

[12/02/2015]



GEORGE  
TOWN  
COUNCIL

## LEAM ROAD TRAFFIC STUDY



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## Background

Leam Road is located at Hillwood Tasmania. It is approximately 4km in length with an average seal width of 5 metres. Resealing history is unknown however the majority was resealed under the 2014 Capital Work program.

## Road Features

Leam Road is classified as a class 5 local road (Veith 2006,p13) and is considered as an undulating low speed rural road (Barton 2009, p16). Leam Road is a well-developed road with culverts, table drain and property accesses and there are various services located adjacent including overhead power, water and telecommunication.

The road is fairly undulated with turning radius ranging from 80m to 300m horizontally. Further detailed survey is required to determine the vertical radius of the road.

Due to its limited sight distance, road furniture is in place including guild posts, a 50km/h speed limit sign and a T junction sign.

## Proposed Development

The developer is proposing to subdivide lot PID 7236331, PID 7236323, PID 6466215, PID 2781699 and PID 2781701 (refer drawing S02) into smaller lots. It is estimated that the proposal will result in an additional 250 smaller lots burdening the existing road with an average 500 vehicles a day.

As PID 2781701 has only single access to the main road, a secondary access is also proposed in conjunction with the development.

## Scope of Work

### Assumptions

The objective of this report is to provide preliminary design and costing on the reconstruction of Leam Road to cater for the additional traffic.

Data and assumptions considered in the preliminary design/upgrade of Leam Road:

- a. Annual average daily traffic (AADT) : 600 veh/day
- b. Assume minimal heavy vehicle : 6% class 3 and above
- c. Design life : 30 years (Barton 2010, p30)
- d. 85% vehicle speed : 68km/h (traffic counter result)
- e. Annual Growth Rate: 1%
- f. Average area for each lot : 5000m<sup>2</sup>

### Recommendations

The following are proposed recommendations:

- a. Widening Leam Road pavement to 6.2m wide (1.6km) (Barton 2010, p35)

The lane width and road surface condition have a substantial influence on the safety and riding comfort of the road user. Widening Leam Road may incur additional cost during construction however it will be partially offset due to reduction of long-term shoulder maintenance cost. In addition, road users perceive narrow roads as a fixed hazard and therefore move closer towards the opposite land thus increasing the risk of head on collision.

Results from a recent survey show the seal on Leam Road is holding up well and therefore does not justify reconstruction. Leam Road widening can be achieved by:

- i. Boxing out the shoulder to achieve overall pavement width of 6.2m
- ii. Remove shoulder material and backfill with base gravel
- iii. Reseal the area.

b. Barrier line along reconstructed Leam Road

Single barrier line along the reconstructed section of Leam Road is required due to the following reasons:

- i. Limited sight distance due to its windy nature
- ii. Standards Australia 1742.2 (1742.2 2009 p. 145) dictates that roads with pavement width greater than 5.5m or more shall require dividing lines and for this instance a single barrier line.

c. Reconstruction of driveway

Some existing driveways will require reconstruction to meet Local Government Association of Tasmanian (LGAT) standard mainly to TSD-R03-v1

- d. Will require liaising with TASNETWORK on relocation of power pole
- e. Reinstall guard post at 10m centers (1742.2 2009 p. 59)
- f. Construct two access way to PID 2781701 in accordance to LGAT standard TSD-R01-v1
- g. Reinstall table drains
- h. Lengthen existing culverts
- i. Some fences, trees and shrubs may need to be relocated or removed.

In the near future, Council is also required to upgrade Hillwood Jetty Road by widening it to cater for the significant increase in traffic due to the subdivision. The scope of this study does not cover that in detail.

Based on preliminary estimates, the total cost for the above work is \$ 510,684.20 + GST (Cost includes 30% contingency).

## References

Barton, D, Guide to Road Design Part 3: Geometric Design

Gilde, G, Guide to Road Design Part 2: Design Considerations

Standards Australia 2009, Part 2: Traffic Control Devices for General Use, AS1742.2 2009, Standards Australia

Veith, G, Guide to Road Design Part 2: Design Considerations

## Appendices

1. Traffic Counter Result
2. Speed Histogram
3. Preliminary Cost Estimates
4. Preliminary Drawings

## MetroCount Traffic Executive Daily Classes

### DailyClass-111 -- English (ENA)

**Datasets:**

**Site:** [Leam Rd] O/S 373  
**Direction:** 1 - North bound, A hit first. **Lane:** 0  
**Survey Duration:** 8:32 Tuesday, 10 February 2015 => 8:29 Friday, 20 February 2015  
**Zone:**  
**File:** Leam Rd20Feb2015.EC0 (Plus)  
**Identifier:** K477XC6T MC56-6 [MC55] (c)Microcom 02/03/01  
**Algorithm:** Factory default (v3.21 - 15275)  
**Data type:** Axle sensors - Paired (Class/Speed/Count)

**Profile:**

**Filter time:** 8:33 Tuesday, 10 February 2015 => 8:29 Friday, 20 February 2015  
**Included classes:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12  
**Speed range:** 10 - 160 km/h.  
**Direction:** North, East, South, West (bound)  
**Separation:** All - (Headway)  
**Name:** Default Profile  
**Scheme:** Vehicle classification (AustRoads94)  
**Units:** Metric (meter, kilometer, m/s, km/h, kg, tonne)  
**In profile:** Vehicles = 921 / 921 (100.00%)



## Daily Classes

### DailyClass-111

**Site:** Leam Rd.0.0N  
**Description:** O/S 373  
**Filter time:** 8:33 Tuesday, 10 February 2015 => 8:29 Friday, 20 February 2015  
**Scheme:** Vehicle classification (AustRoads94)  
**Filter:** Cls(1 2 3 4 5 6 7 8 9 10 11 12 ) Dir(NESW) Sp(10,160) Headway(>0)

Monday, 9 February 2015

|              | 1    | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
|--------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Total</b> |      |     |     |     |     |     |     |     |     |     |     |     |
| <b>Mon*</b>  | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 0            |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)          | 0.0  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Tue*</b>  | 55   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 57           |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)          | 96.5 | 0.0 | 1.8 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Wed</b>   | 93   | 3   | 5   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 102          |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)          | 91.2 | 2.9 | 4.9 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Thu</b>   | 109  | 3   | 5   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 119          |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)          | 91.6 | 2.5 | 4.2 | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Fri</b>   | 98   | 8   | 6   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 112          |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)          | 87.5 | 7.1 | 5.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Sat</b>   | 85   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 86           |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)          | 98.8 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Sun</b>   | 88   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 89           |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)          | 98.9 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

### Average daily volume

|                    |      |     |     |     |     |     |     |     |     |     |     |     |
|--------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Entire week</b> | 94   | 2   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 100                |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)                | 94.0 | 2.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Weekdays</b>    | 99   | 4   | 5   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 110                |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)                | 90.0 | 3.6 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Weekend</b>     | 86   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 87                 |      |     |     |     |     |     |     |     |     |     |     |     |
| (%)                | 98.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

\* - Incomplete

## Daily Classes

### DailyClass-111

**Site:** Leam Rd.0.0N  
**Description:** O/S 373  
**Filter time:** 8:33 Tuesday, 10 February 2015 => 8:29 Friday, 20 February 2015  
**Scheme:** Vehicle classification (AustRoads94)  
**Filter:** Cls(1 2 3 4 5 6 7 8 9 10 11 12 ) Dir(NESW) Sp(10,160) Headway(>0)

#### Monday, 16 February 2015

|                   | 1    | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
|-------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Total</b>      |      |     |     |     |     |     |     |     |     |     |     |     |
| <b>Mon</b><br>114 | 100  | 3   | 10  | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| (%)               | 87.7 | 2.6 | 8.8 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Tue</b><br>89  | 82   | 3   | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| (%)               | 92.1 | 3.4 | 2.2 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Wed</b><br>105 | 98   | 1   | 6   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| (%)               | 93.3 | 1.0 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Thu</b><br>48  | 45   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| (%)               | 93.8 | 0.0 | 6.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Fri*</b><br>0  | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| (%)               | 0.0  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Sat*</b><br>0  | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| (%)               | 0.0  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Sun*</b><br>0  | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| (%)               | 0.0  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

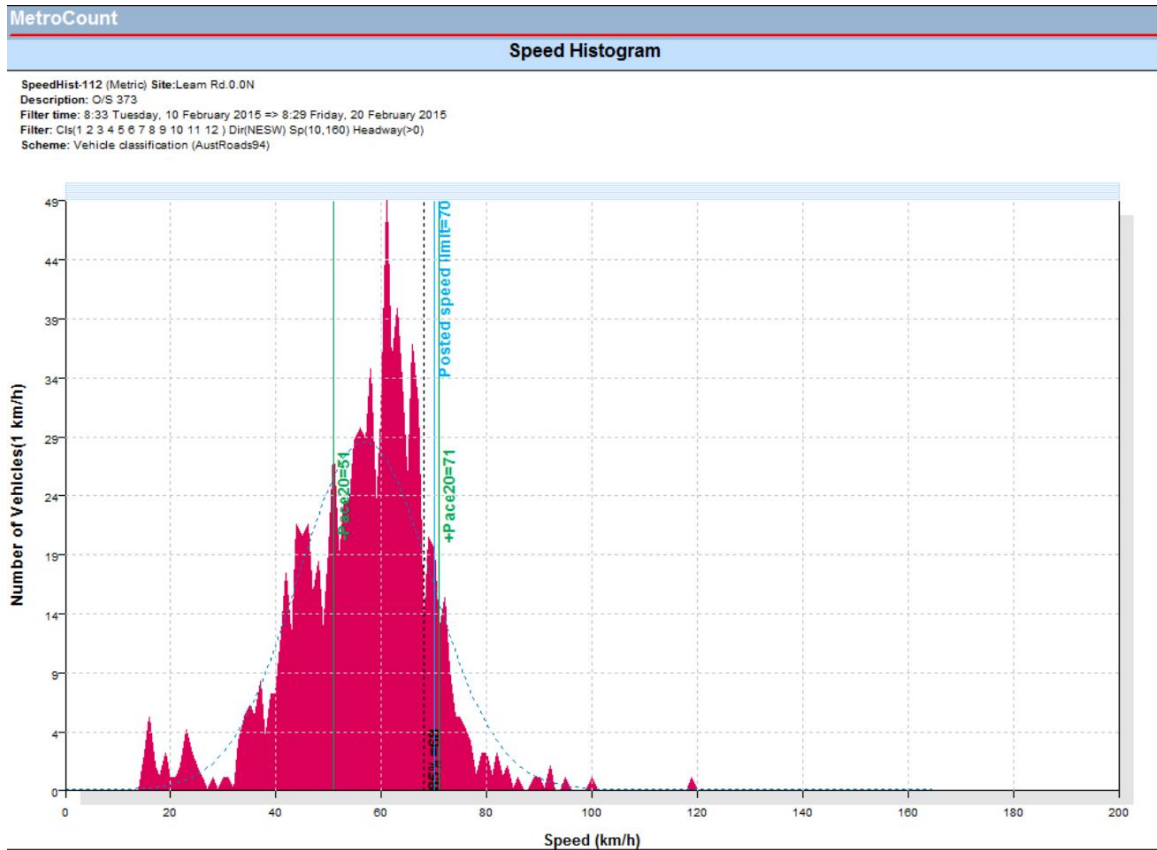
#### Average daily volume

|                    |      |     |     |     |     |     |     |     |     |     |     |     |
|--------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Entire week</b> |      |     |     |     |     |     |     |     |     |     |     |     |
| 88                 | 81   | 1   | 5   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| (%)                | 92.0 | 1.1 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <b>Weekdays</b>    |      |     |     |     |     |     |     |     |     |     |     |     |
| 88                 | 81   | 1   | 5   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| (%)                | 92.0 | 1.1 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**Weekend** No complete days.

\* - Incomplete

## Appendix 2



## Appendix 3

## Appendix 4