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Planning Report

258 Ecclestone Road, Riverside

Traffic Impact Assessment

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Document	

1. INTRODUCTION

The proposed development is for a 37 lot low density residential subdivision on a parcel of land located on Ecclestone Road, in Riverside.

This traffic report has been prepared in conjunction with the Department of Transport's "Traffic Impact Assessment" (TIA) Guidelines (draft) by 6ty Pty Ltd on behalf of the owner, Jason Sherriff.

2. EXISTING CONDITIONS

Location:

258 Ecclestone Road, Riverside, Tasmania,

Title References: CT 43468/1

The property is a 36.9 Ha parcel of land on Ecclestone Road west of Valley View Drive. The land is on the northern side of the road and is largely a forested, eastern facing hillside. The land is vacant land and is zoned Low Density Residential in the West Tamar Interim Planning Scheme 2013.

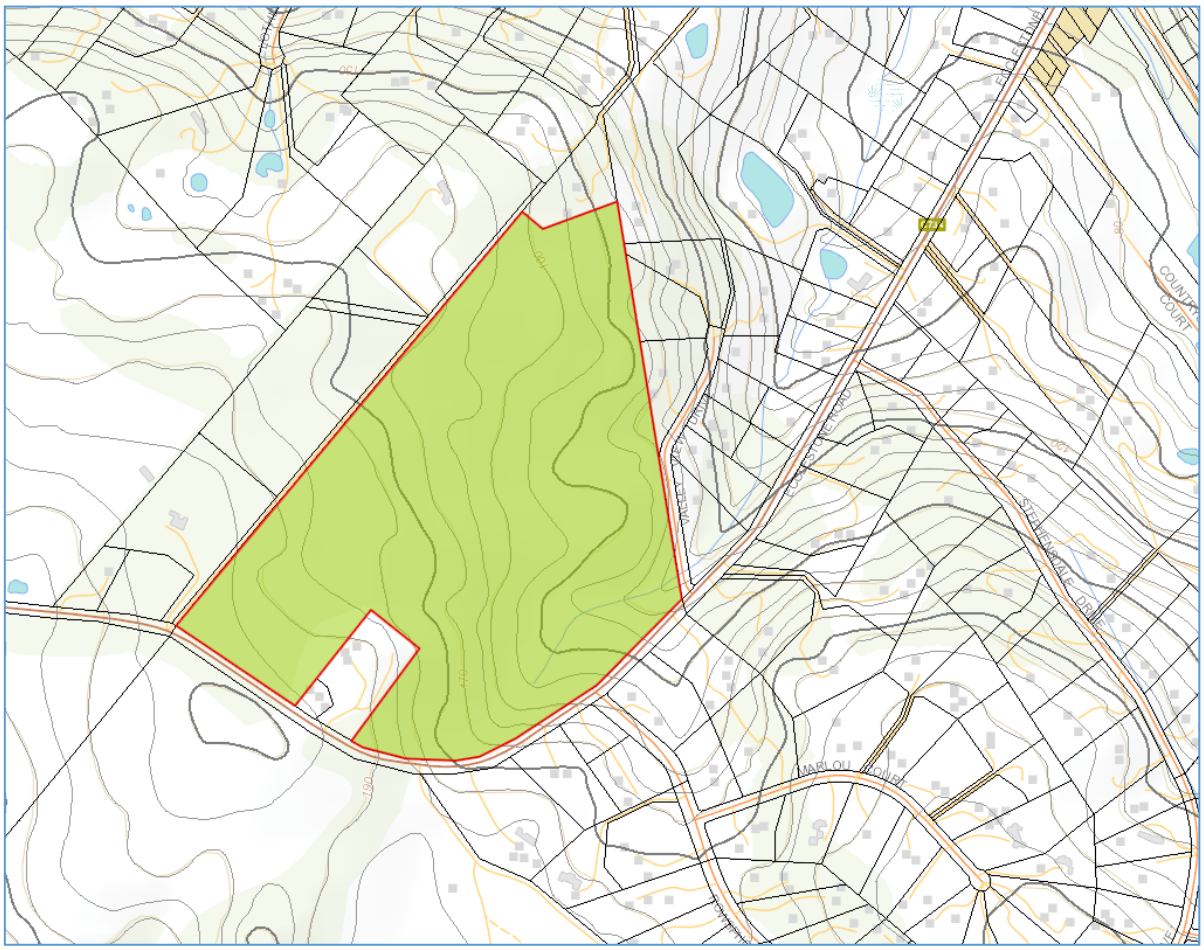

Image 1 - Site Location in Riverside

The Existing Roads:

Ecclestone Road (C734) is a collector road linking Riverside with Rosevale and Westwood. It has a typical pavement width of 6.0 metres of sealed pavement with 1.2m gravel shoulders. The posted speed limit is 80 km/hr for the site frontage, dropping to 60 km/hr 280m to the north of the Valley View Drive intersection. The 80 km/hr speed zone commences some 110m west of the site, as Ecclestone Road descends from a bend and crest.

Valley View Drive is a sealed local road of similar dimensions and provides a limited frontage to the land. Both the road reservations contain water supply, underground stormwater, telecommunications and overhead power. There are no footpaths in the locality and the land is not within a sewer district.

Image 2 – View looking north on Valley View Drive, development site on left

Image3 – View looking southwest on Ecclestone with development site on right

Existing Land Use:

The site wraps around the separately owned residences on 260 and 264 Ecclestone Road and is currently vacant land, other than minor outbuildings. A gravelled driveway leading into the land from Ecclestone Road is located on the western border, adjacent to the driveways to the adjoining properties of 290, 340 and 342 Ecclestone Road.

Image 4 – Aerial Image of site with 5m contours

3. TRAFFIC VOLUMES

A traffic count for Ecclestone Road has been undertaken by Council in July 2020. The results of the traffic count are summarised in the table below:

Direction	Vpd	% heavy vehicles	85th percentile speed (km/hr)	Maximum speed (km/hr)
Heading east toward West Tamar Highway	336	4.8	83	107
Heading west	323	4.3	82	101

The traffic counter is indicating daily traffic counts of 660 vpd and an 85% percentile speed of just over 80km/hr at the beginning of the 80km/hr zone located some 100m to the west of the site boundary. It is expected that that the 85% percentile speed at the proposed intersection will be somewhat below the speed limit of 80 km/hr due to the bend and crest in the road between the traffic counter location and the proposed intersection.

4. PROPOSED DEVELOPMENT

The proposed development of the land is to subdivide the land into a low density (of 0.5 Ha minimum size) lots accessed off an internal road network to create a total of 37 lots terminating in a court bowl with a walkway connection through to Valley View Road. A large balance lot is to be retained which includes the bulk of the road frontage to Ecclestone Road.

In terms of traffic impact, the development proposes the following:

1. The creation of a new road junction off Ecclestone Road to provide access to 36 lots.
2. The construction of an internal road to service the lots
3. The retention of the existing driveway access to the land as access for Lot 1.
4. The provision of a walkway link to Valley View Drive for both service connections and for pedestrian access.

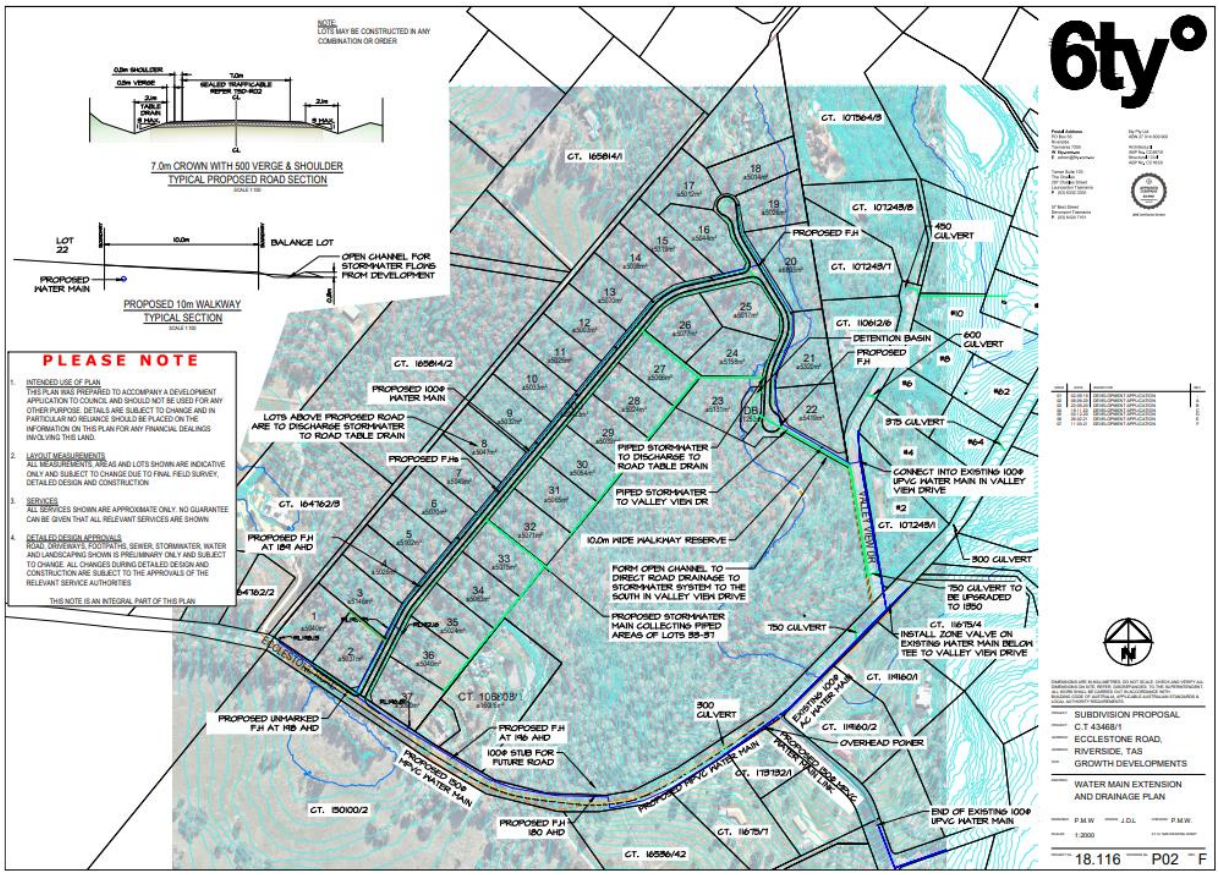

Image 5 - The proposed subdivision layout.

5. STAGING OF THE WORKS

The Development Application provides for the staging of the subdivision into 6 stages as shown on the following plan.

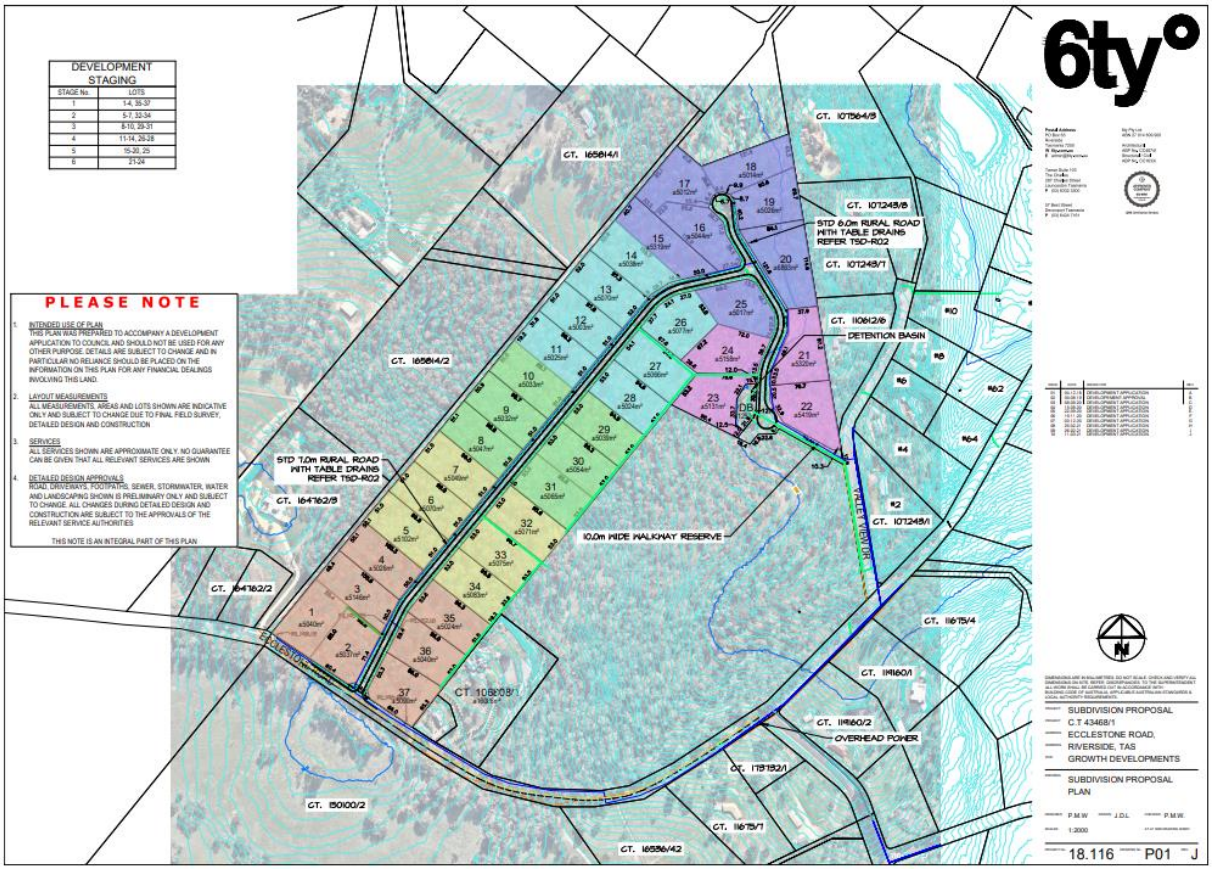

Image 6 - The proposed subdivision staging.

The recommended parameters for the staging of road works are as follows:

a) Construction of the new intersection on Ecclestone Road including all works required to support the ultimate subdivision. This work is required prior to the creation of any new titles and is to be completed as part of Stage 1 of the subdivision.
b) Construction of a walkway connection to Valley View Drive to provide service extensions (water and stormwater). This will be required for stages that will discharge stormwater via Valley View Road into the Ecclestone Creek (Stages 3 -6 inclusive).
c) Construction of a temporary turning head to allowed staged road works. In the absence of full road construction to one or both proposed court heads, there will be a requirement for a temporary turning head within the new road. Such a turning head requires an all weather surfacing for the turning of fire trucks and service vehicles, to be constructed within the balance land of the subdivision and is to be removed or incorporated into the final road design when the road is extended. This will apply to Stages 1-4.

6. TRIP GENERATION

A daily trip generation rate of 9 traffic movements per residence is considered appropriate to residential subdivision, equating to 324 vpd for the ultimate development of the new road. Of these movements, 10% or 33 vehicle movements will occur during the peak hour (discounting Lot 1 as this lot has an independent driveway).

7. TRIP ASSIGNMENT

The existing road layout is such that virtually all traffic will use Ecclestone Road as a direct connection to the West Tamar Highway. This is the easiest approach for commuting traffic to Launceston, the local shops of Riverside and the schools along West Tamar Road. For design purposes, it is assumed that 90% of all peak hour traffic will be tidal in nature, leaving for Launceston in the morning and returning in the evenings.

8. VEHICLE TYPES

The predominant vehicle type will be passenger vehicles for with the largest vehicle routinely visiting the site being the fortnightly garbage collection service.

9. ASSESSMENT YEARS

Construction is likely to begin in early 2022 with the initial stage of works (the intersection construction) being fully developed in late 2022. The bulk of the subdivision is anticipated to complete prior to 2027 and the intersection assessment is to be calculated for the traffic volumes at the end of the10 year assessment period (in 2032).

10. TRAFFIC GROWTH

The land to the west of the site accessed via Ecclestone Road is zoned Rural Resource and is comprised of established rural lifestyle properties and larger farms. There are very limited opportunities for growth in this region.

For the purposes of design, traffic growth in Ecclestone Road at the site frontage is conservatively estimated to be 1.0% per annum increasing the traffic volumes from 660 vpd in 2022 to 728 vpd by 2032.

11. EXISTING TRAFFIC ISSUES

There are no known traffic issues in Ecclestone Road in the vicinity of the proposed subdivision.

12. ROAD SAFETY

Enquiries with the Department of State Growth Crash Data section have revealed that there has been only a single recorded accident on the segment of Ecclestone Road, between Stephensdale Drive and Rowsphorn Road.

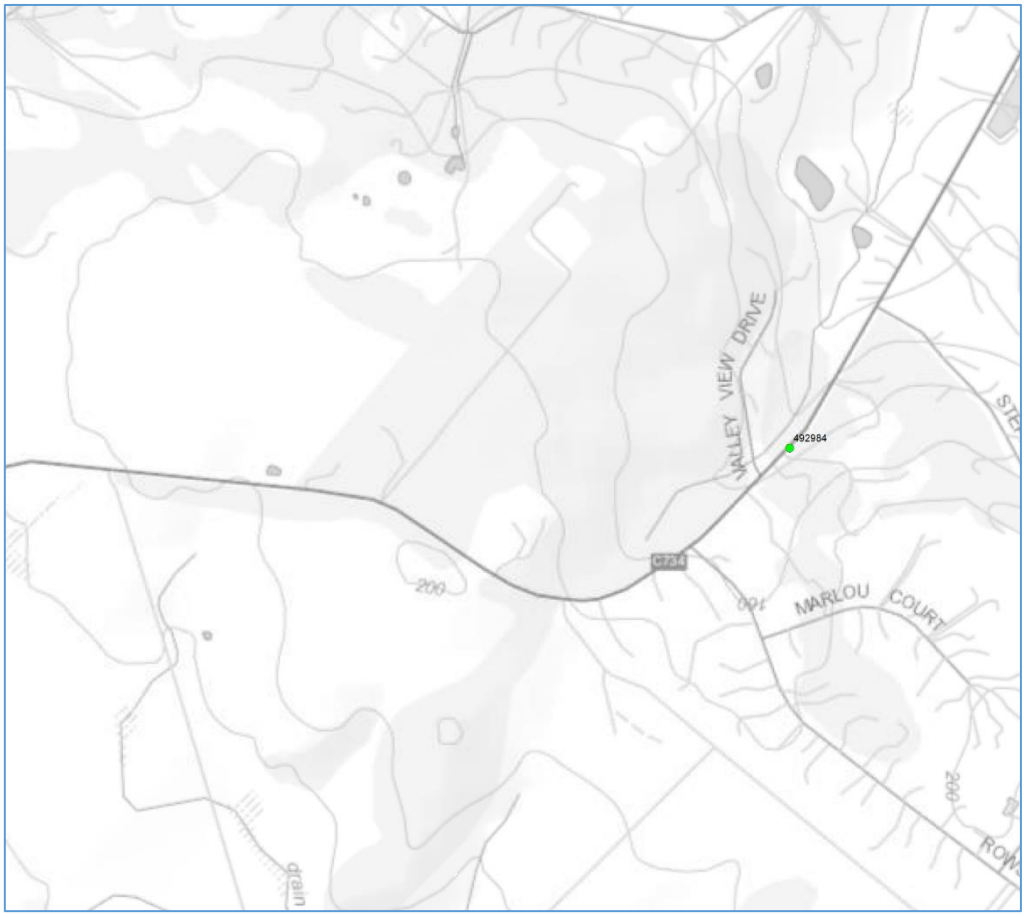

Image 7 – State Growth Accident Report (extract).

The accident occurred in the early evening where a motorcycle left the road. The accident was a single vehicle accident and unrelated to weather or to traffic.

13. ACCESS POINTS

The proposed development is to construct a new court approximately midway between the existing driveways of 290 Ecclestone Road and that of 264 Ecclestone Road, these being some 250m apart.

The site of the new intersection is located at a section of straight road and on a gentle crest so as to maximize the sight distances. The treed nature of the properties on either side of the road and the presence of two bends limits the available sight distance despite the location of the new access on the most advantageous section of the frontage.

14. SIGHT DISTANCE ACCESS PARAMETERS

The proposed new road intersection, being located midway between the bends on this section of Ecclestone Road and on a gentle crest, has a sight distance of 190m to the west and 215m to the east, the latter being the approach from Riverside.

For design purposes, it is assumed that the 85% percentile speed will be the posted speed limit for Ecclestone Road for vehicles travelling east towards Riverside and 75 km/hr for westbound traffic, the latter vehicles travelling within the 80 km/hr speed zone, in an ascending road and shortly after negotiating a 240m radius bend.

The required sight distance, pursuant to Table E4.7.4 of the West Tamar Interim Planning Scheme Road and Railway Assets Code, is 175m for a vehicle travelling at the 85% percentile speed of 80 km/hr and 157m for an 85% percentile speed of 75 km/hr. The proposed new intersection exceeds the requirements for sight distance with a minimum sight distance of 190m.

The access driveway for Lot 1 is to be the existing constructed driveway to the land, located immediately adjacent to the western boundary. This driveway, near the apex of the bend in Ecclestone Road, has a measured sight distance to the east of some 160m, measured from the 1.2m elevation above surface on the driveway to the same height on the road westbound land. The sight distance to the east is limited by a gentle crest in the road located some 75m to the east, combined with the driveway approach being slightly lower than the road as it crosses the road table drain. The sight distance to the west exceeds 400m, being at the end of a long, straight section of Ecclestone Road.

For vehicles turning right from the driveway of Lot 1, the sight distance for west bound traffic is 160m which is less than the 175m required for a vehicle travelling at the speed limit of 80 km/hr but is greater than the 157.5m sight distance that would apply for an 85% percentile speed of 75 km/hr. The immediately adjoining driveways for 290,340 and 342 Ecclestone Road have slightly lesser sight distances due to the increasing distance from the crest in the road combined with the descent of Ecclestone Road from the driveway to Lot 1. The sight distance from the Lot 1 driveway could be improved by regrading of the driveway as it crosses the table drain so as to marginally increase the height of the driver view line.

In summary, the proposed new road junction, located on the crest, will have ample sight distance in both directions. The Lot 1 driveway sight distance, whilst marginal, also exceeds the minimum requirements for sight distance at its current level and this can be improved by regrading of the driveway to meet modern standards of construction.

Image 8 – Looking west along Ecclestone Road from proposed road entrance.

Image 9 – Looking east along Ecclestone Road from proposed road entrance.

Image 10 - Looking west from over to crest to Lot 1 driveway (car in driveway) from 1.2m above seal.

Image 11 - Looking east from Lot 1 driveway from 1.2m above existing driveway surface.

15. VOLUME CALCULATIONS

The traffic volumes for the intersection are based on the following criteria:

- The subdivision is fully developed and the volumes of traffic on Ecclestone Road are those at the end of the 10-year assessment period.
- 90% of all peak hour traffic from the subdivision will be on the eastern leg of Ecclestone Road turning left from the new road in the morning and turning right from Ecclestone Road in the evenings.
- The direction split in peak hour traffic will be 90/10 – eg. 90% of the subdivision traffic leaving during the morning peak with 10% returning.
- The peak hour traffic will be 10% of the average daily traffic on the roads.
- Ecclestone Road peak hour traffic is 73 vph
- Subdivision Road peak hour traffic is 33 vph.

Traffic Turning Volumes:

For the AM peak hour, the following major road turning volumes occur:

Turn Type	Q_R or Q_L (v/hour)	Q_M (v/hour)
Right (in)	3	66
Left (out)	30	66
Right (out)	3	3+66+7 = 76

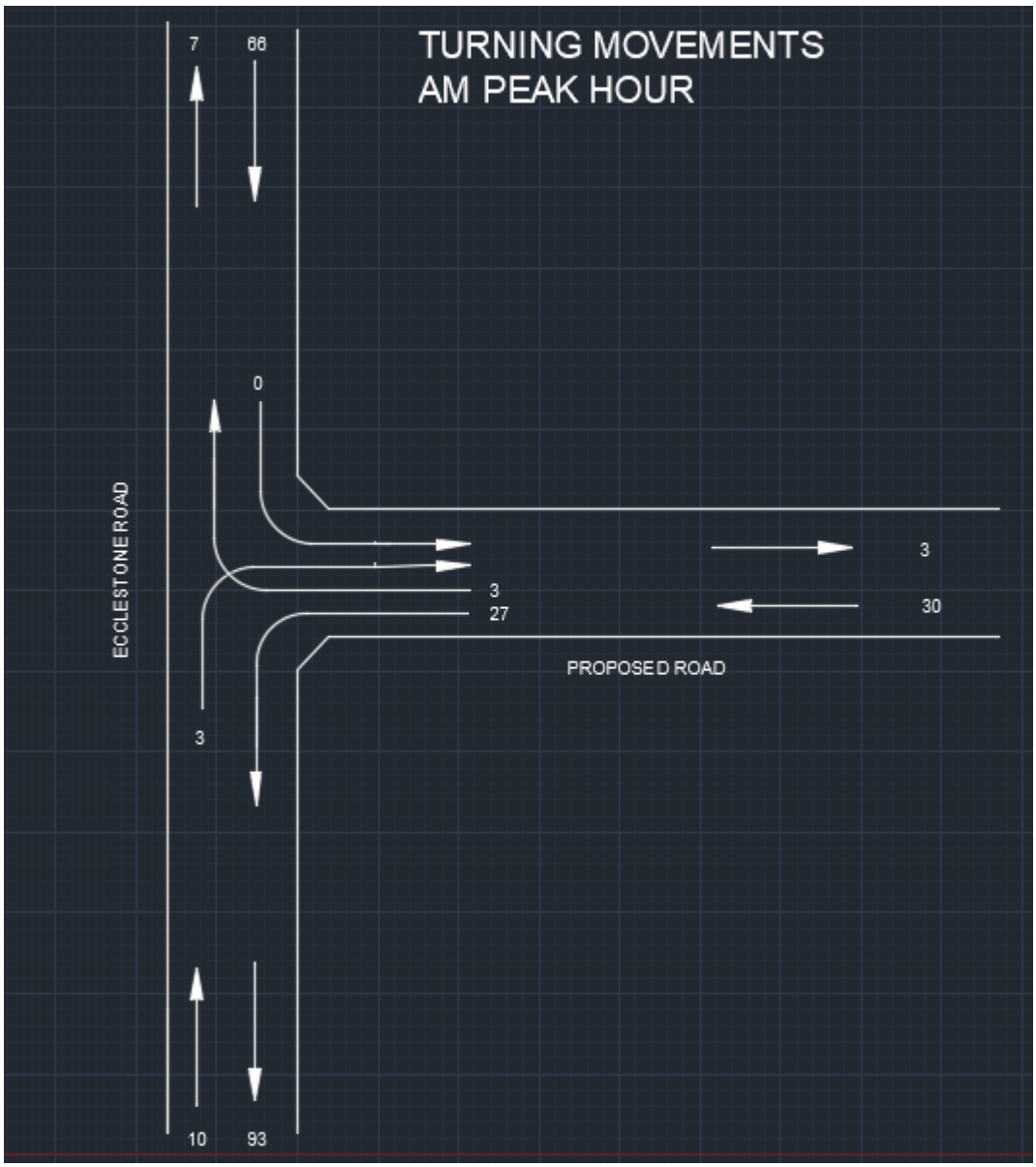

Image 12 – Morning turning movements at proposed intersection.

For the PM peak hour, the following major road turning volumes occur:

Turn Type	Q_R or Q_L (v/hour)	Q_M (v/hour)
Right (in)	27	7
Left (out)	3	7

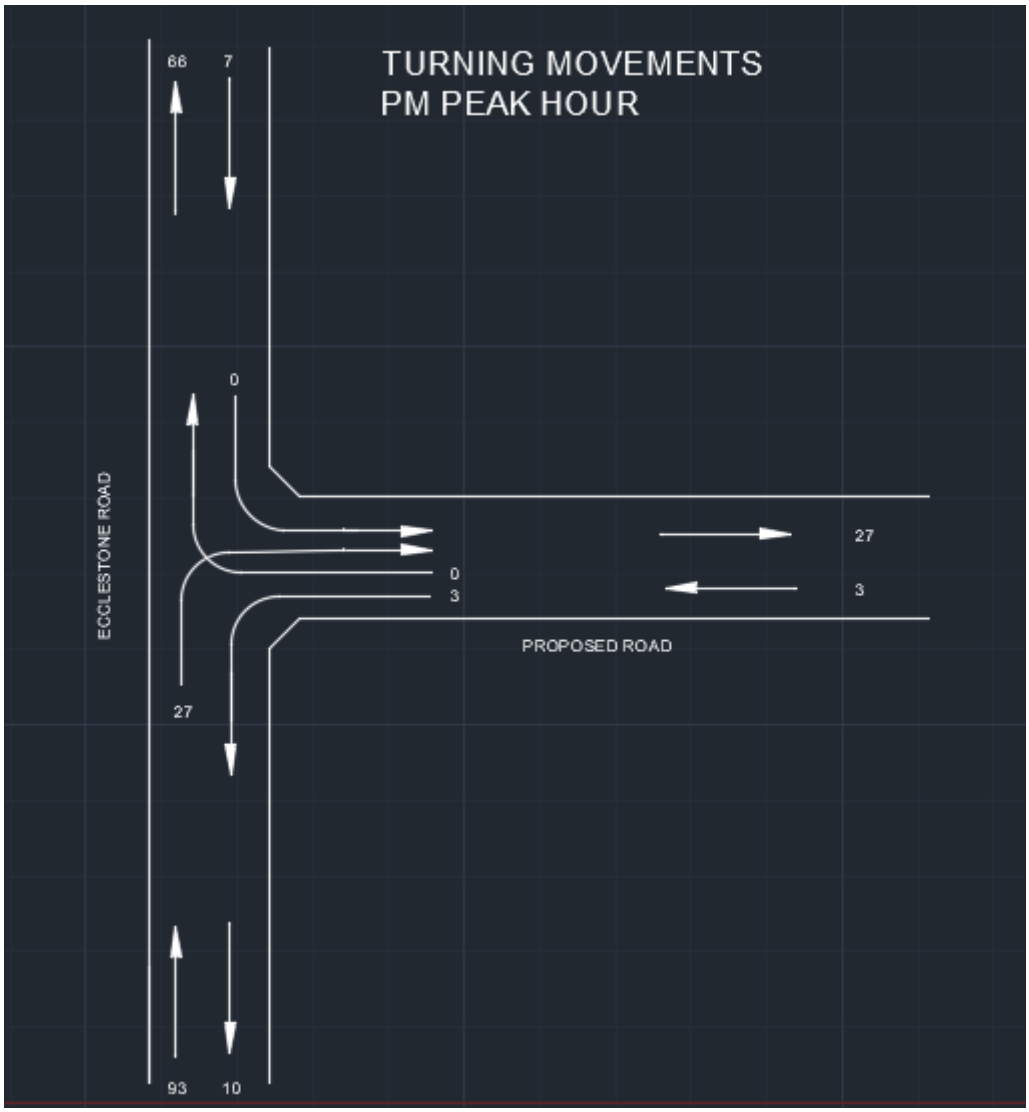

Image 13 – Evening turning movements at proposed intersection..

It can be seen from the following extract of the Austroads publication “Guide to Road Design Part 4: Intersections and Crossings – General” that the turn manoeuvres at the new intersection, combined with the through traffic in Ecclestone Road, all fall within a type BAR/BAL treatment for the new intersection, and are at the lower end of the warrant diagram.

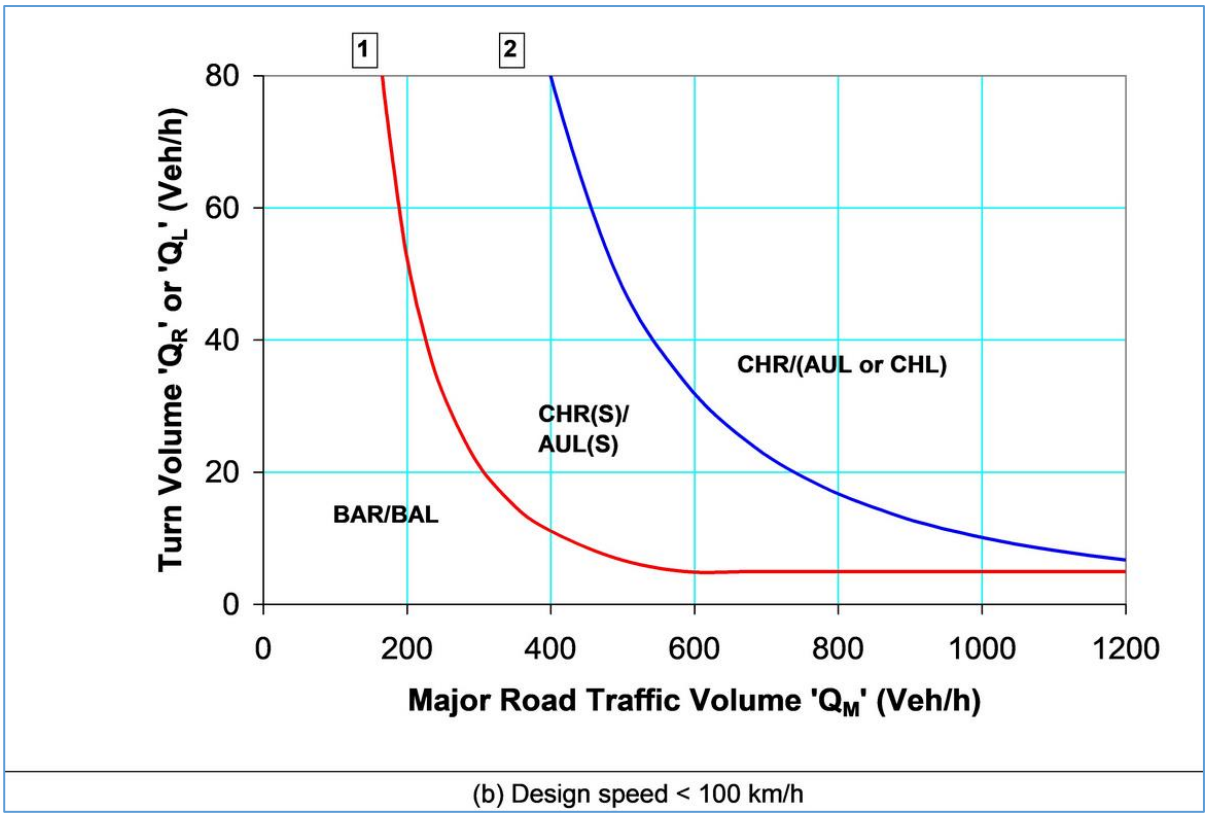

Image 14- Turning warrants.

For right turning traffic from Ecclestone Road, the critical period is the PM peak hour where 27 vehicles per hour turn right from a stream of 90 vehicles per hour. The Launceston bound traffic is only 7 vehicles per hour so significant delay is unlikely however cars will attempt to pass cars slowing for a right turn. A sealed shoulder of some 122m in length (including tapers) is required for a BAR treatment.

There are no significant volumes of left turning movements from Ecclestone Road into the new road in either peak hour. No particular left turn treatment is required at this intersection.

16. PLANNING SCHEME REQUIREMENTS

The West Tamar Interim Planning Scheme 2013 applies to this site, specifically the provisions of Section E4 Road and Railway Assets Code. As the proposal Involves to the creation of existing access points to a road, a TIA is required pursuant to sectionE4.5.1 of the Code where performance criteria are relied on.

Going through the Code sections:

Section E4.6.1
Acceptable Solution A1 does not apply as the road is not on or within 50m of a road as being classified as Category 1 or 2 in the State Road Hierarchy. It is a local road managed by Council.

Acceptable Solution A2 does not apply as the road has a speed limit of greater than 60 km/hr. It has a posted speed limit of 80 km/hr for the frontage of the site.

Acceptable Solution A3 cannot be complied with as it is a new intersection on the road and therefore Performance Criteria P3 must be considered. Ecclestone Road is not a limited access road nor a category 1, 2 or 3 road in the State road hierarchy resulting in only P3 (c) being relevant in this section of the Code. Performance Criteria P3 (c) can be satisfied as the new intersection will have adequate sight distance and design, as detailed in the preceding sections of this report.

Section E4.7.1
This section does not apply as the development is not on or adjacent to a Category 1 or Category 2 road, a railway or a future road.

Section E4.7.2
Acceptable Solution A1 applies as the proposal does require the construction of multiple access points to an existing road and hence the Performance Criteria are required to be considered.

Performance Criteria P1 is satisfied as the proposed driveways and new intersection each will have adequate sight distance and design, as detailed in the preceding sections of this report.

Acceptable Solution A2 does apply as the road speed limit are greater than 60 km/hr and hence the Performance Criteria P2 must be considered. Ecclestone Road is not a limited access road nor a category 1, 2 or 3 road in the State road hierarchy resulting in only P2 (c) being relevant in this section of the Code. Performance Criteria P2 (c) can be satisfied as the new intersection each will have adequate sight distance and design, as detailed in the preceding sections of this report.

Section E4.7.3
This section does not apply as the development is not located in the vicinity or a railway or a rail crossing.

Section E4.7.4
Acceptable Solution A1 (a) requires that an access or junction must comply with the Safe Intersection Sight Distance shown in Table E4.7.4 and provides a simple schematic for a road junction in Figure E4.7.4. The proposal does meet the requirements of Acceptable Solution A1 (a) for the new road junction. Acceptable Solutions A1 (b) and (c) do not apply for this application as the proposal does not involve a rail level crossing or a temporary access.

17. RECOMMENDED WORKS

The existing road formation will require local widening to install a BAR type treatment at the new intersection. The detail design of the new road should ensure an elevated entrance to maximise sight distance to the west.

18. STREET FURNITURE

No changes to street furniture are required by this development save for signage indicating the new road.

19. PEDESTRIAN ACCESS

There is no provision for pedestrian access in the local area with footpaths not being common in low density residential areas where lot frontages typically exceed 50m and there is little demand for public open space.

20. STATE ROADS

No works are proposed that will affect State Roads as all of the roads are Council managed.

21. SUMMARY

The development of the site is unlikely to affect traffic amenity or safety on Ecclestone Road provided that the intersection design incorporates a BAR local widening as suggested by the recommendations of this report. The traffic volumes generated are low as are traffic numbers on Ecclestone Road itself.

It is further recommended that the existing driveway of the land be upgraded to comply with the LGAT Standard drawing TSD-R03-v3 for a rural access driveway with consideration being given to elevating the driveway within the road reservation so as to maximise the available sight distance.