

JOINT REGIONAL PLANNING PANEL
Western Region

JRPP No	JRPP Reference Number 2012WES007
DA Number	DA 0313/2012
Local Government Area	Mid-Western Regional
Proposed Development	Construction of a Multi-Purpose Health Service Facility (MPS) and the partial demolition of the existing hospital
Street Address	206 Mayne Street Gulgong
Applicant/Owner	Health Infrastructure
Number of Submissions	Zero (0)
Recommendation	Approval with Conditions
Report by	Sarah Armstrong - Senior Town Planner

Assessment Report and Recommendation

EXECUTIVE SUMMARY:

Reason for Consideration by Joint Regional Planning Panel:

The application has been referred to the Joint Regional Planning Panel pursuant to Schedule 4A Development for which regional panels may be authorised to exercise consent authority functions of councils, of the Environmental Planning and Assessment Act 1979 as the proposal relates to Crown development with a capital investment value of more than \$5 million dollars.

Brief Description of Proposal:

The development application seeks approval for the construction of a Multi-Purpose Health Service facility and the partial demolition of the existing local heritage listed hospital and outbuildings.

The development application when lodged proposed the demolition of the 1901 Gulgong District Hospital, the application was amended shortly after the application was lodged to retain the original 1901 Gulgong District Hospital building (partial demolition) and bee hive tank as supported by the submitted Statement of Heritage Impact.

Compliance with Planning Controls:

The subject site is zoned Special Uses – Hospital pursuant to the Mid-Western Regional Interim Local Environmental Plan 2008. The proposed Multi-purpose Health Service is consistent with the purpose ‘hospital’ shown on the map and therefore permissible with the consent of Council.

The application has been assessed in accordance with Council’s Accessibility, Car Parking and Notification Development Control Plans (DCP) and is considered consistent.

Consultation:

The application was advertised and notified in accordance with Council’s Notification DCP, no submissions were received.

The application was referred to the Roads and Maritime Service; a submission was received that provided comment.

Recommendation:

It is proposed that Development Application 0313/2012 for the construction of a Multi-Purpose Health Service Facility and the partial demolition of the existing hospital at 206 Mayne Street, Gulgong 195 and 196 DP 755434 be approved in accordance with the Recommendation contained at the end of the report.

1. Proposal

The existing Health One facility approved by Council 16 February 2011 is proposed to be developed into the Multi Purpose Health Service facility. The services available at the Health One Service include:

- Resident primary care nursing services, post acute care services, child and family health services, chronic and complex care, women’s health and physiotherapy
- Emergency car services
- Health promotion and early intervention within a ‘wellness’ model
- General practitioners services
- Visiting specialist and allied health services
- Chronic and complex care disease rehabilitation services

The Multi Purpose Health Service facility will contain the following:

- HealthOne – primary and community care and an emergency care service
- 4 sub-acute beds including 1 respite/palliative care bed
- 6 high care residential aged care beds (flexible is usage to accommodate residents with low level dementia
- Clinical and operational support services

- Divisional therapy to provide therapeutic activities for aged care residents and non-acute patients.

The development application also seeks approval for the demolition of the following existing structures onsite:

- The kitchen wing;
- The former nurses quarters building and wardsman's room;
- The laundry building;
- The additional wing extensions on the core hospital building and operating theatre; and
- Ancillary buildings; workshop, water softening plant, sterilizing room, board room and entry, west wing and infill

Asbestos was discovered in many parts of the former hospital and buildings during a Work cover inspection in May 2010. Accordingly a suitable condition is included within the recommendation regarding demolition.

The subject site is included in Schedule 5 Heritage Items of the Mid-Western Regional Local Environmental Plan 2008. Accordingly, a Statement of Heritage Impact was submitted with the development application. It should be noted a Conservation Management Plan was prepared in accordance with the previous development application for the Health One facility. This development application was amended to retain the original 1901 Gulgong District Hospital building and bee hive tank as supported by the submitted Statement of Heritage Impact.

The proposal includes the transfer of an unformed Crown road reserve to Council. An additional vehicular access will be constructed within the road reserve. This access will provide vehicular access to the staff car parking area (including one disabled car parking space).

2. Site Description

The subject site is known as 206 Mayne Street Gulgong, Lot 195 and 196 DP 755434. The combined area of the two lots is approximately 2 hectares and has a frontage of 176 metres to Mayne Street (also known as Goolma Road). The site is located on the south western outskirts of Gulgong. An existing caravan park is adjoins the site to the north east and agricultural land adjoins the site to the south and south west.

The existing buildings on site are of a diverse mix, from the sprawling main hospital block (1901, with numerous additions) to a number of smaller, auxiliary buildings which have served a variety of hospital-related functions. These buildings range in heritage significance. The site is locally heritage listed under the Mid-Western Regional Interim Local Environmental Plan 2008.

Council approved the Health One facility on the site in February 2011.

The proposal includes the transfer of the existing Crown road reserve to Council and its formation for staff and emergency vehicular access. This existing Crown road reserve is located on the south western boundary of the site.

3. Referrals

The application was referred to the Roads and Maritime Service a submission was received providing comment. The comments provided have been considered in the assessment of the application and suitable conditions included within the recommendation where appropriate.

4. Environmental Planning and Assessment Act 1979

In determining a development application, the consent authority must take into consideration matters referred to in Section 79C(1) of the Environmental Planning & Assessment Act 1979 as are of relevance to the development. The following section of this report summarises the relevant matters for consideration and provides a planning response.

Section 79C(1)(a)(i) any environmental planning instrument

Mid-Western Regional Interim Local Environmental Plan 2008 (LEP)

Objectives of zone

- *To permit land uses that are not provided in other zones.*
- *To recognise the importance of sites with special land uses or natural characteristics.*
- *To protect and enhance those identified land uses or natural characteristics.*
- *To allow additional development that will not detract from existing development or have an adverse impact on surrounding land.*

The applicant seeks to continue site usage as a functioning medical facility. Approval of the current proposal will contribute positively to the continuing evolution of the site and offer a degree of protection for its existing built and natural features.

It is considered that the proposed, additional development is subservient, both in scale and location, to existing development and, by way of its contemporary, functional design, has the potential to impact positively upon the site and surrounding land.

27 Classified roads

(1) The objectives of this clause are:

- (a) to ensure that new development does not compromise the effective and ongoing operation and function of classified roads, and*
- (b) to prevent or reduce the potential impact of traffic noise and vehicle emissions on development adjacent to classified roads.*

The proposal involves the improvement of vehicular access, including an additional vehicular access to Mayne Street / Goolma Road.

(2) Consent must not be granted to the development of land that has a frontage to a classified road unless the consent authority is satisfied that:

(a) where practicable, vehicular access to the land is provided by a road other than the classified road, and

(b) the safety, efficiency and ongoing operation of the classified road will not be adversely affected by the proposed development as a result of:

(i) the design of the vehicular access to the land, or

(ii) the emission of smoke or dust from the proposed development, or

(iii) the nature, volume or frequency of vehicles using the classified road to gain access to the land, and

There is no opportunity for vehicular access to be provided via an alternate road. The application was referred to the Roads and Maritime Service, no concern was raised with regard to the ongoing safety, efficiency of the classified road; Mayne Street / Goolma Road.

An additional vehicular access is proposed to the classified road, however this provides a separation between visitor, staff and emergency vehicle movements. Further the additional access is located within an existing road reserve.

(c) the development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the proposed development.

The majority of the proposed development is not sensitive to traffic noise, those areas (accommodation) more sensitive have been located away from the classified road towards the rear of the site.

32 Heritage conservation

Lot 196, the eastern portion of the site, is heritage listed under Schedule 5 of the Mid-Western Regional Interim Local Environmental Plan 2008 (LEP) as item:

'2070312, "Gulgong District Hospital", 206 Mayne Street (Portion 196, Parish of Guntawang)'

Lot 195, the western portion of the subject site, is the proposed location of the facility. This lot is not heritage listed and this is considered to arise from a drafting error in the LEP. The intention of the listing in the LEP is clear by reference to the hospital and as such the heritage provisions have been applied to the whole site.

(1) Objectives

The objectives of this clause are:

(a) to conserve the environmental heritage of the Mid-Western Regional local government area, and

The application was amended to include the retention of the original 1901 Gulgong District Hospital building and bee hive tank.

(b) to conserve the heritage significance of heritage items and heritage conservation areas including associated fabric, settings and views, and

The application was amended to include the retention of the original 1901 Gulgong District Hospital building and bee hive tank; in addition the application proposes the demolition of unsympathetic additions to the building that will result in the original fabric being more visible.

(4) Heritage impact assessment

The consent authority may, before granting consent to any development on land:

(a) on which a heritage item is situated, require a heritage impact statement to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned.

A Heritage Impact Assessment (HIS) was submitted as part of the application. The HIS supports the retention of the 1901 Gulgong District Hospital building and bee hive tank.

(5) Heritage conservation management plans

The consent authority may require, after considering the significance of a heritage item and the extent of change proposed to it, the submission of a heritage conservation management plan before granting consent under this clause.

A Heritage Conservation Management Plan was prepared as required by a condition of the Health One facility development consent.

State Environmental Planning Policy Infrastructure

101 Development with frontage to classified road

This Clause is the same as Clause 27 Classified Roads of the LEP considered above.

Section 79C(1)(a)(i) any draft environmental planning instrument that is or has been placed on public exhibition

Draft Mid-Western Regional Local Environmental Plan 2012

The draft Mid-Western Regional Local Environmental Plan 2012 (draft LEP) is a relevant consideration in the assessment of the application.

The Draft LEP proposes to zone the subject site SP2 Infrastructure, a Multi-Purpose Health Service facility is permissible with the consent of Council.

Section 79C(1)(a)(iii) any development control plan

Design for Accessibility Development Control Plan

The facility has been design in accordance with the applicable Australian Standards, with the provision of accessible car parking spaces, circulation, amenities etc. The application is therefore considered consistent with the Design for Accessibility Development Control Plan.

Notification Development Control Plan

The application was notified in accordance with the Notification Development Control Plan, no submissions were received.

Car Parking Development Control Plan

The proposal is generally consistent with the Objectives of the plan. Clause 3.1 stipulates car parking rates. For hospitals;

- one (1) space per three (3) beds, plus
- one (1) space per two (2) staff (day shift) are required to be provided on site.

Ten (10) beds are proposed, the Statement of Environmental Effects details the total number of employees that will be present on site (for both the Health One and the Multi Purpose Health Service facility as 22 employees.;

The total number of car parking spaces available will be thirty (30), sixteen (16) in excess of that required.

Section 79C(1)(a)(iia) any planning agreement

None apply.

Section 79C(1)(a)(iv) the regulations (to the extent that they prescribe matters for the purpose of this paragraph)

There are no matters applicable to this application.

Section 79C(1)(b) the likely impacts of the development

The impacts of the development have been considered above; mitigation measures have been included within the recommendation as conditions of consent.

Section 79C(1)(d) any submissions

The proposed development was publicly exhibited for a period of two (2) weeks with a site sign erected, an advertisement in the local newspaper and written letters to adjoining land owners. The notification period resulted in zero (0) submissions.

Council received submissions from the Roads and Maritime Services (RMS). Appropriate conditions have been included within the recommendation drawn from the comments provided in the submission.

Section 79C(1)(e) the public interest

The public interest is served by the provision of a modern medical facility to meet the immediate health needs of Gulgong and surrounding district.

Sarah Armstrong
Senior Planner
Planning and Development
Mid-Western Regional Council
20 June 2012

Annexure 1 – Locality Plan
Annexure 2 – Site Plans (separately attached)
Annexure 3 – RMS submission

Recommendation

APPROVED PLANS

- #. Development is to be carried out generally in accordance with stamped plans
Project Number 11216802, Existing site plan A_0100 issue –
Project Number 11216802, Proposed site plan A_1000 issue A01
Project Number 11216802, Proposed floor plan A_2000 issue A01
Project Number 11216802, Proposed roof plan A_2100 issue –
Project Number 11216802, Proposed elevation A_4000 issue –
Project Number 11216802, Proposed sections A_4100 issue –

and the Application received by Council on 8 May 2012 except as varied by the conditions listed herein. Any minor modification to the approved plans will require the lodgement and consideration by Council of amended plans. Major modifications will require the lodgement of a new development application.

HERITAGE CONDITIONS

- #. Demolition of the existing hospital is to be limited to later accretions and outbuildings, so as to retain the core 1901 hospital building and bee hive tank, in accordance with the submitted draft Statement of Heritage Impact, dated 5 April 2012.
- #. Works to the 1901 hospital building is limited to weatherproofing and making the building secure. Any further works are subject to a separate development application.
- #. No additional vegetation to that indicated on the 'proposed site plan' is to be damaged as a consequence of the demolition process, or removed without the prior consent of Council.
- #. The existing, significant group of vegetation at the hospital entrance, comprising two deodars and one bunya pine, is to be retained.

- #. Proposed car parking is not to impinge upon the drip line of significant vegetation.
- #. Existing signage 'Gulgong District Hospital' is to be retained and relocated as indicated on the submitted site plan.

BUILDING CONSTRUCTION

- # All building work must be carried out in accordance with the provisions of the National Construction Code, Volume One, 2012 and the adopted Australian Standards referenced in the Building Code of Australia
- # The proposed development is to be carried out strictly in accordance with the details set out on the submitted plans and on the Application form, except as otherwise provided by the conditions of this consent.
- # Construction work noise that is audible at other premises is to be restricted to the following times:
Monday to Friday -- 7.00am to 6.00pm
Saturday -- 8.00am to 1.00pm
No construction work is permitted on Sundays and Public Holidays.
- # All mandatory inspections required by the Environmental Planning and Assessment Act and any other inspections deemed necessary by the Principal Certifying Authority being carried out during the relevant stages of construction.
- # A sign shall be erected in a prominent position on the premises on which the erection or demolition of a building is being carried out showing:
 - (a) the name, address and telephone number of the principal certifying authority for the work, and
 - (b) stating that unauthorised entry to the premises is prohibited, and
 - (c) showing the name of the builder or other person in control of the premises and a telephone number at which the builder or other person may be contacted outside working hours. The sign shall be removed when the erection or demolition of the building has been completed
- # All plumbing and drainage work must be carried out by a licensed plumber and drainer and must comply with the requirements of AS 3500 (National Plumbing & Drainage Code) and the NSW Code of Practice - Plumbing & Drainage. The selected plumber/drainer must provide Council with a drainage diagram detailing the location of the drainage system and the relevant connections. All plumbing and drainage inspections must be carried out by Council prior to the covering of any trenches or wall/ceiling linings.
- # There is to be no interference with the amenity of the neighbourhood by reason of the emission of any "offensive noise", vibration, smell, fumes,

smoke, vapour, steam, soot, ash, or dust or otherwise as a result of the proposed development.

- # The site must be provided with a waste enclosure (minimum 1800mm x 1800mm x 1200mm high) that has a lid or secure covering for the duration of the construction works to ensure that all wastes are contained on site. The enclosure is to be emptied periodically to reduce the potential for rubbish to be blown from the site.
The Council encourages the separation and recycling of suitable materials.
- # Guttering and downpiping shall be provided and connected to the existing stormwater lines.
- # Runoff and erosion controls must be installed prior to clearing the site and incorporate:
 - diversion of uncontaminated upsite runoff around cleared and/or disturbed areas and areas to be cleared and/or disturbed.
 - sediment control fences at the downslope perimeter of the cleared and/or disturbed area to prevent sediment and other debris escaping from the land to pollute any stream or body of water.
 - maintenance of all erosion control measures at maximum operational capacity until the land is effectively rehabilitated and stabilised beyond the completion of the development or particular stage of the development.
- # For every 12 month period after the issue of the Final Fire Safety Certificate the owner/agent of the building must provide the Council with a copy of an Annual Fire Safety Statement certifying that specified fire safety measure is capable of performing to it's specification
- # The placing of building materials or the carrying out of building operations upon or from Council's footway or roadway is prohibited unless prior consent in writing is obtained from Council.
- # The building must be provided with access for persons with disabilities through the main public entrance and to and within all other areas normally used by the occupants in order to comply with Australian Standards 1428.1 – 2009, 1428.4 – 1992, the Building Code of Australia and the Disability Discrimination Act.
- # All demolition works are to comply with Australian Standard 2601-2001 'The Demolition of Structures'
- # Any work involving the removal of more than 10m² of bonded asbestos or any amount of friable asbestos is required to be done by a contractor licensed under the Occupation Health and Safety Regulation 2001.

- # Arrangements are to be made with Council's landfill prior to the disposing of any asbestos material.

ENGINEERING CONDITIONS

- #. Any liquid wastes from the premises, being discharged to the sewers under control of Mid-Western Regional Council is done so in accordance with Council's requirements. Approval for discharge of liquid trade waste to the sewer is required prior to the issue of an Occupation Certificate. An application form is to be submitted for this purpose, including discharge rate and site plan details.
- #. Car parking within the development is to comply with the following:
- a) Each parking space is to have minimum dimensions of 5.5m x 2.6m;
 - b) Each disabled car parking space is to be in accordance with the provisions of Clause D3.5 of the Building Code of Australia and Australian Standard as 2890.1 – 2004;
 - c) All car parking spaces are to be line-marked and sealed with a hard standing, all weather material and must be maintained in a satisfactory condition at all times;
 - d) Off street parking is to be encouraged by the placement of prominent signs indicating the availability of parking.
- #. The aisle widths, internal circulation, ramp widths and grades of the car park are to generally conform to the Roads and Traffic Authority guidelines and Australian Standard AS2980.1 – 2004. Details of compliance are to be shown on the relevant plans and specifications.
- #. All vehicles to enter and leave the site in a forward direction at all times.
- #. All loading and unloading in connection with the premises shall be carried out wholly within the site.
- #. All car parking and associated driveway works to be completed prior to occupation of the development.
- #. Mayne Street is to be upgraded for the frontage of the development (from the new intersection of the road reserve to the existing driveways) in accordance with the following:

Item	Requirement
Footpath Width	4 m
Concrete footpath	1.2 m
Kerb & Gutter	Roll back concrete kerb & gutter
Subsoil Drainage	Behind kerb if required
Underground Drainage	Where gutter flow exceeds 2.5 metres during minor events or adjacent to intersections.

- #. The existing gravel track along the western site boundary is to be constructed to be suitable road and adequate all-weather vehicular access to the development in accordance with Austroads and the following minimum specifications:
- Carriageway width – 9m
 - sealed width 7m
 - seal type – 14/7 mm double-double (bitumen)
 - standard cross-section with 3% fall
 - Pavement thickness – min 150mm (Pavement design to be submitted with construction certificate plans to confirm pavement thickness).
- # The Crown Road reserve shall be transferred to Council, followed by the construction of the road to the standard as set out in the above condition at full cost to the developer. The transfer can be initiated by paying the fee required to the Department of Lands (via Council) and Council sending an accompanying letter asking to have the road transferred to Council.
(Note: This road will not be maintained by Council. It will be the responsibility of the road users to perform any future road maintenance of that road that services the development).
- #. The applicant is to submit a Drainage Report prepared in accordance with the Institution of Engineers publication Australian Rainfall and Run-off to Council for approval prior to the release of the Construction Certificate. The report must demonstrate that stormwater runoff from the site is not increased beyond the existing undeveloped state up to and including a 100-year ARI. All storm water detention details including analysis shall be included with the drainage report.
- #. An Erosion and Sediment Control Plan for the development is to be prepared and implemented in accordance with the LANDCOM guidelines and requirements as outlined in the latest edition of “Soils and Construction – Managing Urban Stormwater”. Points to be considered include, but are not limited to:
- Saving available topsoil for reuse in the revegetation phase of the subdivision;
 - Using erosion control measures to prevent on-site damage;
 - Rehabilitating disturbed areas quickly;
 - Maintenance of erosion and sediment control structures;
- #. A schedule of operations is to be submitted to ensure all appropriate works are undertaken at the correct stage. The sequence of construction activities should be similar to the following:

Operation	Activity
1	Site survey layout
2	Construction of clean water diversion bank & design site entry
3	Strip topsoil and transport to stockpile
4	Erect sediment fence around topsoil stockpiles
5	Construction phase: road, power, drainage, water and sewer services

6	Installation of all engineering works i.e. drainage and sewer
7	Road sealing and installation of sediment traps of kerb inlets
8	Completion of engineering construction activities
9	Spread stockpiled topsoil
10	Removal of clean water diversion systems
11	Regeneration of all disturbed areas

- #. All road works are to be constructed at the full cost of the developer, in a manner consistent with Aus-Spec #1 and Council's standard drawings:
 - (a) Design specs shall be in accordance with Development Design Specification of Aus-Spec # 1 (from IPWEA)
 - (b) Construction methods and specs shall be in accordance with Development Construction Specification of Aus-Spec#1 (from IPWEA)
 Note: Institute of Public Works Engineering Australia (IPWEA)

- #. All earthworks, filling, building, driveways or other works, are to be designed and constructed (including stormwater drainage if necessary) so that at no time will any ponding of stormwater occur on adjoining land as a result of this development.

- #. Lots 195 and 196 DP 755434 shall be consolidated and the survey plan be registered with the Land and Property Management Authority. The plan of consolidation is to be submitted to Council prior to the occupation of the building.



- #. Safe Intersection Sight Distance (SISD) requirements outlined in the Austroads Guide to Road Design and RMS Supplements to Austroads Guide to Road Design are to be maintained in both directions along Goolma Road. For a 50km/h speed zone the minimum SISD is 90 metres.

- #. The site access is to conform to the Ausroads (2009 Urban Basic Right-turn Treatment 'Type BAR' (copy enclosed)

- #. The access is to be sealed for a minimum of ten (10) from the edge of the westbound travel land of Goolma Road and the level of the proposed access road are to match the levels of Goolma Road.

- #. The access is not to interfere with longitudinal drainage adjacent to Goolma Road. If required a suitably sized (minimum 375mm diameter) reinforced concrete culvert is to be installed under the access. Any culvert within the clear zone is to have sloped headwalls so as not to be a traffic hazard.



	<p>Development Application: DA0313/2012</p> <p>Property Address: 206 Mayne Street Gulgong</p> <p>Legal Description: Lot 195 and 196 DP 755434</p>	 <p>Tuesday, 19 June 2012</p>
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SF2012/015500; WST12/00067

The General Manager
Mid-Western Regional Council
86 Market Street
MUDGEES NSW 2850

Dear Sir

**Lot 195-196 & DP 755434, 206 Mayne Street (MR233 - Goolma Road), Gulgong
Proposed partial demolition of existing hospital and development of a multi
purpose health service**

Thank you for referring the above development application to Roads and Maritime
Services (RMS) for comments.

RMS does not object to the proposed development and provides the following
comments:

- Safe Intersection Sight Distance (SISD) requirements outlined in the Austroads Guide to Road Design and RMS Supplements to Austroads Guide to Road Design are to be maintained in both directions along Goolma Road. For a 50 km/h speed zone the minimum SISD is 90 metres.
- Site access for general traffic and emergency vehicles should be consolidated. All access to the site should be via the new road that would be formed to the east of the site.
- The site access is to conform to the Austroads (2009) Urban Basic Right-turn Treatment 'Type BAR' shown in Figure 7.17 (copy enclosed).
- The access is to be sealed for a minimum of 10 metres from the edge of the westbound travel lane of Goolma Road and the levels of the proposed access road are to match the levels of Goolma Road.
- All other existing direct access points should be removed and fenced.
- The access is not to interfere with longitudinal drainage adjacent to Goolma Road. If required a suitably sized (minimum 375mm diameter) reinforced concrete culvert is to be installed under the access. Any culvert within the clear zone is to have sloped headwalls so as not to be a traffic hazard.
- The need for emergency vehicles to cross any internal pedestrian crossings should be limited.

Should you require any further information please contact Dave White (02) 6861 1479.

Yours faithfully

Tony Hendry

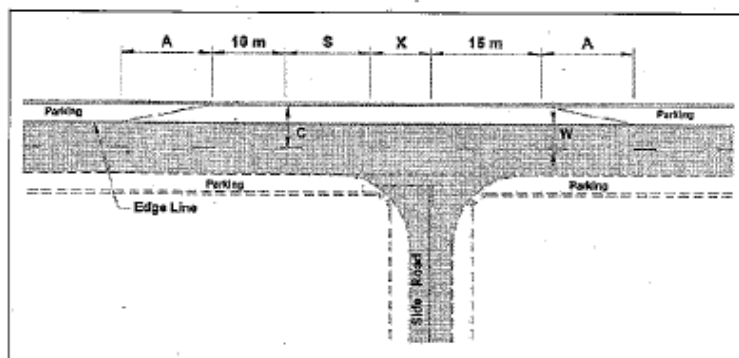
Road Safety & Traffic Manager 15 JUN 2012
Roads and Maritime Services Western

51-55 Cumajong Street PARKES NSW 2870
PO Box 334 PARKES NSW 2870 DX 20256
www.rta.nsw.gov.au | 13 17 82

7.7 Urban Right-turn Treatments – Undivided Roads

7.7.1 Urban Basic Right-turn Treatment (BAR)

The BAR turn treatment shown in Figure 7.17 is applicable at intersections of two-lane urban roads and minor local roads where traffic volumes do not warrant a higher order treatment. It should provide sufficient pavement width for the design through vehicle to pass a vehicle waiting to turn right. The absolute minimum pavement width on a horizontal straight should be 6.0 m between the centreline and the edge of the pavement or kerb line while 6.5 m is the preferred minimum as it is adequate for heavy vehicles (excluding road trains) to pass right-turning vehicles.



Notes:

1. This diagram does not show any specific bicycle facilities. Where required bicycle facilities should be provided in accordance with this guide.
2. The dimensions of the treatment are defined thus:

W = Nominal through lane width (m) (including widening for curves). Width to be continuous through the intersection.

C = On straight

- 6.0 m minimum
- 6.5 m minimum for 19 m semi-trailers and B-doubles
- 7.0 m minimum for Type 1 & Type 2 road trains

On curves

- widths as above + curve widening (based on widening for the design turning vehicle plus widening for the design through vehicle).

$$A = \frac{0.5V^2(C - W)}{3.6}$$

Increase length A on tighter curves (e.g. where side friction demand is greater than the maximum desirable). Where the design through vehicle is larger than or equal to a 19 m semi-trailer, the minimum speed used to calculate A is 80 km/h.

V = Design speed of major road approach (km/h).

S = Storage length to cater for one design turning vehicle (m) (minimum length 12.5 m).

X = Distance based on design vehicle turning path, typically 10–15 m.

Source: ODMR (2008).

Figure 7.17: Basic right-turn treatment (BAR) for a two-lane urban road