

<b>Title</b>	<b>Supplementary report reviewing road safety audit</b>
<b>JRPP Reference No.</b>	<b>2010SYW027</b>
<b>Development Application Number</b>	<b>DA-1133/2010</b>
<b>Proposed Development</b>	<b>Multi denominational lawn cemetery and associated works</b>
<b>Address</b>	<b>321 Greendale Road, Greendale</b>
<b>Date</b>	<b>8 August 2012</b>

## **1. Background**

In a letter dated 18 June 2012 the Acting Chairperson of the Sydney West Joint Regional Planning Panel advised Council that determination of DA-1133/2010 for a cemetery at 321 Greendale Road, Greendale was deferred on the basis of, inter alia, the applicant being requested to prepare a Road Safety Audit of the existing Greendale Road.

To prepare the audit applicant engaged an accredited road safety auditor - Winning Traffic Solutions Pty Ltd. The audit examines the physical features of Greendale Road from The Northern Road, in the south to Park Road in the north that may impact upon road user safety and identifies potential safety hazards.

Greendale Road is a local road, between The Northern Road and Park Road, under the care and control of Liverpool, Camden and Penrith Councils and is approximately 13.5 km long. The western section within the Penrith LGA has been reconstructed, with sealed shoulders and appropriately line marked with centre line marking and edge lines. Whilst a significant length of the eastern sections within Liverpool LGA and Camden LGA have poor road pavement, unsealed road shoulders and no edge line markings.

## **2. Road Safety Audit**

The audit comprises two documents:

- Road Safety Audit Report Stage 2 (Preliminary Design) Road Widening to Accommodate Right Turn Deceleration Lane - No. 321 Greendale Road Greendale
- Road Safety Audit Report Stage 5 (Existing Road) – Greendale Road Greendale (The Northern Road to Park Road)

Copies of the two reports have been provided to the Panel.

The first report deals with the road safety of the preliminary design of the proposed intersection treatment off Greendale Road, which includes localised road widening to accommodate basic auxiliary left (BAL) treatment and a channelised right turn (CHR) treatment. to the development site. The audit identifies detailed design issues with the proposed treatment. These issues and their rectification are capable of being addressed through appropriate design changes.

The second report identifies a number of issues that are considered to be high risk to road users and require review against the overall operational safety aspects of the

constructed works. Of greatest concern arising from the Audit the following issues have been identified:

- Generally and for the whole length of Greendale Road there is a general lack of consistency in the application of pavement markings (centre line, edge-lines and RRPM's), guideposts and signposting (curve warning and hazard boards). The report authors attribute this to the three different local government agencies (Liverpool, Penrith and Camden) administering the route.
- There are non-frangible objects in the clear zone. Figure 6.1 of RTA Publication 11.097 shows that the clear zone for roads with <1000 AADT at 80kph is 4metres.
- In the northbound direction from Chainage 1.04 to Chainage 8.85 (from The Northern Road) there are no edge lines to provide driver guidance. This is particularly a hazard under night conditions and likely to contribute to run-off-road incidents.
- In the northbound direction from Ch.1.20 to Ch.8.85 there is intermittent pavement failure, including pot-holing and pavement edge failure. Potholes are a particular hazard for motorcycles.
- In the northbound direction from Ch.1.33 to Ch.8.85 some pavement remediation has been undertaken but centre line markings have not been reinstated resulting in loss of pavement definition, particularly at night.
- In the northbound direction at Ch.5.12 there is no warning of the curve in southbound direction and it is not properly delineated in either direction.
- In the northbound direction at Ch.5.40 the curve is not delineated in southbound direction. As it leads into the curve at Ch.5.30 it is considered that advance warning of the curve and an advisory speed of 35kph should commence here.
- In the northbound direction at Ch.13.88 50kph regulatory signs are around a curve without advance warning of the change in speed limit.
- In the northbound direction from Ch. 15.27 to Park Road, centre and edge-line markings terminate abruptly at Ch.15.27. There are no pavement markings along the road. This area is within the administrative boundaries of Penrith Council. The road is in a residential precinct and a high non-compliance to the regulated 50kph speed was observed. Overhead lighting is poor and at night a driver is not confident about vehicle position in the roadway, particularly with on-coming vehicle headlights. Given the nature of the road environment it is considered imperative that "traffic calming" be employed, by way of pavement markings, to enhance road user safety and enforce the urban road environment being driven.

### **3. Council's response to the Audit**

Upon receipt of the reports a copy was provided to Council's Civil Maintenance Manager and Traffic and Transport Manager for review and assessment.

A copy of their comments are summarised below:

### **3.1 Comments from Council's Civil Maintenance Manager**

#### **3.1.1 Road condition**

Camden and Liverpool councils have undertaken significant pavement repair works and will continue to carry out its recurrent maintenance program, as required to maintain Greendale Road in a serviceable condition.

#### **3.1.2 Signs and lines**

The responsibility for the maintenance of regulatory signs and lines within Liverpool lies with the Roads and Maritime Services. Civil Maintenance will be notifying the RMS of the audit findings for their appropriate action. With regards to signs and lines in the neighbouring LGAs, a letter is being drafted to notify Camden and Penrith Councils of the audit findings.

#### **3.1.3 Maintenance issues**

With regards to other maintenance issues identified in the audit, Civil Maintenance will program necessary maintenance of works that are Council responsibility, which will be implemented progressively subject to budget and resource availability.

One means to mitigate the possible impacts on traffic flow and level of service particularly the cumulative impacts of multiple cemeteries on Greendale Road would be to provide overtaking opportunities at selected locations along the road. It is considered that it would be difficult to attribute the cost of such works to a single development.

With regards to road widths, the AUSTROADS guide to the geometric design of rural roads requires the following widths for AADT 500 to 1000 vpd:

Ø	Traffic lanes	6.2 to 7.0m
Ø	Total shoulder	1.5m
Ø	Sealed shoulder	0.5m

The existing road does not meet the above requirements.

### **3.2 Comments from Council's Traffic and Transport Manager**

#### **3.2.1 Road Safety Audit Outcomes**

The section of Greendale Road, between Chainages 1.20 and 8.85, has poor road condition, and the pavement is failing at a number of locations. Sections of the road have carriageway widths of less than the desirable 6.2 to 7.2m, poor centre line marking (faded), unsealed road shoulders and no edge lines.

The faded and missing centre lines can be rectified in the short term, however carriageway widening and sealing of the road shoulders to allow the line marking of the edge lines, would require reconstruction first.

The traffic information provided with the Development Application indicates that the proposal will almost double traffic volumes along Greendale Road (in the short term).

The proposal will also attract motorists who are not used to the poor pavement conditions along Greendale Road, if the identified road safety hazards are not addressed in the short term.

It would be desirable for the identified road safety hazards to be addressed prior to occupation of the development or that Council adopts a programme to reconstruct the section of Greendale Road between Chainages 1.2 and 8.85.

The proposed development along with other traffic generating developments will bring forward the need to address the road safety hazards. In particular the additional developments will require road widening to achieve the desirable carriageway widths and permit edge line marking.

Hence, if Council has not adopted a programme with a budget, for the reconstruction as well as road widening of the existing carriageway to permit edge line marking, then a cost sharing with the new developments should be established.

Establishing such a cost sharing scheme requires road design and cost estimates as well as forecast additional traffic generating developments and associated traffic generation that could be expected along the Greendale Road over the next five to ten years. The applicant should be requested to address the road safety hazards identified in the road safety audit reports prior to the determination of the DA.

Otherwise determination and occupation of the Proposal would result in significant financial implication for Council to reconstruct and widen Greendale Road to address the road safety hazards identified in the Audit.

The above information indicates that there is a nexus for the developer to carry out appropriate road widening with edge line marking if Council has not adopted a program with funding allocation for the required road widening to be carried out. In addition, road widening would depend on the traffic arrangement that the developer will be proposing to manage traffic along Greendale Road i.e., whether they would be funeral processions or individual cars would be driving separately to the development site.

Such information is not provided in the development application and it would be useful in determining appropriate work that would need to be carried out to accommodate and minimise traffic impact of the proposal on Greendale Road. Thus the developer should be requested to provide additional information on how traffic would be managed and a traffic control management plan.

Council is responsible for improving the existing road pavement and providing appropriate traffic lanes however, it is considered that the need for road widening to accommodate edge line marking can be apportioned to expected new developments along Greendale Road as such improvements would not have been carried out before occupation of the proposed development.

The Stage 2 safety audit has been carried out to assess adequacy and safety concerns with the proposed intersection treatment off Greendale Road to the development site.

The specific recommendations and comments on these recommendations are as follows:

RSA identified road safety concerns	Comments on the concerns
<p>The proposed Preliminary Design prohibits westbound vehicles from turning right into properties impacted by the location of the painted central median proposed.</p>	<p>The safety audit has identified that the basic left turn into the development site is Acceptable. However, it also notes that whilst the right turn treatment in the form of channelised right turn treatment is acceptable the associated central median island would restrict right turn movements to adjoining properties and this needs to be resolved. As a solution the safety audit has recommended a basic auxiliary right turn treatment (without central median to achieve the right turn treatment). The recommendations are supported.</p>
<p>The existing gateway access measures approximately 3m wide. Given the type of development proposed there is a high probability the opposing vehicles will meet at the driveway access. The existing driveway can not accommodate passing vehicles and should entry vehicles conflict with exit vehicles this may cause queuing onto Greendale Road.</p>	<p>The safety audit has recommended that the proposed driveway needs to accommodate two way traffic movement and the existing 3m driveway needs to be widened. This recommendation is supported.</p> <p>The audit includes a commentary that kerb and guttering may not be in keeping with the rural setting. This comment is not supported.</p> <p>To ensure the intersection treatment and associated drainage does not become a maintenance issue for Council, the proposed kerb and guttering in the original development application is considered appropriate.</p>
<p>The proposed design is considered may bring traffic closer to non-frangible roadside furniture (poles, trees etc). All non-frangible furniture is to be located outside of the designated "clear zone" for the speed of the road or protected.</p>	<p>The design needs to be amended to ensure that non-frangible poles and trees are to be relocated to ensure appropriate safety of the proposed intersection treatment.</p>



### **3.2.2 Other Traffic Impacts**

Based on a traffic survey conducted in May 2010 (between the Northern Road and Dwyer Road), Greendale Road was carrying a daily average traffic volume of 1460 vehicles, with an 85th speed of 90 km/hr and an 8.5% heavy vehicle component.

The Traffic and Parking Report that accompanied the DA, indicates that based on a pro rata of the Pine Grove Cemetery, the proposal could generate a peak traffic volume of about 42 vehicles per hour during the morning peak and 39 vehicles during the afternoon peak between 5 and 6 pm.

The Traffic Report does not provide a traffic distribution and whether there would be funeral processions to the development site. Traffic movements to the development would be useful in determining whether there would be significant impact on traffic flow along Greendale Road.

With the existing traffic volume of 44 vehicular (in front of the development site) in 2009, the section of the road in front of the development site would be expected to carry an additional traffic volume of 45 vph. The traffic volume with the development will be well within the road capacity. Hence, the road would be expected to operate with acceptable level of service if there were no funeral processions.

However, traffic flow would be affected by the funeral processions if that is the arrangement for traffic to the development site. The developer should therefore be requested to provide additional information on this issue.

### **3.2.3 Recommended Traffic Related Consent Conditions**

From the above discussion, traffic assessment of the proposal requires additional information on traffic movements and detailed analysis of possible cost sharing for improving for addressing the identified road safety hazards. However, if Council and the Sydney West Joint Regional Panel wishes to consider the traffic impact any further, the following traffic related conditions are to be considered and imposed on the DA.

1. The applicant should be requested to provide additional information of expected traffic generation potential and distribution to be used in the preparation of traffic management plan for the operation of the proposed development and design of the intersection configuration of the proposed intersection treatment off Greendale Road.
2. The applicant should be requested to design (in accordance with Austroads Design Guide) and construct an access treatment off Greendale Road with a minimum configuration of a deceleration lane and localized road widening to accommodate a right lane. The intersection treatment is to ensure that any existing driveways are not restricted by the proposed treatment.
3. The intersection treatment should include a reconstruction of the existing pavement in Greendale Road fronting the development site, with appropriate kerb and guttering and line marking including RPM, edge lines and appropriate fronting street lighting.

4. The intersection treatment should have appropriate sight distance in/out of Greendale Road.
5. The driveway off Greendale is to be widened to accommodate two way traffic movements in accordance with AS 2890.1.
6. Submission of detailed parking design for Traffic Committee approval.
  - The design must clearly indicate staff parking, visitor parking, hearse parking, service vehicle parking and bus and coach parking.
  - The design must comply with AS2890.1-2004 and AS2890.6-2009.
  - Submission of detailed road design for Traffic Committee approval.

Details must include speed limit management and controls, signs and markings, road widths must be submitted for Traffic Committee approval prior to Occupancy Certificate.

### **3.2.3 Suggested Deferred Commencement Condition**

An Operational Traffic Management Plan is to be prepared and submitted to Council prior to any works being undertaken on the site. The Operational Traffic Management Plan is to provide details of design of intersection treatment and agreed road widening along Greendale Road.

## **4. Roads and Maritime Services**

Given that it was the Roads and Maritime Services (RMS) who originally requested that a Road Safety Audit be undertaken for the entire length of Greendale Road, a copy of the audit was provided to the RMS for comment and consideration.

No formal comments have been received to date from the RMS.

## **5. Summary**

As outlined above a number of measures to address the deficiencies within Greendale Road could be undertaken by Council or the Roads and Maritime Services as part of a civil works program for Greendale Road. However, it is noted that no program incorporating these measures currently has been adopted by Council. Furthermore, Greendale Road is under the jurisdiction of three Council's which makes it difficult to achieve a co-coordinated approach.

Notwithstanding the implementation of a number of measures to address the issues identified within the road safety audit, concerns remain unresolved regarding the provision of a passing lane to address the issue of funeral processions increasing the potential for delays and as a consequence promoting unsafe overtaking practices of road users.

The road safety audit identifies issues with the width of the carriageway and alignment of Greendale Road. It is considered that this road safety issue is likely to be amplified as a result of the increase in traffic and increased potential for overtaking.

It is acknowledged that it is difficult to quantify predicted length of funeral processions and their frequency given the variable nature of funerals. However, it is considered appropriate for overtaking opportunities to be provided along Greendale Road. This has not formed part of the subject development application.

On this basis, it is recommended that the development application be refused for the reasons outlined in the original planning report to the Panel.





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Our Ref: DA-1133/2010  
Contact: Peter Flynn  
Ph: 9821 9284  
Date: 25 July 2012

Roads and Maritime Services  
Development Assessment Unit  
PO Box 973  
PARRAMATTA NSW 2124

Dear Sir/Madam,

**RE: ROAD SAFETY AUDIT COMPLETED FOR DA-1133/2010**  
**ADDRESS: LOT 1 DP 599308**  
**321 GREENDALE ROAD, GREENDALE NSW 2745**

As you are aware, Council is in receipt of a development application seeking consent for a cemetery and associated works at the above mentioned property.

The development application been referred to the Sydney West Joint Regional Planning Panel for determination. The matter was scheduled to be determined at a public meeting on 14 June 2012 but was cancelled due to administrative difficulties with notification letters to all interested parties. To make sure all relevant persons were notified of the determination meeting, the acting Panel Chair advised that another meeting will be scheduled at a later date.

Following the cancellation of the public meeting, Council was instructed by the acting Panel Chair to request the applicant to provide a road safety audit to be completed by an accredited road safety auditor, which examines the impact on road safety resulting from the added traffic generated by this particular development.

Following receipt of this material, Council was asked to prepare a supplementary report on the traffic audit so enabling the Panel to consider that in conjunction with the current assessment report.

This additional information has now been received. Attached for your reference is the following information:

- Covering letter prepared by Farah Georges of Design Cubicle Pty Ltd dated 20 July 2012;
- Road Safety Audit Stage 5 (existing road) prepared by Winning Traffic Solutions Pty Ltd and dated July 2012; and
- Road Safety Audit Stage 2 (Preliminary Design) prepared by Winning Traffic Solutions Pty Ltd and dated July 2012.

You are advised that Council has been directed to complete a review of this additional and has been provided with a strict time frame of 2 weeks. In this instance, any comments that the RMS which to provide must be submitted to Council no later then close of business **Thursday 2 August 2012.**

Your assistance in ensuring the above timeframe is complied with is appreciated. Should no response be provided within the prescribed timeframe, please be aware that this will be provided to the JRPP in Council's supplementary report.

Should you require any further information, please do not hesitate to contact Peter Flynn on the number at the top of this page.

Yours faithfully

A handwritten signature in dark ink, appearing to read 'Natalie Stewart', written in a cursive style.

**Natalie Stewart**  
Manager Statutory Planning