26 May 2017

SF2014/092248; WST14/00133/04

The Manager
Resource Assessments
NSW Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Ms Elle Donnelly

Dear Ms Donnelly

SSD6785: Lot 7 DP 752575; 4147 Newell Highway (HW17) Gilgandra; Gilgandra Solar Farm

Thank you for your email of 3 April 2017 referring the Environmental Impact Statement for the proposed Gilgandra Solar Farm to Roads and Maritime Services for comment. Reference is made to a your telephone conversation with Andrew McIntyre from Roads and Maritime on 26 May 2017 and Roads and Maritime's previous submission in relation to this matter dated 24 May 2017.

Roads and Maritime will not object to the proposed development and provides the following recommended conditions for the Department's consideration:

- Prior to the commencement of construction work, a Channelised Right (CHR) turn lane in accordance with Figure 7.7 *Part 4A of Austroads Guide to Road Design* (copy enclosed), is to be provided in Eumungerie Road at its intersection with Baroona Road. The intersection works are to be designed and constructed for a 100km/h speed zone and be able to accommodate the largest vehicle accessing the intersection.
- Prior to the commencement of construction work, a Basic Left (BAL) turn treatment as shown in Figure 8.2 Part 4A of the *Austroads Guide to Road Design* (copy enclosed is to be provided at the intersection of Eumungerie and Baroona Roads. The BAL facility will also need to be sealed and built for a 100km/h environment.
- Size B Gateway 'Turning Traffic' signs (W5-25) with 200 metre distance plates are to be provided 200 metres either side of the intersection of Eumungerie and Baroona Roads.

- Prior to the commencement of construction works, the applicant is to prepare Traffic Management Plan (TMP) in consultation with Gilgandra Shire Council, Dubbo Regional Council and Roads and Maritime Services. The TMP is to outline measures to manage traffic related issues associated with the delivery and construction of the solar plant and ancillary structures, any construction or excavated materials, machinery and personnel involved in the construction, operation and decommissioning process. The plan is to detail the potential impacts associated with the development, the measures to be implemented and the procedures to monitor and ensure compliance. The plan is to address, but not necessarily be limited to:

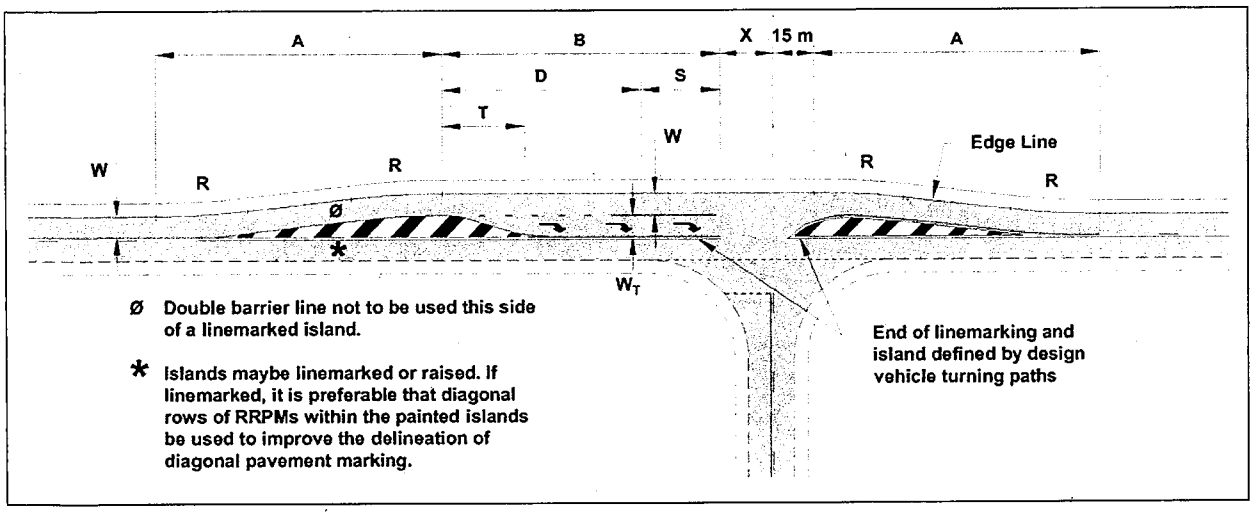
    - The origin, number, size, frequency, including peak and daily traffic volumes and destination of vehicles accessing/exiting the site.
    - Loads, weights and lengths of haulage and construction related vehicles and the number of movements of such vehicles.
    - Existing background traffic, peak hour volumes and types and their interaction with projected development related traffic.
    - Cumulative impacts of existing background traffic and traffic generated by the construction of the solar farm. .
    - The management and coordination of construction and staff vehicle movements to the site and measures to limit disruption to other motorists.
    - Measures to be employed to ensure a high level of safety for all road users during the construction and operation phases of the development
    - Scheduling of haulage vehicle movements to minimise convoy length or platoons.
    - Details of intersection improvement works in accordance with *Austroads Guide to Road Design* and Roads and Maritime supplements.
    - Local climate conditions that may affect road safety for vehicles used during construction, operation and decommissioning of the project (eg fog).

    The preparation of the TMP for the project is to involve the appointed transport contractor, Gilgandra Shire Council, Dubbo Regional Council and Roads and Maritime Services to determine the final details of haulage, including exact transport routes, road-specific mitigation measures and haulage timing. Road and intersection improvement works are to be approved and completed prior to the commencement of construction of the solar farm.

It would be appreciated if a copy of the determination for this project could be forwarded to Roads and Maritime at the same time it is sent to the proponent. Should you require further information please contact Andrew McIntyre, Manager Land Use Assessment, on 02 6861 1453.

Yours faithfully

Kellee McGilvray
Acting Network & Safety Manager
Western



Notes:

1. An alternative to the double white line on the offside edge of the right-turn slot is a 1.0 m painted median. The 1.0 m median is particularly useful when the major road is on a tight horizontal curve and oncoming vehicles track across the centreline. Provision of this median will require the dimension 'A' to be increased.
2. A raised concrete median on the minor road may be used with this treatment to minimise 'corner cutting', particularly for higher turning volumes.
3. The dimensions of the treatment are defined below and values of A, D, R and T are shown in Table 7.2:

W = Nominal through lane width (m) (including widening for curves). For a new intersection on an existing road, the width is to be in accordance with the current link strategy.

W_T = Nominal width of turn lane (m), including widening for curves based on the design turning vehicle. Desirable minimum = W, absolute minimum = 3.0 m.

B = Total length of auxiliary lane including taper, diverge/deceleration and storage (m).

D = Diverge/deceleration length including taper. Adjust for grade using the 'correction to grade' factor (Section 5)

T = Physical taper length (m) and is given by:

$$T = \frac{0.33VW_T}{3.6}$$

S = Storage length (m) should be the greater of:

1. the length of one design turning vehicle or
2. (calculated car spaces –1) x 8 m (*Guide to Traffic Management – Part 3: Traffic Studies and Analysis* (Austroads 2009h), or use computer program e.g. aaSIDRA).

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

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

Source: Based on QDMR (2006).

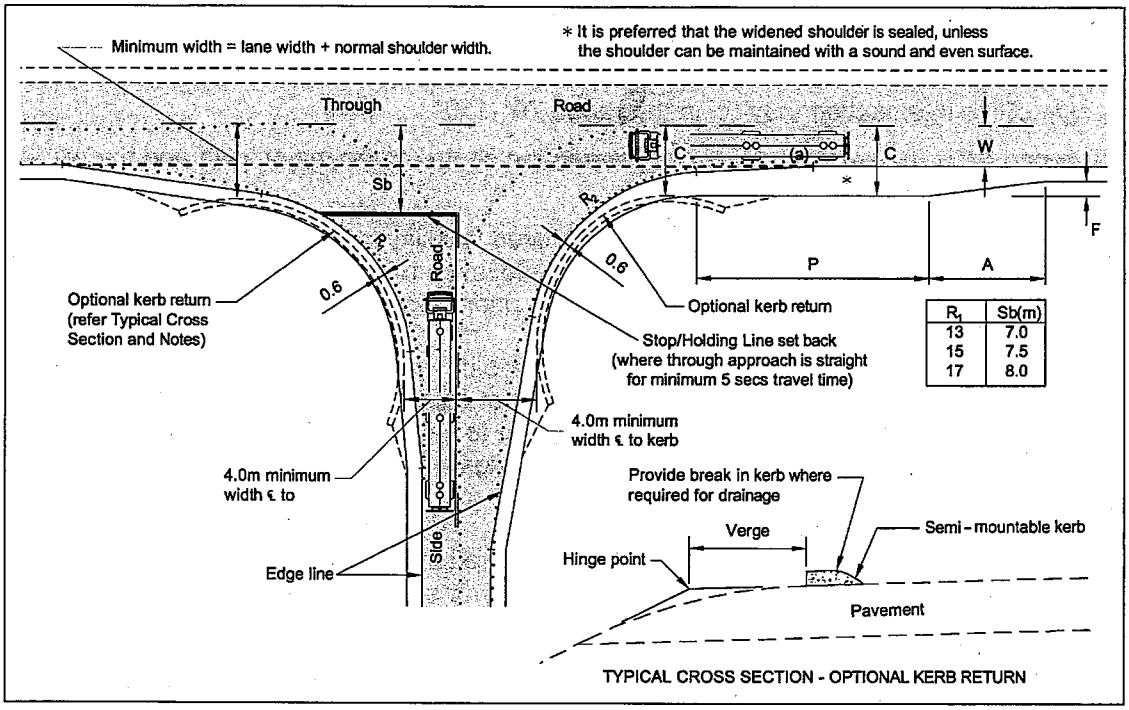
Figure 7.7: Channelised right turn (CHR) on a two-lane rural road

Table 7.2: Dimensions of CHR treatment for various design speeds

Design speed of major road approach (km/h)	Lateral movement length A (m) [1]		Desirable radius R (m)
	W_T=3.5 m	W_T=3.0 m	
50	50 [2]	40 [2]	110
60	60	50 [2]	175
70	70	60	240
80	80	65	280
90	90	75	350
100	100	85	425
110	110	95	500
120	120	100	600

Notes:

1. Based on a diverge rate of 1 m/sec. If the through road is on a tight horizontal curve (e.g. one with a side friction demand greater than the maximum desirable) increase the lateral movement length so that a minimal decrease in speed is required for the through movement.
2. Where Type 2 road trains are required minimum A = 60.0 m.



R_1	Sb(m)
13	7.0
15	7.5
17	8.0

Notes:

1. R1 and R2 are determined by the swept path of the design vehicle.
2. The dimensions of the treatment are defined thus:

W = Nominal through lane width (m) (including widening for curves).

C = On straights – 6.0 m minimum.

On curves – 6.0 m plus curve widening (based on widening for the design turning vehicle plus widening for the design through vehicle).

A = $\frac{0.5VF}{3.6}$

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

F = Formation/carriageway widening (m).

P = Minimum length of parallel widened shoulder (Table 8.1).

Source: QDMR (2006).

Figure 8.2: Rural basic left-turn treatment (BAL)

Table 8.1: Minimum length of widened parallel shoulder

Design speed of major road approach (km/h)	Minimum length of parallel widened shoulder P (m)
50	0
60	5
70	10
80	15
90	20
100	25
110	35
120	45

Note: Adjust the length for grade using the 'correction to grade' factor in Table 5.3

Source: QDMR (2006).