

Planning Proposal – to Rezone and Reclassify Part Lot 34 DP28122 and Part Lot 243 DP30200 located within 35 Iluka Reserve, Kiama Downs.

7.6 Preliminary Intersection Review

DIRECTORS

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Preliminary Intersection Review for Planning Proposal- Proposed Subdivision of Riverside Drive Kiama for Kiama Municipal Council

Introduction

SET Consultants have been contracted to review the proposed intersection under a planning proposal for the proposed 9 lot subdivision of part of Iluka Reserve along Riverside Drive, Kiama Downs.

This report has been prepared as a concept assessment only to identify any issues and to determine to some extent the feasibility of the proposed intersection with Riverside Drive.

Measurements of the current sight distance were taken using a basic laser level and staff set-up at the heights specified in the current Austroads standard. No survey was conducted at the time this preliminary review was written.

Further detailed design and assessment will be required for development approval and construction.

Sight Distance Assessment

A site visit was undertaken on 18th May 2016 of the current visibility at the location of the proposed road with Riverside Drive. Due to the proposed intersection only being a left-in and left-out, only the sight distance from the Northern direction was considered.

Basic equipment was set-up 5 m back from the edge of Riverside Drive at the location of the proposed intersection to assess the current sight distances. The measured current sight distance in the Northern direction was to the crest of the hill where Riverside Drive and Iluka Crescent intersect. The measured sight distance was approximately 95 m.

It was noted that sight is obscured in the Northern direction by parked cars, existing flora and an existing transmission pole. In order to have a clear line of sight approaching the proposed intersection, it is recommended that the existing flora within the nature strip to be cleared and “No Parking” signs be placed along the road shoulder up to the intersection of Riverside Drive and Iluka Crescent.

Comparison was made against the current Austroads standards, in particular “Guide to Road Design Part 4A – Unsignalised and Signalised Intersections.” The Safe Intersection Sight Distance (SISD) was calculated for the major road at the point where the proposed road intersects with Riverside Drive. The 85th percentile speed for both directions along Riverside Drive where taken from the traffic report provided by Kiama Municipal Council.

The calculated SISD in the North-West direction (South bound traffic) was 156 m. A mark-up of the required sight distances in relation to the proposed intersection is shown in the aerial photo in Appendix A. It can be seen in the overlay shown in Figure A1 that the current sight distance is not as long as the required sight distance, and is not possible as the required sight distance extends past the crest along Riverside Drive.

It is noted that whilst conducting the site inspection, the current posted speed limit has been reduced to 60 km/h opposed to the 70 km/h when the traffic report was done. Allowance was made for the reduced posted speed in the calculation of the required sight distance and should be verified by completing an updated traffic report.

If considering the Extended Design Domain (EDD) sight distance in accordance with “Guide to Road Design Part 4A – Unsignalised and Signalised Intersections,” the required sight distance can be reduced to 127 m. With the inclusion of a left-out acceleration lane the collision point will move further south to meet the requirements of the EDD sight distance, shown in Figure A2.

Proposed Intersection

The proposed intersection treatment was determined in accordance with the current Austroads standards, in particular “Guide to Road Design Part 4A – Unsignalised and Signalised Intersections.” In order to determine the intersection treatment required for the proposed intersection, the major road traffic volume (Q_M) was taken from the traffic report provided by Kiama Municipal Council and the turn volume (Q_L) was determined from “RTA Guide to Traffic Generating Developments Section 3 – Land use Traffic Generation”. The turn treatment determined for the proposed intersection was a Basic Left-Turn Treatment (BAL).

The required dimensions for the proposed BAL were determined based on the requirements of Figure 8.2 from “Guide to Road Design Part 4A – Unsignalised and Signalised Intersections”, which are summarised in Figure 2 below. The outline of the proposed BAL is shown overlayed on an aerial photo in Appendix B.

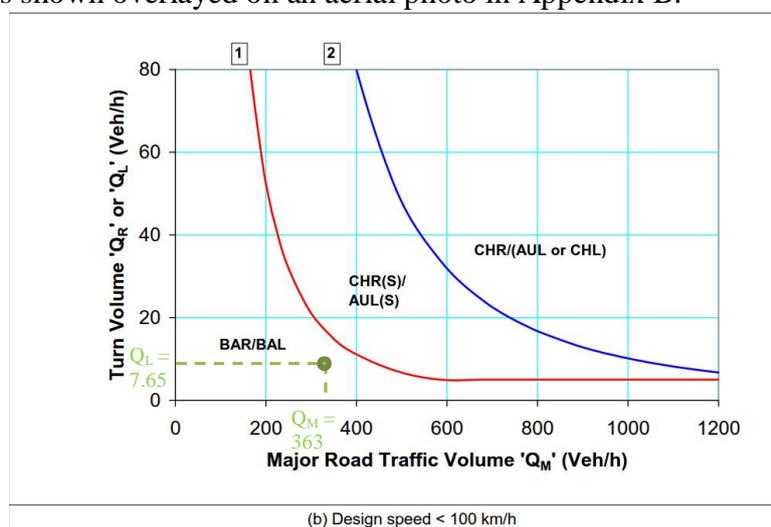


Figure 1: Determination of Intersection Treatment (Adapted from Guide to Road Design Part 4A – Unsignalised and Signalised Intersections)

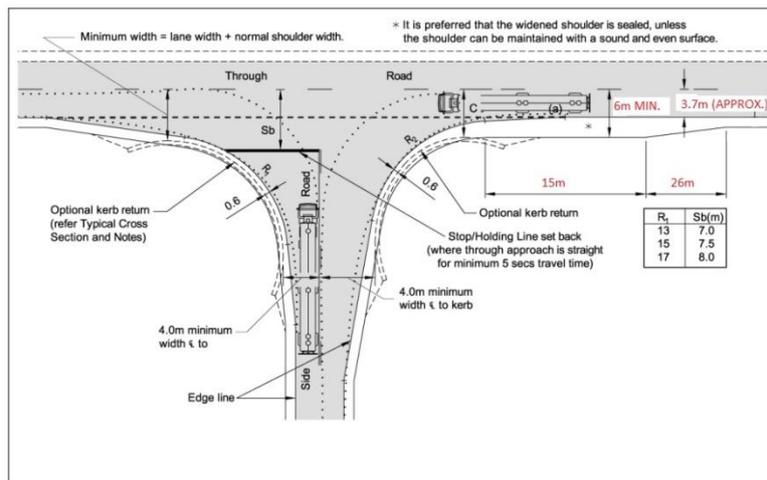


Figure 2: Proposed BAL Intersection Dimensions (Adapted from Guide to Road Design Part 4A – Unsignalised and Signalised Intersections)

Based on the overlay shown in Figure B1 it can be seen that it is feasible to widen Riverside Drive to accommodate the proposed BAL.

Recommendations

Based on the requirements of the current Austroads standards and the assessment made from the site visit undertaken on the 18th May 2016, the following recommendations for the proposed intersection are as follows:

- A Basic Left-Turn Treatment (BAL) is required for the proposed intersection.
- Existing flora within the nature strip to be cleared and “No Parking” signs be placed along the road shoulder up to the intersection of Riverside Drive and Iluka Crescent.
- An updated traffic report to be completed based on the current reduced posted speed limit in order to confirm the allowance made for the reduced posted speed limit in the calculation of the required sight distance.
- Removal and re-alignment of existing safety barrier to allow for widening of the shoulder to construct a left-out acceleration lane to meet the EDD sight distance requirements.

If further information is required for the preliminary review of the proposed intersection, please don't hesitate to contact us.

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Figure A2: Required Extend Design Domain Safe Sight Distance (EDD SISD) for proposed intersection



Appendix B



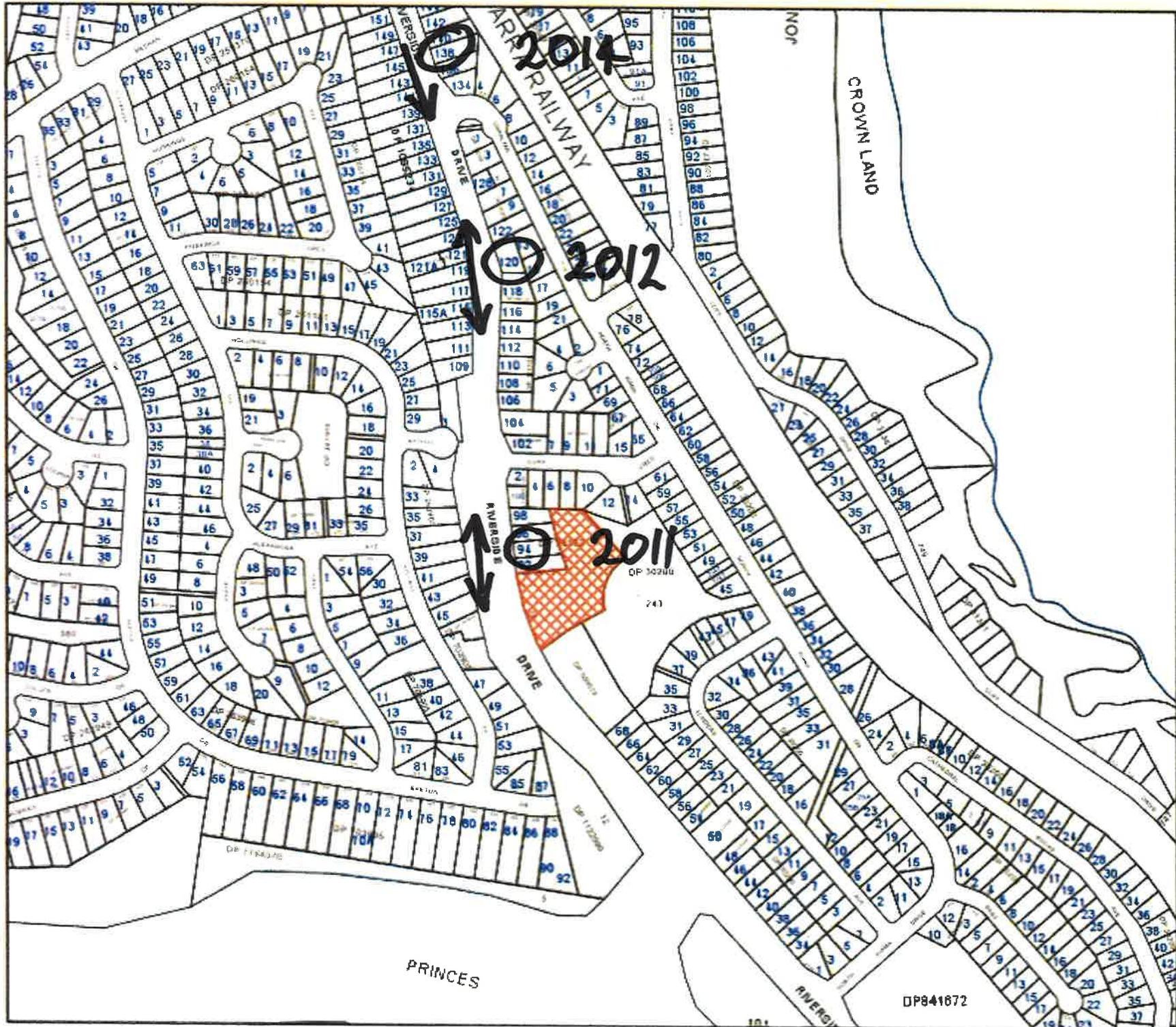
Figure B1: Proposed BAL Intersection Overlay





KILIMA MUNICIPAL COUNCIL

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Projection: GDA 1984
MGA Zone 56

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Scale: 1:5000 @ A4

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PRINCES

DP841672

Traffic Data Report

Area	<input type="text" value="Area B Kiama Downs"/>	Street/Road	<input type="text" value="Riverside Drive"/>
Site Number	<input type="text" value="0"/>	Site Description	<input type="text" value="Outside No 94"/>

Start Date	<input type="text" value="16/09/2011"/>	End Date	<input type="text" value="3/10/2011"/>
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Average Daily Traffic vpd

Average Daily Traffic (N/E) vpd

Peak Hourly Volume (N/E) v

Peak Day/Time (N/E)

Average Daily Traffic (S/W) vpd

Peak Hourly Volume (S/W) v

Peak Day/Time (S/W)

Posted Speed Limit km/h

85th Percentile Speed (N/E) km/h

85th Percentile Speed (S/W) km/h

Percentage Speeding Vehicles (N/E) %

Percentage Speeding Vehicles (S/W) %

Maximum Recorded Speed (N/E) km/h

Maximum Recorded Speed (S/W) km/h

Percentage Commercial Vehicles (N/E) %

Percentage Commercial Vehicles (S/W) %

File Reference