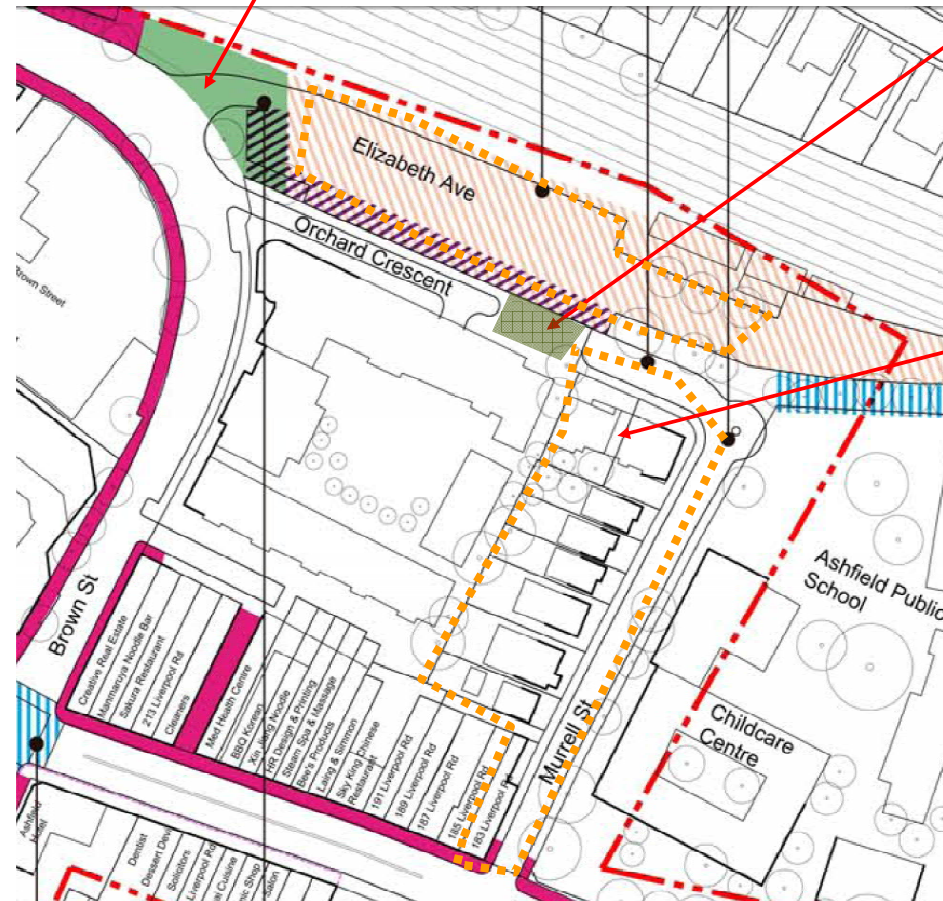


New Street Trees - Gateways and Side Streets
(Base images from Conybeare Morrison)

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Appendix B -WSUD Opportunities Study (Alluvium)

Any proposed new park could incorporate a small raingarden to treat the runoff from the commuter carpark at Ashfield Station. The carpark area of approximately 3,200 square metres could be treated in a small 50 square metre raingarden incorporated into a new park and commuter link.



Potential green space in Orchard Crescent that could be used for treatment of runoff from Murrell St catchment.. This area is currently lawn and is not large enough for passive recreation and hence may be suitable for partial conversion into a raingarden treatment system.

A catchment area of approximately 4,500 m², 80% impervious can be diverted into a raingarden at Orchard Crescent. . This catchment is drained by one pit at the western end of Murrell St. A diversion pit could be installed in this location to divert stormwater into a raingarden.



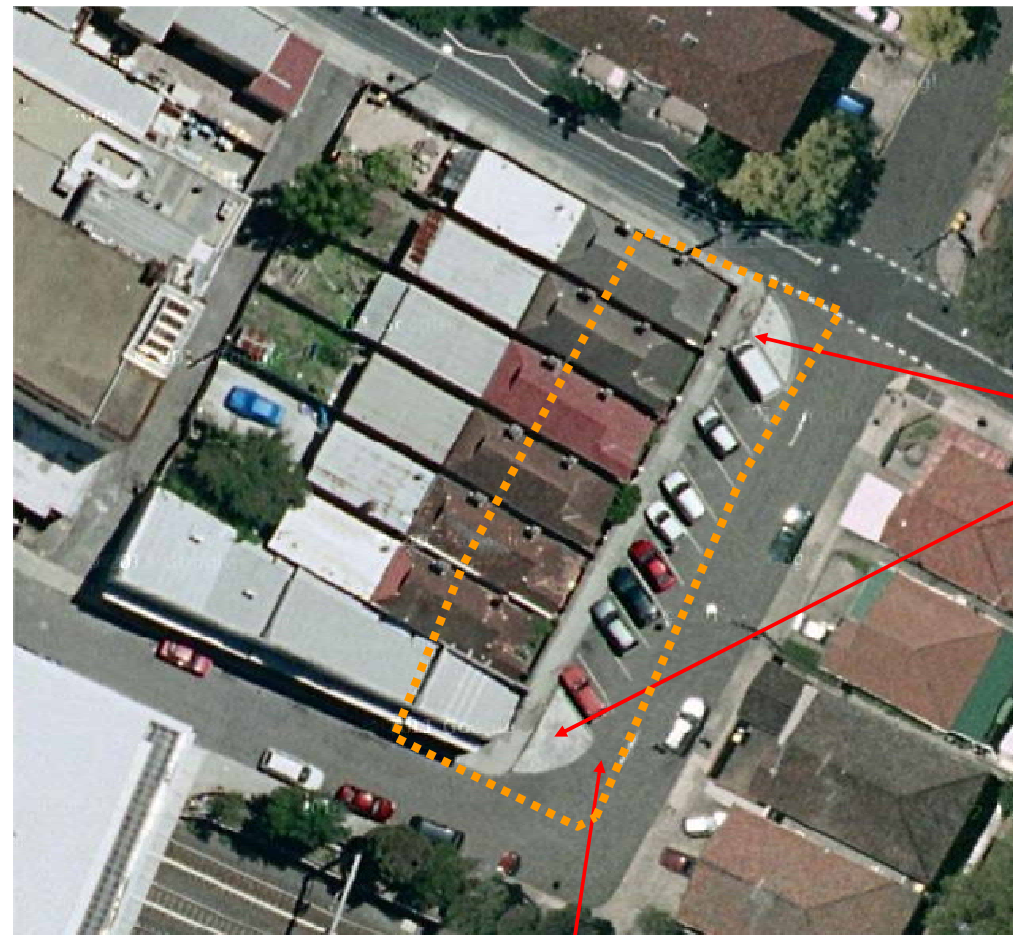
An example of a small raingarden integrated into a small park is shown on the right. This is in a pocket park adjacent to the new Frasers Broadway development at Central. The raingarden has been integrated with the surrounding paving and the small steel poles also incorporate feature lighting as well. The overflow pit can be seen in the foreground.



New Raingardens – Orchard Crescent
(Base image from Conybeare Morrison)

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Appendix B -WSUD Opportunities Study (Alluvium)



A catchment area of approximately 1,100 m², 100% impervious can be diverted into the raingarden on Wood St. The raingarden area available is up to 20 square metres. The treated water would need to be discharged back to the gutter downstream of the raingarden.



Two large areas of existing pavement have been used to define the parking bays and are designated as no parking areas in Wood St. These zones are currently painted areas on the pavement. These could be converted to raingardens to treat the stormwater runoff from the catchment.



An example of a similar streetscape raingarden incorporated into the road pavement is shown in Bay St Ultimo. The raingarden is treating the road and adjacent roof drainage runoff before discharging the water back to stormwater. The additional cost to incorporate a raingarden into a street planter garden is relatively low and.

New Raingardens – Wood St
(Base image from Google Maps)

alluvium

Appendix B -WSUD Opportunities Study (Alluvium)



The catchment area that can be treated in each lane varies from lane to lane, but typically is best undertaken when the roof water from the adjacent building can be incorporated into the hydraulic design of the raingarden.

There are a number of pedestrian lanes that could include substantial lane greening initiatives including new raingardens and potentially green walls or trellises. An example of such a lane is shown on the right at Markham Lane. Other such laneways could also include Besser Lane 'Station St' Lane and to a lesser extent Fox's Lane.



An example of a green lane in Parramatta CBD ("Red Cow Lane") which upgraded 3 years ago to include a new raised pedestrian walkway and a new raingarden adjacent to the walkway on both sides. The raingarden take water from an adjacent aboveground multi-storey carpark and treats this polluted water and discharges it into the stormwater system. This option is only possible where vehicle traffic is not required or is only required to a portion of the lane.



Laneway greening and raingardens
(Base image from Google Maps)

alluvium

Appendix C - ATC Public Domain Tree Selections



Ashfield Town Centre Public Domain Master Planning Opportunities

The following information is provided by Harry Diversi, Trees Overseer, to assist Council in developing ideas for the Ashfield Town Centre Domain Master Plan.

It should be noted that all trees selected are hardy small to medium (less than 10m mature height) species suitable for confined spaces and difficult sites. All cope with pruning well and have proven disease/pest resistance.

Sites by Zone and address

Zone #	Location address	Existing tree species	Issue to be resolved	Suggested tree species.
1	Liverpool Road (west of cnrs Elizabeth St and Grosvenor Cres)	None	<ul style="list-style-type: none">• LV overhead wires (South side)• 4m width footpath• Driveways• Traffic line of sight and traffic light/road sign issues.• Below ground utilities.• Canopy overhang of vehicle lanes.	G or I
2	Railway bridge Liverpool Road	NA	<ul style="list-style-type: none">• LV overhead wires (southside)• 4m width footpath• Hot hostile growing conditions.• Drainage and irrigation issues.• Traffic line of sight and traffic light/road sign issues.• Below ground utilities. Canopy overhang of vehicle lanes.• Maintenance access/WH&S.	NA
3	Liverpool Road and Carlton Crescent	None	<ul style="list-style-type: none">• LV overhead wires (south side)• 4m width footpath	I & G



			<ul style="list-style-type: none">• Driveways.• Hot hostile growing conditions.• Traffic line of sight and traffic light/road sign issues.• Below ground utilities.• Canopy overhang of vehicle lanes.• Maintenance access/WH&S.	
4	Victoria Street (between Norton St and Liverpool Road)	None	<ul style="list-style-type: none">• LV overhead wires (east side)• 4m width footpath• Driveways.• Hot hostile growing conditions.• Traffic line of sight and traffic light/road sign issues.• Below ground utilities.• Canopy overhang of vehicle lanes.• Emergency vehicle access.	B or H
5	Queen Street (between Norton St and Liverpool Road)	4x balled Lilly Pilly, (east side near Liverpool Road)	<ul style="list-style-type: none">• LV overhead wires (east side)• 4m width footpath• Driveways.• Hot hostile growing conditions.• Traffic line of sight and traffic light/road sign issues.• Below ground utilities.• Canopy overhang of vehicle lanes.• Emergency vehicle access.• Shop awnings.	H, E or F
6	Holden Street (between Norton St and Liverpool Road)	None	<ul style="list-style-type: none">• LV overhead wires (east side)• 4m width footpath• Driveways.	G or I

Appendix C - ATC Public Domain Tree Selections



			<ul style="list-style-type: none"> Hot hostile growing conditions. Traffic line of sight and traffic light/road sign issues (south end – east side looking from Norton Street and North end – west side approaching traffic lights). Below ground utilities. Canopy overhang of vehicle lanes. Emergency vehicle access. 	
7	Knox Street	Eastern side only – Melaleuca sp, Callistemon spp, Cinnamomum camphora, Lophostemon confertus West Side - none	<ul style="list-style-type: none"> LV overhead wires (east side) 4m width footpath Driveways - many. Hot hostile growing conditions. Traffic line of sight and traffic light/road sign issues. Below ground utilities. Canopy overhang of vehicle lanes. Emergency vehicle and delivery truck access. 	A or I
8	Miller Avenue	Various – Largerstromea indica, Melaleuca sp, Lophostemon confertus Tristaniopsis laurina	<ul style="list-style-type: none"> LV overhead wires (east side) 4m width footpath Driveways. Hot hostile growing conditions. Traffic line of sight and traffic light/road sign issues. Below ground utilities. Canopy overhang of vehicle lanes. Emergency vehicle access. 	B, C or H



			<ul style="list-style-type: none"> 	
9	Liverpool Road	None	<ul style="list-style-type: none"> LV overhead wires (West side) 4m width footpath – Liverpool Road. Driveways. Hot hostile growing conditions. Traffic line of sight and traffic light/road sign issues – bend in road. Below ground utilities. Canopy overhang of vehicle lanes. Emergency vehicle access. Shop awnings. 	G or I
10	Cavill Street		<ul style="list-style-type: none"> LV overhead wires (West side) 2.5 metre footpath Cavill Ave. Driveways. Hot hostile growing conditions. Traffic line of sight and traffic light/road sign issues. Below ground utilities. Canopy overhang of vehicle lanes. Emergency vehicle access. Shop awnings – Cavill Ave. 	A, C or E
11	Markham Lane	Brachyton acerfolium	<ul style="list-style-type: none"> LV overhead wires (West side) 5m width footpath – Driveways. Hot hostile growing conditions. Below ground utilities. 1 metre from existing buildings. 	C, F or H
12	Bland Street between Elizabeth and the railway line	None	<ul style="list-style-type: none"> LV overhead wires (West side) 4m width footpath – west side 	B, D or F

Appendix C - ATC Public Domain Tree Selections



			<div>Road, 2.5 metre footpath – east side.</div> <ul style="list-style-type: none">• Driveways.• Hot hostile growing conditions.• Traffic line of sight and traffic light/road sign issues.• Below ground utilities.• Canopy overhang to railway easement.• Canopy overhang of vehicle lanes.• Emergency vehicle access.	
13	Elizabeth Street (between Bland and Charlotte Street's)	Lophostemon confertus - South side only.	<ul style="list-style-type: none">• LV overhead wires (South side)• 2.5m width footpath.• Driveways.• Hot hostile growing conditions.• Traffic line of sight and traffic light/road sign issues.• Below ground utilities.• Canopy overhang of vehicle lanes.• Emergency vehicle access.• Shop awnings – Cavill Ave.	A, B or H
14	Wood street	None	<ul style="list-style-type: none">• LV overhead wires (both sides)• Narrow 2.5 metre footpaths both sides.• Driveways.• Hot hostile growing conditions.• Traffic line of sight and traffic light/road sign issues,• Vehicle overhang of footpath.	A, B, F or H



			<ul style="list-style-type: none">• Below ground utilities.• Canopy overhang of vehicle lanes.• Emergency vehicle access.	
15	Brown Street	Pyrus calleryana "Capital" (west side) Tristaniopsis laurina (east side)	<ul style="list-style-type: none">• 4m width footpath• Driveways.• Hot hostile growing conditions.• Traffic line of sight and traffic light/road sign issues.• Below ground utilities.• Canopy overhang of vehicle lanes.• Emergency vehicle access.• Shop awnings.	A or H

Appendix C - ATC Public Domain Tree Selections



Photographs of Potential Tree Species

Deciduous exotic trees species



Species A = *Pyrus calleryana* 'Capital' -



Species B = *Lagerstroemia* 'Indian Summer' natchez



Species C = *Koelreutaria paniculata*



Evergreen exotic trees species



D = *Magnolia grandiflora* "Exmouth"



E = *Gordonia axillaris*



F= *Tibouchina* 'Alstonville'

Appendix C - ATC Public Domain Tree Selections



Evergreen Australian native trees species



G = *Brachychiton acerifolia*

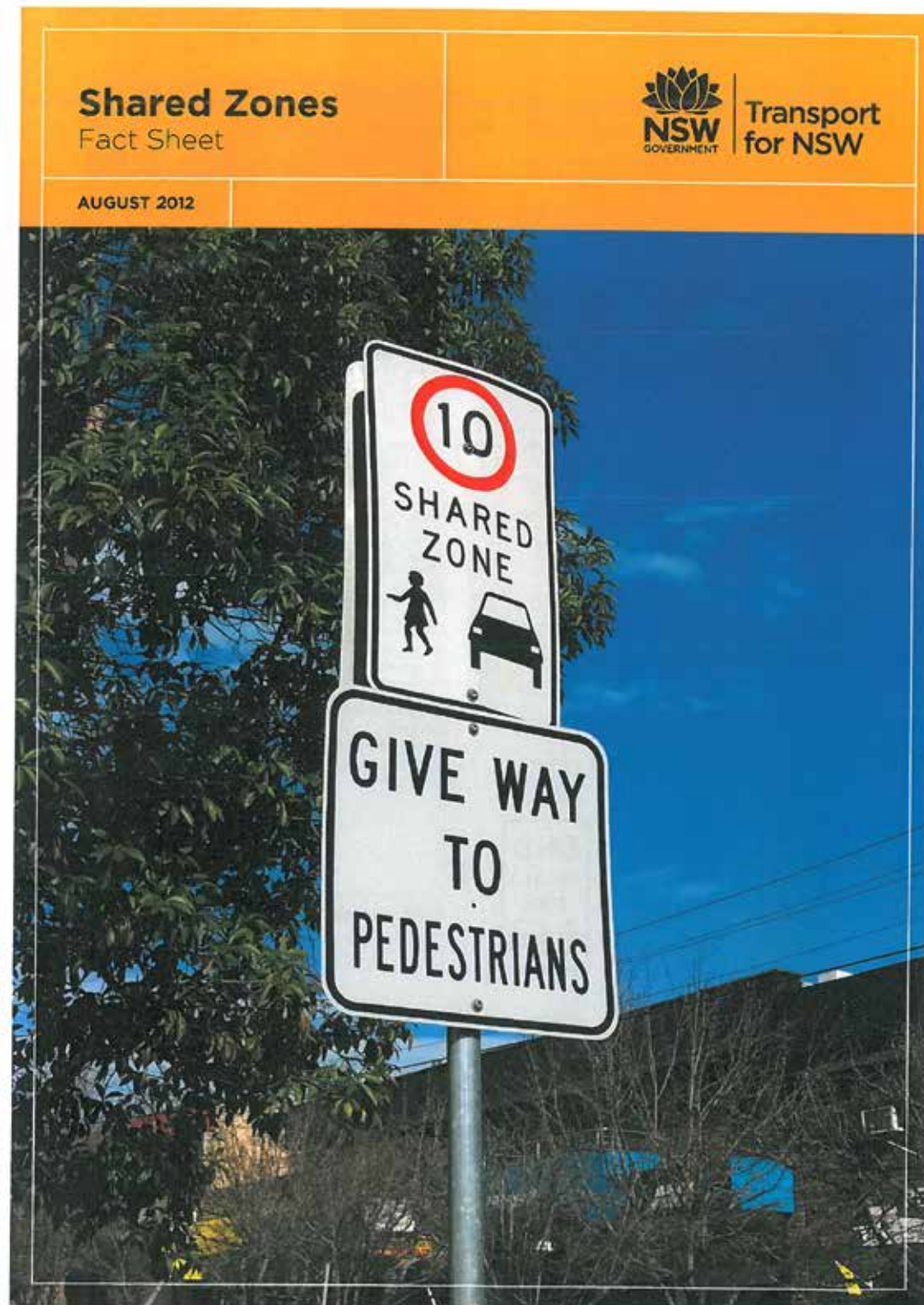


H = *Tristaniopsis laurina* 'Lucius'



I = *Corymbia citriodora* 'scentuous' – dwarf grafted.

Appendix D - Shared Zones and HPAA Fact Sheets



What is a Shared Zone?

A Shared Zone is a road or network of roads where the road space is shared safely by vehicles and pedestrians. The maximum speed limit is always 10 km/h.

There may be no road lines, kerb or gutter in a Shared Zone to show that pedestrians and vehicles are equal. Drivers must give way to pedestrians at all times.

Vehicles can only stop in a Shared Zone if they obey the parking signs and park in marked bays, if they are provided. Drivers traveling at a lower speed are better able to control their vehicles and safely avoid impact with other road users.



Why 10 km/h?

In keeping with the Safe System approach to road safety adopted in NSW, speed limits are set to reflect the risk to road users and be more forgiving of human error.

10 km/h is close to the walking speed for most pedestrians. Pedestrians are particularly vulnerable in the road environment. Unlike the occupants of vehicles, they have no protection. They can also be difficult to see and their behaviour may be unpredictable, making it difficult for drivers to avoid them.

How are these zones created?

Shared Zones reflect local needs and where quality of life takes precedence over ease of movement. Roads and Maritime Services (RMS) has installed Shared Zones in areas with high levels of pedestrian activity.

Local councils, in partnership with RMS, design and install shared zones in accordance with the Transport for NSW Shared Zone Guidelines.

How will I know a Shared Zone?

A Shared Zone looks different. The street environment makes drivers and pedestrians aware of the different driving conditions.



Signs like this are used to clearly define the beginning of a Shared Zone.



A sign like this is installed on each exit road from the zone.



You'll see different surface texture and traffic calming features, such as raised threshold.

Pedestrian safety

Transport for NSW, RMS and local councils are strongly focused on pedestrian safety. They recognise that everyone is a pedestrian at some time and should be able to walk safely.

The establishment of Shared Zones is part of a strategy to reduce the incidence of injury and death among pedestrians.

Changing the way streets are used improves the quality of life. Streets become places for people, not just traffic.



Comments

The success of a Shared Zone depends on community involvement and participation during their development and operation.

Send your comments to:

Council

Attach Council details for comments.

Roads and Maritime Services

Website: www.rms.nsw.gov.au
Phone: 13 22 13
Mail: Locked Bag 928
North Sydney NSW 2059

For more fact sheets on speed management, visit saferroadsnsw.com.au

Transport for NSW

For further enquiries
13 22 13

The information in this brochure is intended as a guide only and is subject to change at any time without notice. It does not replace the relevant legislation.

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rms.nsw.gov.au

August 2012
TfNSW 12-041

Appendix D - Shared Zones and HPAA Fact Sheets

Safer Speeds Policy & guidelines



PUBLISHED JULY 2012 | VERSION 1.0

SS/12/01

Shared Zones

1 Policy Statement

This document provides the policy and the guidelines for the identification and installation of Shared Zones so that pedestrians and vehicles share that road space safely.

This document is part of policy and guidelines promoting safer speeds that are set at a level more forgiving of human error and reflecting risk to road users.

Other policy and guidelines under this series are:

- NSW speed zoning guidelines
- 40 km/h speed limits in high volume pedestrian areas.

2 Scope and coverage

This document aims to assist the road safety practitioners in Roads and Maritime Services (RMS) and in local councils to assess, design and implement Shared Zone schemes on NSW roads.

It helps practitioners to identify the road and traffic issues that need to be considered in designing and implementing the Shared Zones. One of the key requirements of Shared Zones is that they are attractive and interesting places that reflect local needs and activities. The policy is therefore to be interpreted with some flexibility, and is not intended to limit the creativity of designers. Implementation of this policy must go hand in hand with community involvement and participation.

This document must be read in conjunction with the relevant RMS Supplements and the Austroads Guide to Traffic Management Part 8: Local Area Traffic Management. If there are any differences in practice between these documents, the RMS Supplements will apply.

This policy does not include advice on the installation of School Zones and 40 km/h High Pedestrian Activity Areas. These are covered in the relevant Transport for NSW and Roads and Maritime Services documents.

Transport for NSW

Level 4, 18 Lee Street, Chippendale NSW 2008
PO Box K659 Haymarket NSW 1240
www.transport.nsw.gov.au | (02) 8202 2200

1 (12 pages)

3 Purpose

The purpose of this policy is to ensure consistency in design and implementation of Shared Zone schemes across NSW so that the proposed Shared Zone schemes:

- are safe for all road users, particularly pedestrians
- reduce the risk of crashes between vehicles and pedestrians
- require lower vehicle speeds
- enhance the quality of the street environment.

4 Shared Zone

- A Shared Zone is a road or network of roads where the road space is shared by vehicles and pedestrians (NSW Road Rule 24).
- All Shared Zones in NSW must display a speed limit of 10 km/h. No other speed limit is allowed.
- Drivers must give way to pedestrians at all times (NSW Road Rule 83). A 'Shared Zone' sign in combination with 'Give Way to Pedestrians' sign must be installed on each entry road into the area.
- An 'End Shared Zone' sign must be installed on each exit road from the area.
- Pedestrians must not cause a traffic hazard by moving into the path of a driver and must not unreasonably obstruct the path of any driver or another pedestrian (NSW Road Rule 236).
- A driver must not stop in a Shared Zone unless the driver stops in accordance with a parking control sign; or in a parking bay; or dropping off or picking up passengers or goods; or the driver is engaged in the door to door delivery or collection of goods, or in the collection of waste or garbage (NSW Road Rule 188).
- If 'Parking in Bays Only' signs are used, they must be installed on each entry road in the area. Where permissive parking control signs are used, they must be installed in accordance with standard practice.
- The street environment of a Shared Zone must ensure that the drivers and pedestrians are made aware that they are entering a location that has different driving conditions.
- In Shared Zones any delineation, kerb and gutter shall be removed to enhance the sense of equality between pedestrians and vehicles, and to ensure that the Shared Zone is a road related area under NSW legislation.
- In special circumstances, kerbs and gutters may be retained, but only if approved by RMS. In such cases the existing footway must be treated so that it cannot be used by pedestrians to ensure that the existing road becomes a road related area.

5 Roles and responsibilities

Shared Zones are generally installed on local roads and the council will have the responsibility for the design of Shared Zones. However, the authorisation of a Shared Zone is not delegated to councils. Shared Zones are speed limits and approval to install them must be obtained from RMS prior to implementing this policy.

Kerbs and gutters may be allowed to remain in a Shared Zone but only if approved by RMS (See Figure 2).

Traffic control devices (for example, signs and markings for which the policy and guidelines are prescribed in this document) referred to in this document shall meet RMS specifications.

Shared Zones | July 2012

2 (12 pages)

Appendix D - Shared Zones and HPAA Fact Sheets

6 Definitions

Shared Zone

A Shared Zone is a road or network of roads with a 'Shared Zone' sign displayed on each road leading into the area and an 'End Shared Zone' sign displayed on each road out of the area. Drivers must give way to pedestrians at all times (See Section 4 for details).

Speed limit

The maximum legally permissible driving speed along a specific section of road, as defined by the NSW Road Rules and the *Road Transport (Safety and Traffic Management) Act 1999*.

Speed zone

A length or an area of road along which a signposted regulatory speed limit applies.

Traffic control device

A traffic sign, road marking, traffic signals, or other device, to direct or warn traffic on, entering or leaving a road that is prescribed by the regulations.

Road

A road is an area that is open to or used by the public and is developed for, or has as one of its main uses, the driving or riding of motor vehicles.

Road related area

A road related area is any of the following:

- an area that divides a road
- a footpath or nature strip adjacent to a road
- an area that is not a road and that is open to the public and designated for use by cyclists or animals
- an area that is not a road and that is open to or used by the public for driving, riding or parking vehicles.

Default urban speed limit

Statutory speed limits that apply in the absence of a signposted speed limit in a built-up area. The default speed limit in a built-up area is 50 km/h.

Local roads

All public roads for which a council is the roads authority other than State or regional roads. They comprise the local access and circulation roads which are managed and funded by councils. These roads have a primary function of providing direct access to abutting properties.

May, must, shall, should

May	Indicates the existence of an option, which is not mandatory. Mandatory requirements may, however, apply to a particular option once it is selected.
Must	Indicates that the statement is mandatory.
Should–	Indicates a recommendation.
Shall	Indicates that the statement is mandatory.

7 Objectives and features

Table 1 outlines the objectives and main features of a Shared Zone.

TABLE 1: OBJECTIVES AND FEATURES OF SHARED ZONES

Features	Shared Zones
Objectives	<ul style="list-style-type: none"> • Provide priority for pedestrian movements • Reduce the dominance of vehicles along the street • Achieve lower vehicle speeds • Reduce severity of pedestrian injuries from crashes • Improve amenity for pedestrians • Enhance the quality of the street environment
Legal priority	<ul style="list-style-type: none"> • Pedestrians have priority • Drivers must give way to pedestrians • Pedestrians must not cause a traffic hazard by moving into the path of a driver and must not unreasonably obstruct the path of any driver or another pedestrian
Speed limit	10 km/h
Benefits	<ul style="list-style-type: none"> • Increases safety for pedestrians and cyclists • Creates a lower speed environment • Improves amenity without affecting access • Alerts drivers to a different street environment • Encourages a modal shift towards walking and cycling • Creates a more socially inclusive street environment
Appropriate locations	<ul style="list-style-type: none"> • Low traffic volume streets with high pedestrian activity • Where there is a need to provide permanent pedestrian priority in a street segment • Areas with a low demand for vehicular movement such as cul de sacs • Areas where there is either limited or no formal pedestrian areas such as footpaths • Lanes and streets in central business districts, selected residential areas and shopping centres • Narrow streets where pedestrians are forced to travel on the road
Non-appropriate locations	<ul style="list-style-type: none"> • Roads with high traffic volumes • Roads where prevailing vehicle speeds are high • Street lengths with notable cross vehicle traffic within the zone

Appendix D - Shared Zones and HPAA Fact Sheets

8 Design method

Shared Zones are generally installed on local roads and the council will have the responsibility for the design of Shared Zones.

8.1 DESIGN PHASES

The design process shown in Figure 1, below, must be followed when considering Shared Zones.

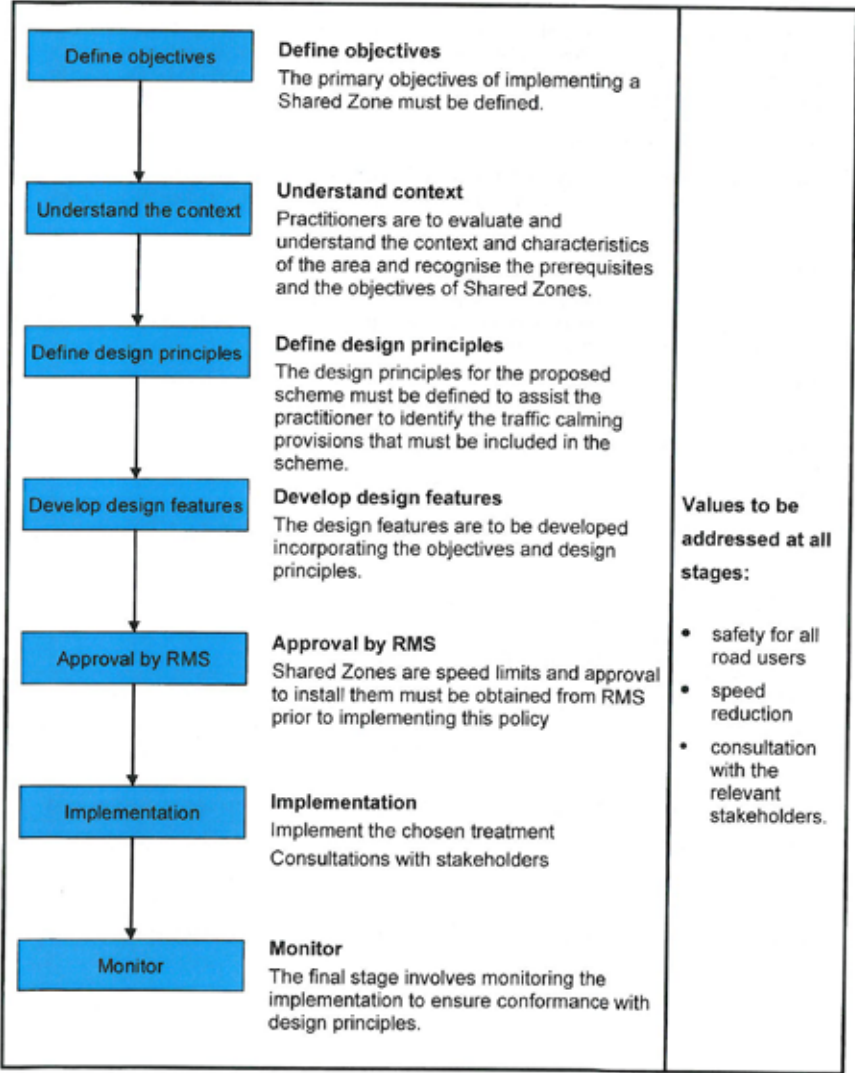


FIGURE 1: DESIGN APPROACH FOR SHARED ZONES

8.1.1 Define objectives

The primary objectives of implementing a Shared Zone in a high pedestrian activity area must be defined. The objectives include:

- improve pedestrian safety
- achieve significant speed reduction
- reduce conflicts between pedestrians and vehicles
- improve facilities and access for pedestrians
- enhance the quality of the street environment.

It is essential to define the objectives to ensure that the appropriate design features are included in order to achieve these objectives. Some of the defined objectives may be of greater importance in some cases and appropriate design features need to be included to emphasise this importance.

8.1.2 Understand the context

Shared Zones must only be installed at locations that meet specific site conditions. Practitioners are to evaluate each proposed site against these criteria to determine if it is suitable.

Site criteria

The fundamental prerequisite when considering the implementation of Shared Zones is the definition of an area in which there is an acknowledged high level of pedestrian activity and potential pedestrian and vehicle conflict.

The current site conditions are to be assessed against the criteria for Shared Zones as presented in TABLE 2 below.

TABLE 2: SITE CRITERIA FOR SHARED ZONES

Features	Shared Zone
Current traffic flows	≤ 100 vehicles per hour and ≤ 1000 vehicles per day
Current speed limit	≤ 50 km/h
Length of proposed Shared Zone	≤ 400 metres
Current speed limit of adjoining roads	≤ 50 km/h
Current carriageway width	minimum trafficable width of 2.8 metres
Route access	must not be located along bus routes or heavy vehicle routes except delivery or garbage trucks
Streets with narrow or no footpaths	where pedestrians are forced to use the road
Kerbs	kerbs must be removed unless excepted by the RMS (See Section 4)

Figure 2, below, is a flowchart to guide practitioners in assessing sites for suitability as shared zones.

Appendix D - Shared Zones and HPAA Fact Sheets

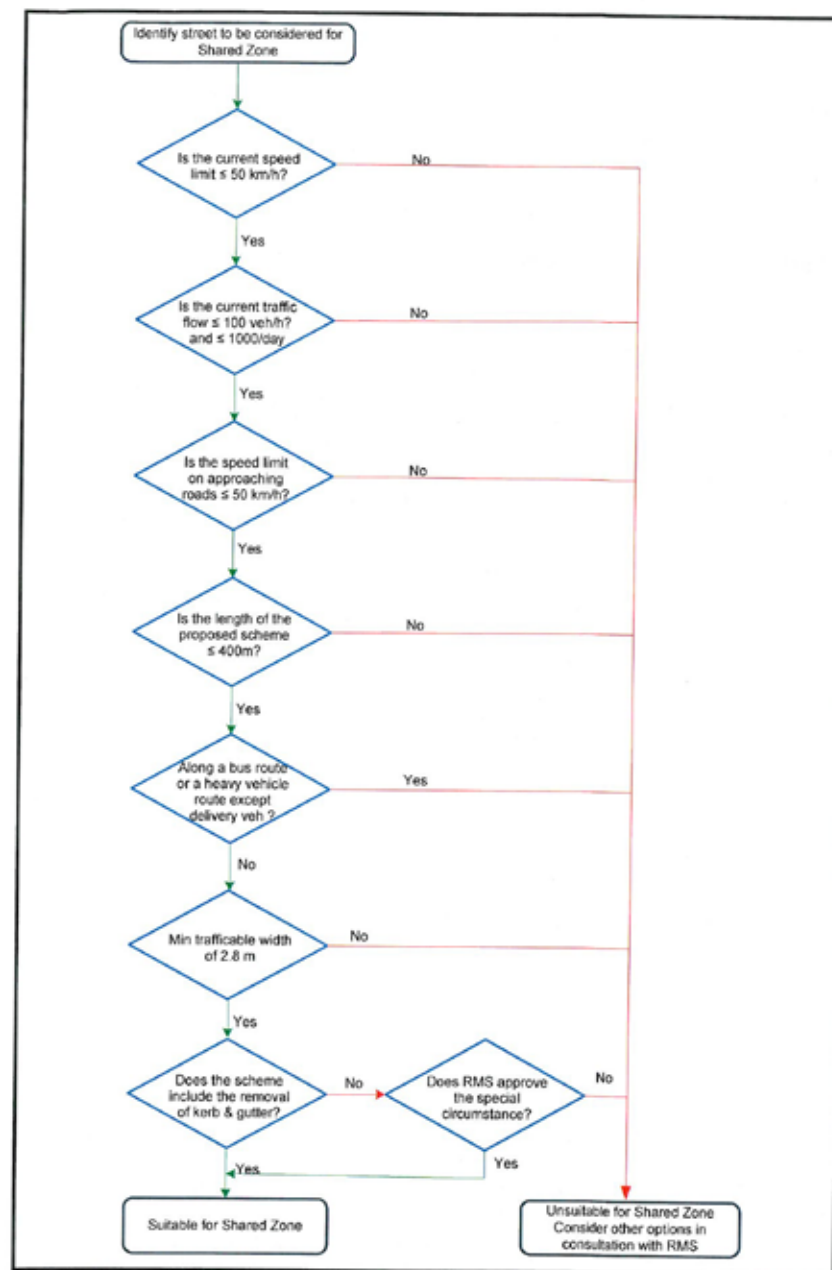


FIGURE 2: FLOWCHART FOR SELECTING SHARED ZONES

8.1.3 Define design principles

The design principles for Shared Zones need to be defined to ensure the proposed scheme incorporates the necessary features to provide traffic calming. In particular, the design needs to have an impact which clearly highlights to drivers that there is a change in the street environment and traffic conditions.

Table 3, below, presents the design principles for Shared Zones.

TABLE 3: DESIGN PRINCIPLES FOR SHARED ZONES

Features	Shared Zone
Street space/kerb and gutter/road	Any delineation, kerb and gutter (unless excepted by RMS) shall be removed to enhance the sense of equality between pedestrians and vehicles, and to ensure that the Shared Zone is a road related area under NSW legislation. Where it is not possible to remove the kerb and gutter then the existing footway must be treated so that it cannot be used by pedestrians to ensure that the existing road becomes a road related area.
Entrance / exit points	<ul style="list-style-type: none"> Prominent features such as signs, architectural or landscape features must be provided to indicate a change in the street environment and highlight the start / end of the scheme. Traffic calming or a suitable treatment must also be provided to reduce speeds within the zone. Other features such as architectural and landscaping may also be provided to enhance the scheme.
Traffic signs	Regulatory traffic signs as per the requirement of NSW Road Rules (See Section 4) are required.
Pavement surface	The pavement surface shall be changed to highlight the difference in the street environment from the surrounding road network. It must be clearly distinguishable by colour, texture and materials.
Distance between traffic calming features/treatments, if needed	≤ 30 m to encourage consistently slow driving.
Forward visibility	<ul style="list-style-type: none"> Restricted forward visibility to encourage drivers to reduce their speeds and approach with care. Straight lengths without traffic calming treatment shall not exceed 50 metres. In locations where it is considered necessary to maintain visibility, a stopping sight distance of 12 metres shall be applied.
Vehicle mix	Alternative diversion routes for large vehicles such as buses (except delivery/garbage trucks) need to be planned.
Vehicle accessibility requirements	<ul style="list-style-type: none"> Designs must safely accommodate emergency vehicles, delivery and garbage trucks. Emergency services and Police are to be consulted during the design process.
Car parking	<ul style="list-style-type: none"> Car parking provisions may need to be altered to suit the scheme. Car parking bays may be marked along the scheme.

Appendix D - Shared Zones and HPAA Fact Sheets

Features	Shared Zone
Bicycles	<ul style="list-style-type: none"> • Cyclists must be able to safely traverse the features provided in the schemes to encourage lower vehicle speeds. • Traffic calming measures must incorporate features to make them cycle friendly. • Bicycles must travel at ≤ 10 km/h and must give way to pedestrians.
Mobility and vision impaired requirements	<ul style="list-style-type: none"> • Designs must include provision to safely accommodate the needs of the mobility and vision impaired. • Refer to Standards Australia, AS / NZS 1248.4.1 <i>Design for Access and Mobility</i> for detailed design requirements

8.1.4 Develop design features

The design features for Shared Zones are to be developed taking into consideration the objectives of implementing the scheme. Table 3, above describes the various design features that are to be considered for Shared Zones. The design features are to be chosen to accomplish the objectives of the scheme.

The design features are required to be implemented in accordance with the Austroads Guide to Traffic Management Part 8: Local Area Traffic Management and the relevant RMS Austroads Guide Supplements.

Speed limits

The speed limit for all Shared Zones must be 10 km/h.

Entry / exit points

Table 4, below, describes the options for the features to be used to define the entry and exit points of Shared Zones to ensure pedestrian safety.

TABLE 4. EXAMPLES OF ENTRANCE / EXIT POINT FEATURES FOR SHARED ZONES

Features	Description
Road narrowing / kerb extension	<ul style="list-style-type: none"> Encourages drivers to reduce their speeds when entering the scheme. Highlights to motorists that they are entering an area with changed traffic conditions such as lower speeds.
Raised threshold	<ul style="list-style-type: none"> Encourages lower speeds when entering the street. Clearly indicates the entry to the zone.
Traffic signs	regulatory traffic signs as per the requirement of NSW Road Rules (see Section 4)
Change in carriageway surface and texture	<ul style="list-style-type: none"> Shared Zones shall have a different surface colour and texture to emphasise the change in the street environment. Provides a characteristic that distinguishes the start / end of the scheme.
Architectural and landscaping	<ul style="list-style-type: none"> Assists in creating a visible change in the street environment. Helps to enhance the quality of the scheme. Creates a prominent feature that clearly highlights the start / end of the scheme.

Traffic calming

Traffic calming is not normally needed in Shared Zones. If required, traffic calming measures are described in detail in the Austroads Guide to Traffic Management Part 8: *Local Area Traffic Management*.

Traffic signs

Traffic signs used to prescribe speed limits in a Shared Zone are described in the NSW Road Rules (Section 4) and are illustrated in Figure 3, below (R4-4), Figure 4 (R4-5) and Figure 5 (R2-10). Sign R2-10 must be displayed on all R4-4 signs.

The traffic signs R 4-4 and R 2-10 shall be repeated at regular intervals if needed.



FIGURE 3: START SHARED ZONE TRAFFIC SIGN R 4-4



FIGURE 4: END SHARED ZONE TRAFFIC SIGN R 4-5



FIGURE 5: GIVE WAY TO PEDESTRIANS R 2-10

Landscaping and street furniture

Carefully located landscape features and street furniture can encourage lower speeds. Examples of such features are bollards, architectural decorations and lighting.

Provision for the mobility and vision impaired

The design for Shared Zones is required to include provision to safely accommodate the needs of those who are mobility restricted and vision impaired. Features such as tactile paving, hand rails and the careful placement of landscaping and street furniture must be considered during the design process. The Standard AS / NZS 1248 Design for Access and Mobility contains detailed design requirements and must be referred to during the design process.

Appendix D - Shared Zones and HPAA Fact Sheets

Road safety audit

Road safety audits provide a means of managing road safety by reviewing the scheme design from a road safety perspective. The process involves identifying road safety risks present in the scheme. The project manager must address all the identified deficiencies, prior to construction.

Road safety audits are to be conducted during the design stage and after implementation. The features provided in Shared Zones must be safe for all road users. The road safety audit is required to identify issues pertaining to vehicle speeds and pedestrian safety. This must be completed in accordance with the Austroads Guide to Road Safety Part 6: Road Safety Audits and the relevant RMS Austroads Guide Supplements.

8.1.5 Approval by RMS

The authorisation of a Shared Zone is not delegated to councils. Shared Zones are speed limits and approval to install them must be obtained from RMS prior to implementing this policy.

8.1.6 Implementation

The final stage involves implementing the chosen treatment option on site. Consultations with stakeholders such as the local council, Police, emergency services, public transport companies, delivery / garbage truck operators and local residents and businesses are needed prior to the implementation of the scheme.

Public awareness

In order to gain support for the implementation of a Shared Zone and to ensure compliance with the road rules, it is important for a public awareness campaign to be conducted prior to the operation of the scheme. The concept and detailed design of a Shared Zone must be developed with the participation of the local community, so that any potential conflicts and problems are resolved.

It is the responsibility of council to initiate such a campaign which may include various methods of communication, such as local door knocking, the media, the placement of posters and signs, distribution of brochures and public exhibitions.

8.1.7 Monitor

The implementation of the scheme must be monitored by the design team to ensure that it is consistent with the design objectives and principles.

8.2 ACTION

Shared Zone policy and guidelines are to be adopted from the effective date and applied as the standard practice when installing Shared Zone schemes.

9 Further information

Roads and Maritime Services

W www.rms.nsw.gov.au
RMS Austroads Guide Supplements
Footway Parking Schemes Technical Direction

NSW Legislation

W www.legislation.nsw.gov.au
Road Transport (Safety and Traffic Management) Act 1999
Road Rules 2008

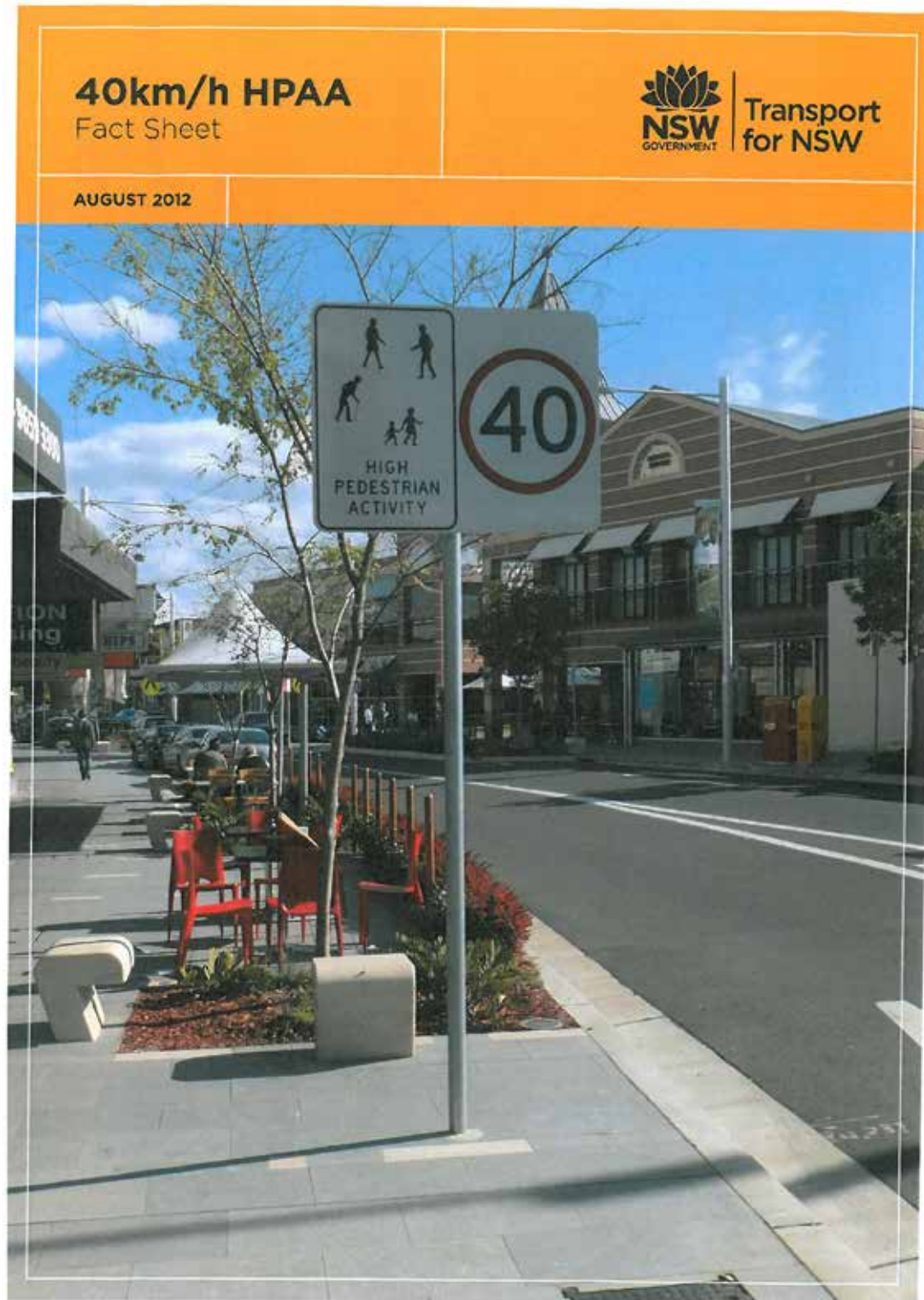
Austroads Standards

W <http://www.austroads.com.au/>
Austroads Guide to Road Safety Part 6: Road Safety Audits
Austroads Guide to Traffic Management Part 8: Local Area Traffic Management.

Standards Australia

W <http://www.standards.org.au>
AS / NZS 1248.4 1 Design for Access and Mobility

Appendix D - Shared Zones and HPAA Fact Sheets



40km/h HPAA Fact Sheet



AUGUST 2012

What is a 40km/h High Pedestrian Activity Area(HPAA)?

These are areas of high pedestrian activity, near shopping strips, railway stations, bus interchanges, beach-sides and services such as medical centres. The maximum speed limit is 40km/h at all times. The different road environment helps to alert drivers to the lower speed limit and makes them aware of the presence of pedestrians moving about or near the road. This creates a safer road environment for all road users, particularly for pedestrians, cyclists and children.



There may also be other features such as pavement markings, road hump, pedestrian refuge and kerb extension.

Pedestrian safety

Transport for NSW, Roads and Maritime Services (RMS) and local councils are strongly focused on pedestrian safety. They recognise that everyone is a pedestrian at some time and should be able to walk safely.

40 km/h High Pedestrian Activity areas are part of a strategy to reduce the number and severity of crashes. They have been introduced since 1991 as part of Local Area Traffic Management schemes.

Changing the way streets are used in town centres improves the quality of life. They become places for people, not just traffic.

Comments

The success of a 40km/h HPAA depends on community involvement and participation during their development and operation.

Send your comments to:

Council

Attach Council details for comments.

Roads and Maritime Services

Website: www.rms.nsw.gov.au
Phone: 13 22 13
Mail: Locked Bag 928
North Sydney NSW 2059

For more fact sheets on speed management, visit saferroadsnsw.com.au

Why 40 km/h?

Managing speed, in accordance with safe system principles, is a key component in managing pedestrian safety. Research and scientific analysis show that a pedestrian hit by a car travelling at 40 km/h has twice the chance of surviving the collision than if the car was travelling 50 km/h.

Travelling speeds higher than 40 km/h greatly increases the risk of injury and death to pedestrians.

How is a 40km/h HPAA created?

Local councils, in partnership with Roads and Maritime Services (RMS) design and implement the schemes in accordance with the Transport for NSW (TfNSW) guidelines for 40km/h zones.

How will I know a 40km/h HPAA?

These are schemes where the street environment makes drivers and pedestrians aware of the different driving conditions.



Signs like this are used to clearly define the beginning of a 40km/h zone.



Signs like this are installed on each exit road from the zone.

Transport for NSW

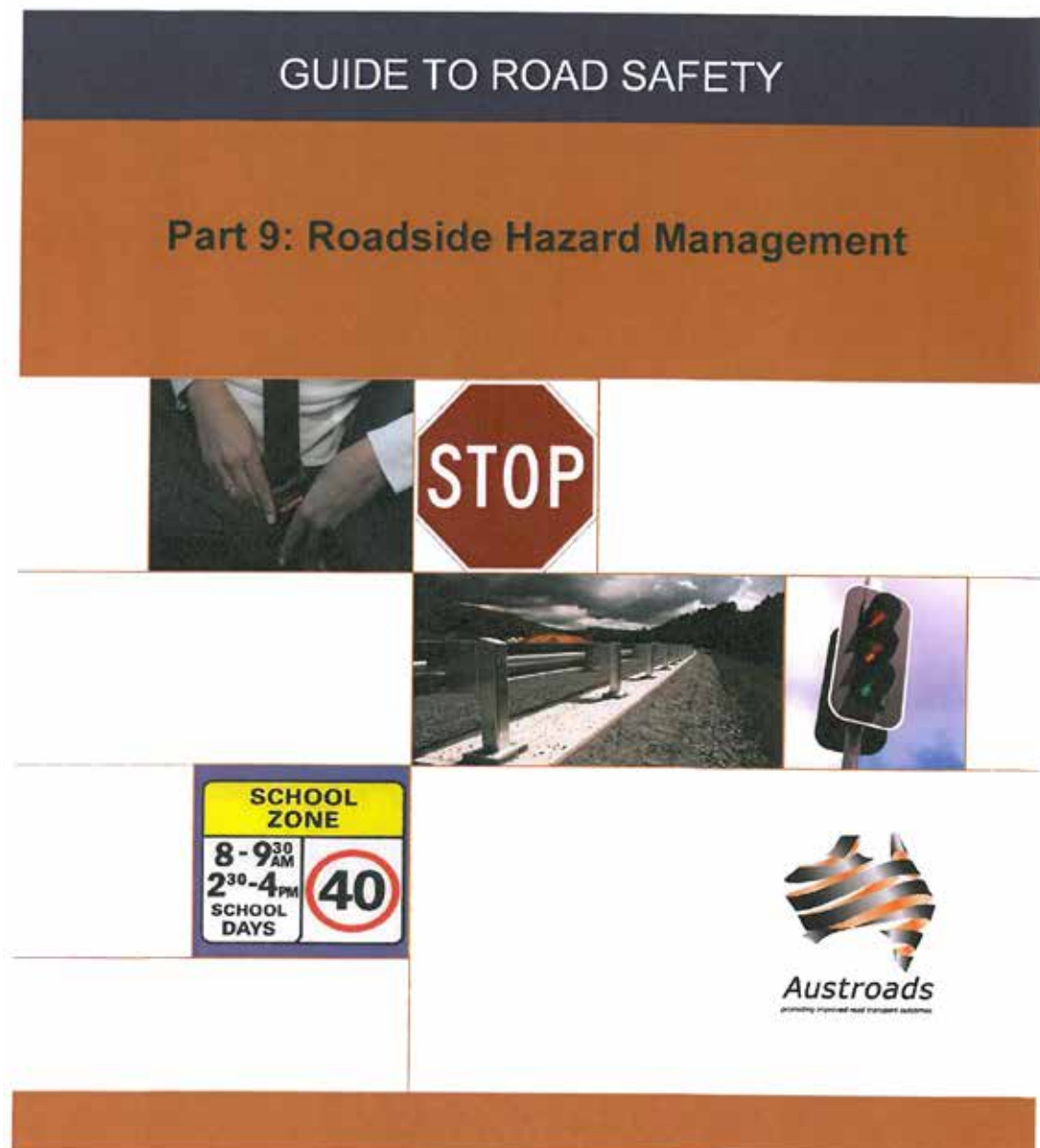
For further enquiries
13 22 13

The information in this brochure is intended as a guide only and is subject to change at any time without notice. It does not replace the relevant legislation.

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August 2012
TfNSW 12.039

Appendix D - Shared Zones and HPAA Fact Sheets



GUIDE TO ROAD SAFETY PART 9: ROADSIDE HAZARD MANAGEMENT

3 PROVIDING A FORGIVING ROADSIDE ENVIRONMENT

Ideally a roadside environment should be free of any hazards that may increase the severity of a crash, should it occur. Such a roadside would prevent injuries in run-off-road crashes by providing drivers with enough space to regain control of their vehicles and stop safely without colliding with any objects or the vehicle rolling over. However, it is usually not possible to construct a road environment completely free of hazards.

Should a vehicle leave the roadway it is important that a strategic approach be taken to provide a forgiving roadside environment so as to minimise the risk of death or serious injury.

3.1 Clear Zones

A clear zone is an area adjacent to the traffic lane that should be kept free from features that would be potentially hazardous to errant vehicles. The clear zone is a compromise between the recovery area for every errant vehicle, the cost of providing that area and the probability of an errant vehicle encountering a hazard. Where it is environmentally appropriate and economically viable, the clear zone should be kept free of non-frangible hazards and all features that would 'snag' a vehicle or cause it to behave adversely. Alternatively, hazards within the clear zone should be treated to make them safe or be shielded by a safety barrier. Clear zones are measured from the edge of the traffic lane.

Clear zone dimensions are intended as a guide by which practitioners can assess sites, not a prescriptive value. Practitioners may provide a greater or lesser width depending on the risk factors applying to a site.

The Austroads method of calculating clear zone widths which takes into account traffic volume, 85th percentile speed, curve radius and roadside slope is provided in the Austroads *Guide to Road Design, Part 6: Roadside Design* (in preparation).

3.2 Types of Hazards and their Treatments

The types of hazards that may be encountered on roadsides can be divided into six broad categories:

- rigid objects – trees, utility poles, culvert end-walls, etc.
- medians (cross median crashes)
- embankments and cuttings
- open drains
- bodies of water
- kerbs.

In priority order, the following approaches should be taken with these hazards:

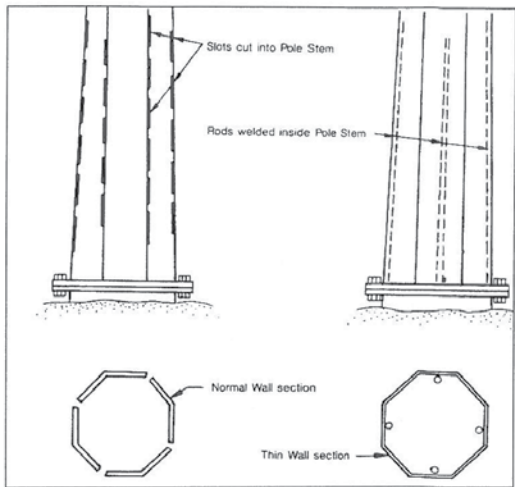
- removal of the roadside hazard
- redesign of the hazard so as to make it traversable
- relocate hazard to a location where it is less likely to be struck
- replacement of the hazard so that it breaks away or is impact absorbing
- shield the obstacle with an appropriate barrier and/or a crash cushion
- if none of the above is attainable, delineate the obstacle.

Austroads 2008

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GUIDE TO ROAD SAFETY PART 9: ROADSIDE HAZARD MANAGEMENT



Source: Austroads 2004c

Figure 3.2: Impact absorbing pole

(c) Service poles

The ideal treatment of service poles is to remove them and relocate services underground. Where this is not possible, service poles should be located where it is less likely that they will be impacted by an errant vehicle.

Trees

Trees greater than 100 mm in diameter located within the clear zone pose a potential hazard to motorists. New trees should be located outside of the clear zone so that they do not pose a serious roadside hazard.

Where existing trees are within a clear zone, and are deemed to pose a risk, the first option is to remove the tree. Where this is not feasible it may be appropriate to install a safety barrier. The decision to remove a tree or provide a safety barrier will depend on a number of factors relating to site conditions, accident history, economics and the environment. However, provision of a barrier should only be made where it is determined that collision with the barrier is less severe than collision with the existing hazard (i.e. trees).

It is also important that established clear zones are kept free from regrowth and that trees are pruned regularly enough to ensure that any growth does not restrict sight distance.

Other roadside obstacles (e.g. fire hydrants, mail boxes and fences)

Other roadside obstacles should be designed so they do not pose a serious risk to an errant vehicle. Objects containing horizontal rails capable of spearing vehicles (such as post-and-rail fences) can be particularly hazardous. Such objects should be located outside the clear zone or such that impact with the object should not result in serious injury.

Austroads 2008

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RTA Austroads Guide Supplements

Publication Number: RTA/Pub.11.097
Publication date: 3 March 2011



Transport
Roads & Traffic
Authority

Supersedes : Nil

RTA Supplement to AUSTROADS GUIDE TO ROAD DESIGN PART 6 (2009) ROADSIDE DESIGN, SAFETY AND BARRIERS

General

Austroads has released the Guide to Road Design Part 6 – Roadside Design, Safety and Barriers and all road agencies across Australasia have agreed to adopt the Austroads guides to provide a level of consistency and harmonisation across all jurisdictions. This agreement means that the new Austroads guides and the Australian Standards, which are referenced in them, will become the primary technical references for use within the Authority.

This supplement is issued to clarify, add to, or modify the Austroads Guide to Road Design Part 6 – Roadside Design, Safety and Barriers.

The RTA NSW accepts the principles in the Austroads Guide to Road Design Part 6 – Roadside Design, Safety and Barriers with variations documented in this supplement. These variations fall into two categories:

- **RTA Complementary Material:** RTA Design Reference Documents reference material that complements the Austroads Guides. These documents include RTA Manuals, Technical Directions and/or other reference material and are to be read in conjunction with the Austroads Guides.
- **RTA Departures:** RTA road design practices that depart from the Austroads Guides.

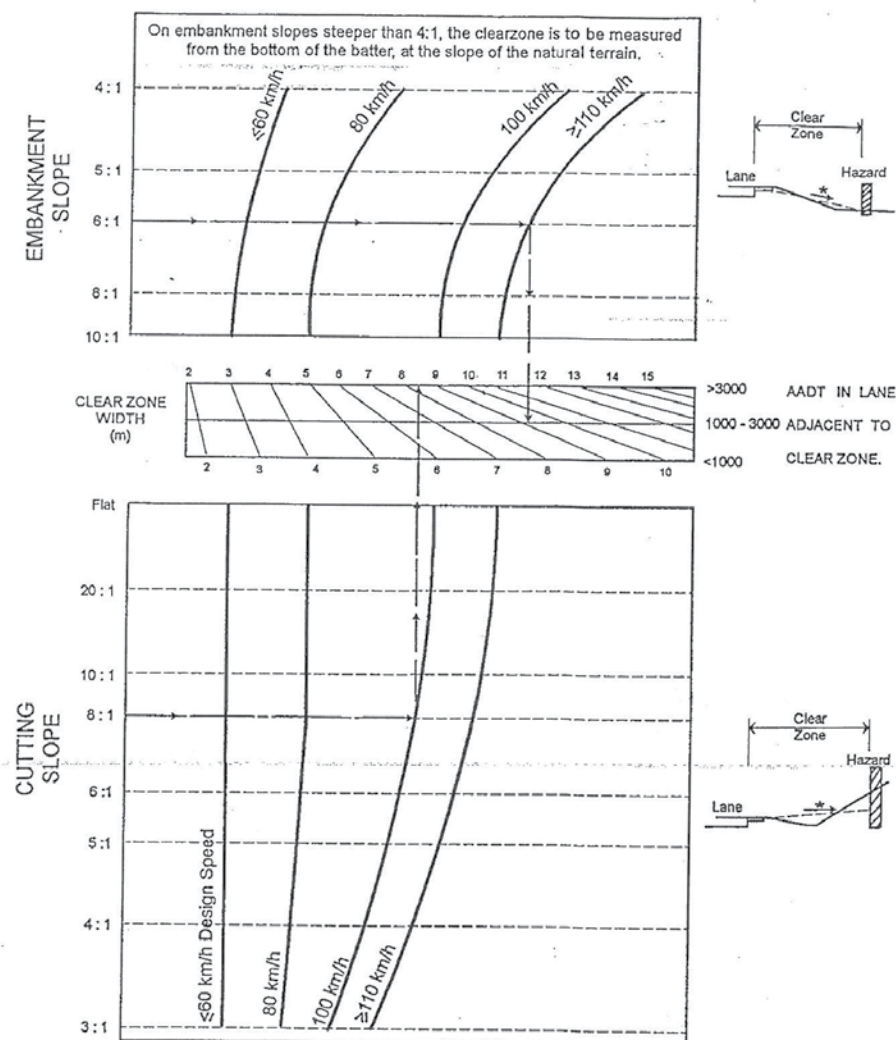
See also the RTA Supplements for the other parts to the Austroads Guide to Road Design Series and the RTA Supplements to the other Austroads Series.

All Reference Documents mentioned in this part should be checked against the RTA Design Reference Documents.

Appendix D - Shared Zones and HPAA Fact Sheets

6-3

Road Design Guide - May 1996



- NOTE: 1. These distances (*) are Weighted Average Distance when used on complex batter arrangements.
2. Design speeds shown are the 85th percentile value, measured (or predicted) for the site being considered.

CLEAR ZONE NOMOGRAPH

Figure 6.1

Roads and Traffic Authority, N.S.W.

Appendix E - Street Survey (Junek + Junek Pty Ltd)

