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# PROPOSED BROILER FARMS

## BARINGHUP WEST

### *Traffic Engineering Assessment*

Prepared for

PAVILION PARTNERS


MARCH, 2014

OUR REFERENCE: 16853R9457

# PROPOSED BROILER FARMS

## BARINGHUP WEST

### *Traffic Engineering Assessment*

|                         |  |   |
|-------------------------|--|---|
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# 1 INTRODUCTION

Traffix Group has been engaged by Pavilion Partners to undertake traffic engineering assessments and to prepare a report for the proposed broiler farm developments located in Baringhup West.

Notably, the proposal comprises three separate applications on three separate titles as follows:

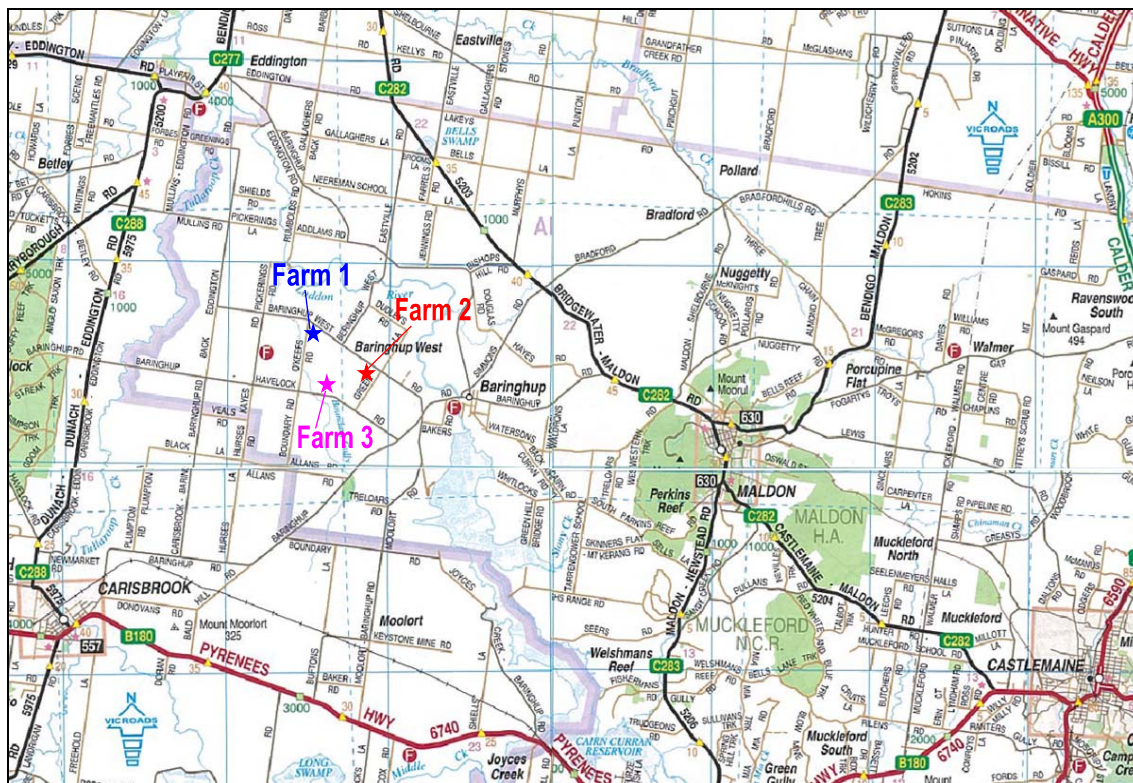
- Farm 1: 320 Baringhup West Road, Baringhup West
- Farm 2: 165 Baringhup West Road, Baringhup
- Farm 3: 290 Baringhup – Havelock Road, Baringhup West

This report provides a traffic engineering assessment of the proposals, with particular attention to traffic generation, distribution and impacts.

# 2 EXISTING CONDITIONS

## 2.1 Subject Site Locality

The locality of the three sites is show in Figure 1 below.



Source: RACV VicRoads Country Street Directory – Edition 8 (2011)

Figure 1: Locality Plan

The three separate parcels of land are described as follows:

- Farm 1: 320 Baringhup West Road, Baringhup West (Crown Allotments 5A1, 5A2 & 5A4, Sec. 3 Parish of Eddington) has an area of approximately 123 acres and frontages to Baringhup West Road (sealed road) and O’Keefes Road (unmade road reserve) of approximately 670 metres and 940 metres respectively.
- Farm 2: 165 Baringhup West Road, Baringhup (Crown Allotments 1 & 2, Sec. 4 Parish of Baringhup) has an area of approximately 308 acres and frontages to Baringhup West Road (sealed road), Green Lane (gravel road) and Baringhup-Havelock Road (gravel road) of approximately 783 metres, 1,589 metres and 781 metres respectively.
- Farm 3: 290 Baringhup-Havelock Road, Baringhup West (Council Property Number 5764) has an area of approximately 678 acres and frontages to Baringhup West Road, O’Keefes Road and Baringhup-Havelock Road of approximately 1,355 metres, 1,504 metres and 1,311 metres respectively.

An aerial view showing the locality and ‘buffer’ for each farm is shown in Figure 2.



Extract from Plan 10795 prepared by Land Management Surveys (Melbourne) dated 12<sup>th</sup> Dec 012

Figure 2: Aerial View

## 2.2 Land Use

The subject land and surrounding land is zoned Farming Zone (FZ) as shown in Figure 3 below. The only exception is a parcel of land at the north-east corner of Farm 1 (not within the subject land) which is zoned Public Use Zone – Schedule 7.

The land is generally flat with few trees. The only improvement on the land is a low depth bore driven by a windmill. The land (and much of the surrounding land) is currently used for cropping and lamb production.

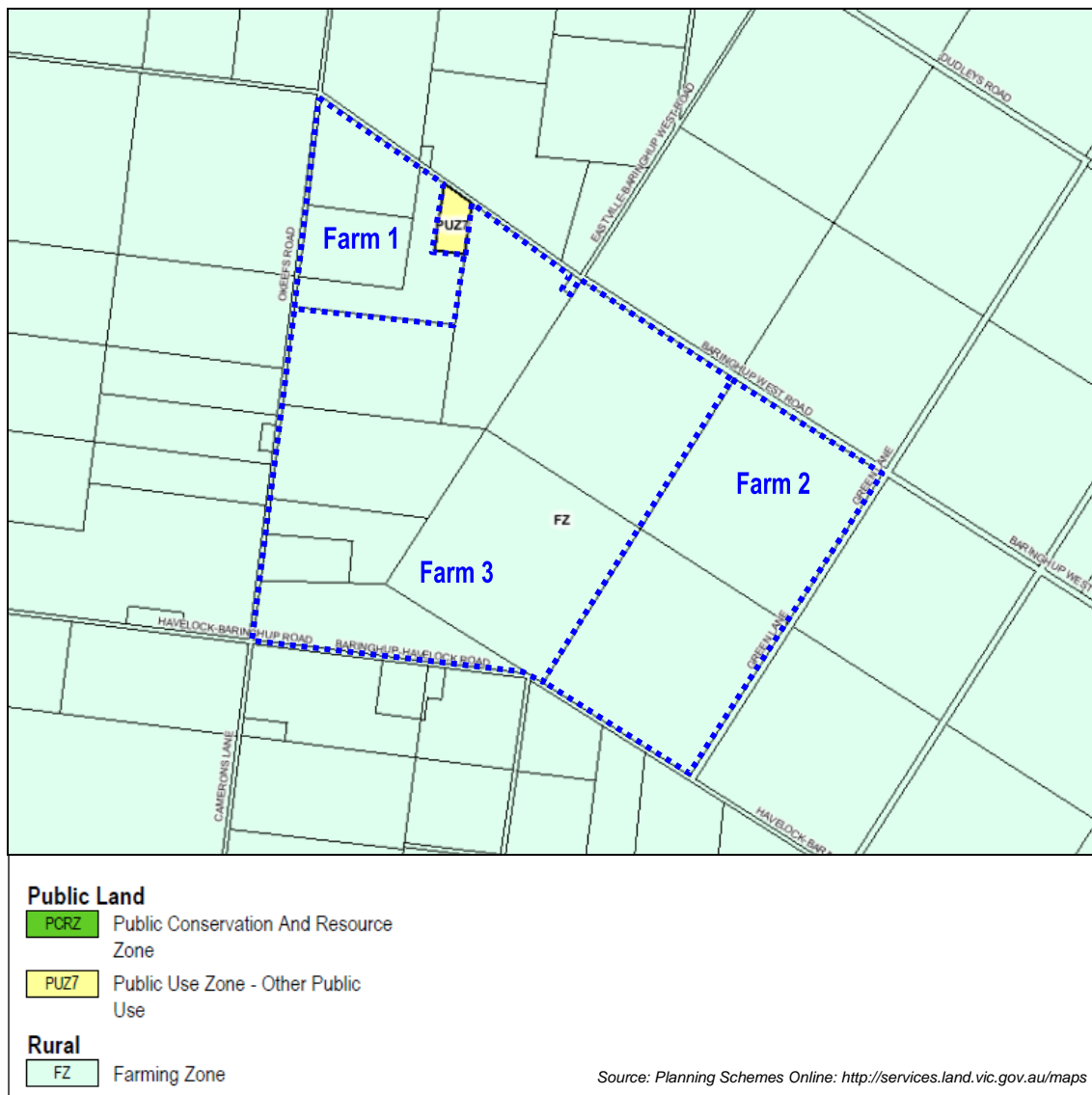


Figure 3: Land Use Zoning

## 2.3 Road Network

### Baringhup West Road

Baringhup West Road is a rural road which extends approximately 8.4km generally in an east-west direction between Baringhup Road and Back Eddington Road.

It is a single-lane sealed road carrying two-way traffic, within a varying (20 – 30 metre) road reservation. The verges are in good condition and suitable to allow two vehicles to pass.

The default rural 100km/h speed limit applies.



*Figure 4: Baringhup West Road Looking East Towards O'Keefes Road Reservation*

### O'Keefes Road

O'Keefes Road is an unmade road reservation which extends approximately 2.5km generally in a north-south direction between Baringhup West Road and Havelock-Baringhup Road.

There is a gravel/grassed accessway located centrally within the 20 metre reservation as shown in Figure 5 below.



*Figure 5: O'Keefes Road Reservation Looking South from Baringhup West Road*

### Havelock-Baringhup Road

Havelock-Baringhup Road is a rural road which extends approximately 15.7km generally in an east-west direction between Baringhup Road and Carisbrook-Havelock Road.

The eastern and western ends of the road are sealed. The section in the vicinity of the subject site (Farm 3) has a gravel formation as shown in Figure 6 below, within a 20 metre road reservation.



*Figure 6: Havelock-Baringhup Road Looking East towards Proposed Access to Farm 3*

### Green Lane

Green Lane is a rural road which extends approximately 3.3km generally in a northeast-southwest direction between Dudleys Road and Havelock-Baringhup Road.

Green Lane is a single-width gravel road within a 30 metre road reservation.



*Figure 7: Green Lane Looking South Towards Baringhup West Road*



## 3 THE PROPOSAL

### 3.1 Development Proposal

The proposal is to develop the three parcels of land for three separate broiler farms, with each comprising 8 sheds and having the capacity for the growing of up to 400,000 chickens (50,000 birds per shed).

Each shed is proposed to be 164 metres long and 17.6 metres wide. The internal floor area of each shed will be approximately 2,804m<sup>2</sup>. The total floor area of the 8 sheds will be 22,432m<sup>2</sup>, and each shed will be separated by 18 metres.

The farms will also include an ancillary machinery shed (approximately 250m<sup>2</sup>), amenities building (approximately 30m<sup>2</sup>), feed silos (approximately 8 metres high and 4.6 metres diameter), a bore, water tanks, a water settlement pond and a generator housing.

The three farms are situated on separate land titles and will be separated by at least the prescribed distances of the Victorian Code for Broiler Farms 2009. Each of the farms' buffer zones are separate and don't cross, and accordingly they will operate as separate "Class B" farms, and not a "cluster" farm.

The farms will be separately managed and have the potential to be able to be sold or leased as separate operations in the future.

### 3.2 Access

Access to each of the farms is proposed as follows:

- Farm 1 is proposed to be accessed via Baringhup West Road,
- Farm 2 is proposed to be accessed via Baringhup West Road, and
- Farm 3 is proposed to be accessed via Baringhup-Havelock Road.

## 4 TRAFFIC ENGINEERING ASSESSMENTS

### 4.1 Traffic Generation

The growing cycle is approximately 7 weeks, with an additional 10 days (approx.) between each batch during which the sheds are cleaned and prepared for the next batch.

There are anticipated to be approximately 6 growing cycles in a year.

The applicant has provided information with regard to the estimated truck numbers, and this is summarised in Table 1 below.

**Table 1: Estimated Vehicle Generation**

| Operation       | Trucks per Cycle (per farm) | Vehicle Movements per Cycle (per farm) | Vehicle Movements per Year (per farm) | Total Vehicle Movements per Year (for 3 farms) |
|-----------------|-----------------------------|--|---------------------------------------|--|
| Chick Delivery  | 6                           | 12                                     | 72                                    | 216  |
| Gas Delivery    | 4                           | 8                                      | 48                                    | 144  |
| Litter Delivery | 3                           | 6                                      | 36                                    | 108  |
| Litter Removal  | 17                          | 34                                     | 204                                   | 612  |
| Feed Delivery   | 50                          | 100                                    | 600                                   | 1,800  |
| Bird Pick-Up    | 60                          | 120                                    | 720                                   | 2,160  |
| <b>TOTAL</b>    | <b>140</b>                  | <b>280</b>                             | <b>1,680</b>                          | <b>5,040</b>                                   |

We note that the above vehicle generation estimates are consistent with our experience at other broiler farms.

Table 1 indicates a total of 1,680 vehicle movements (840 trucks) per farm per year, which corresponds to an average of 4.6 movements (2 to 3 trucks entering and exiting) per farm per day.

At most times there will be only one or two trucks each day (feed delivery), with the most intense traffic occurring at the end of the cycle when the mature birds are collected.

This occurs during the night, and over a period of about four nights (including one night as a result of the 'thinning' process on about day 39, and three nights at the end of the growing cycle).

This equates to roughly 15 trucks (30 movements) on each of the collection nights.

## 4.2 Traffic Impacts

Figure 8 below shows the proposed designated vehicle access routes to/from the sites.

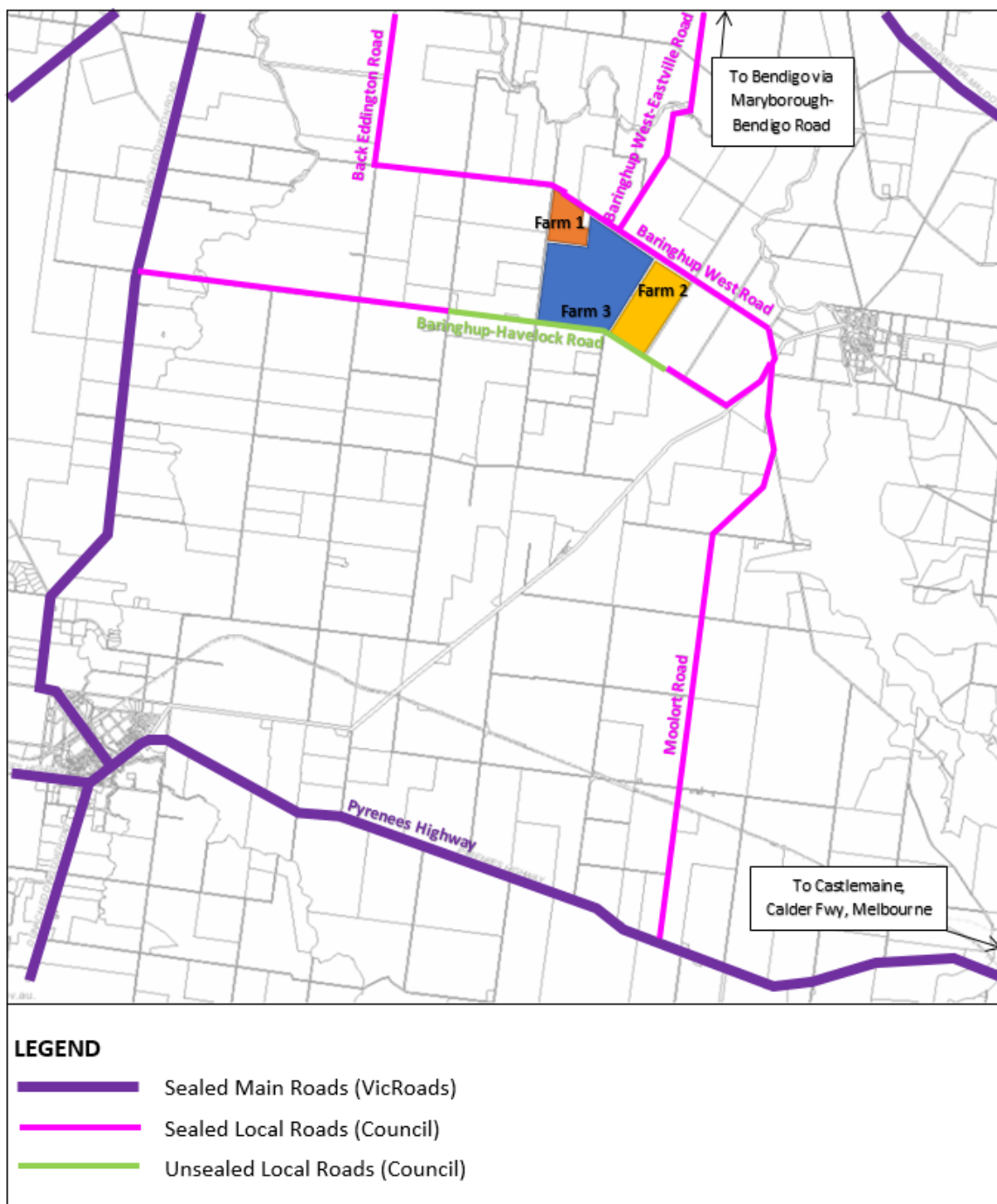


Figure 8: Designated Access Routes

The truck routes are described as follows:

To the southeast (towards Castlemaine, Calder Freeway and Melbourne) and southwest (towards Maryborough, Avoca, Ararat and Ballarat):

- Baringhup West Road and Moolort Road (both sealed roads) to Pyrenees Highway (declared main road – VicRoads Route Number B180).

To the north and northeast (towards Bendigo, Echuca and Charleton):

- Baringhup West Road, Baringhup West-Eastville Road (both sealed roads), Bridgewater-Maldon Road (declared main road – VicRoads Route Number C282) to Bendigo-Maryborough Road (declared main road – VicRoads Route Number C277).

To the northwest (towards Dunolly and St Arnaud):

- Farms 1 and 2: Baringhup West Road, Back Eddington Road and Mullins Road (sealed roads) to Dunach-Eddington Road (declared main road – VicRoads Route Number C288).
- Farm 3: Baringhup-Havelock Road (sealed west of Keys Road) to Dunach-Eddington Road (declared main road – VicRoads Route Number C288).

As identified in Figure 8, Farms 1 and 2 can access the main road network via entirely sealed routes.

Farm 3 is located on a section of gravel road. Baringhup-Havelock Road is sealed west of Keys Road and east of the driveway access to No.135 Baringhup-Havelock Road. The unsealed section extends approximately 4.1km out of a total road length (between Baringhup Road and Dunach-Eddington Road) of approximately 11km.

Trucks accessing Farm 3 from the east and south will travel along approximately 1.6km of unsealed road. Trucks accessing Farm 3 from the west and north will travel along approximately 2.5km of unsealed road.

All of the designated local road routes to access declared main roads as described above avoid travelling through towns (namely Baringhup) and accordingly minimise the number of dwellings which are passed by trucks.

Notably, the predominant route is anticipated to be via Moolort Road to Pyrenees Highway to the south. Trucks accessing Farms 1 and 2 do not pass within 300 metres of a dwelling along this route. Trucks accessing Farm 3 pass only one property (No.135 Baringhup-Havelock Road).

Existing traffic volumes on each of the nominated local (rural) road routes are currently negligible (estimated to be well below 100 vehicle movements per day based on site observations).

Figure 9 below indicates the estimated daily traffic distribution based on an average of 5 vehicle movements (2 – 3 trucks) per farm per day.

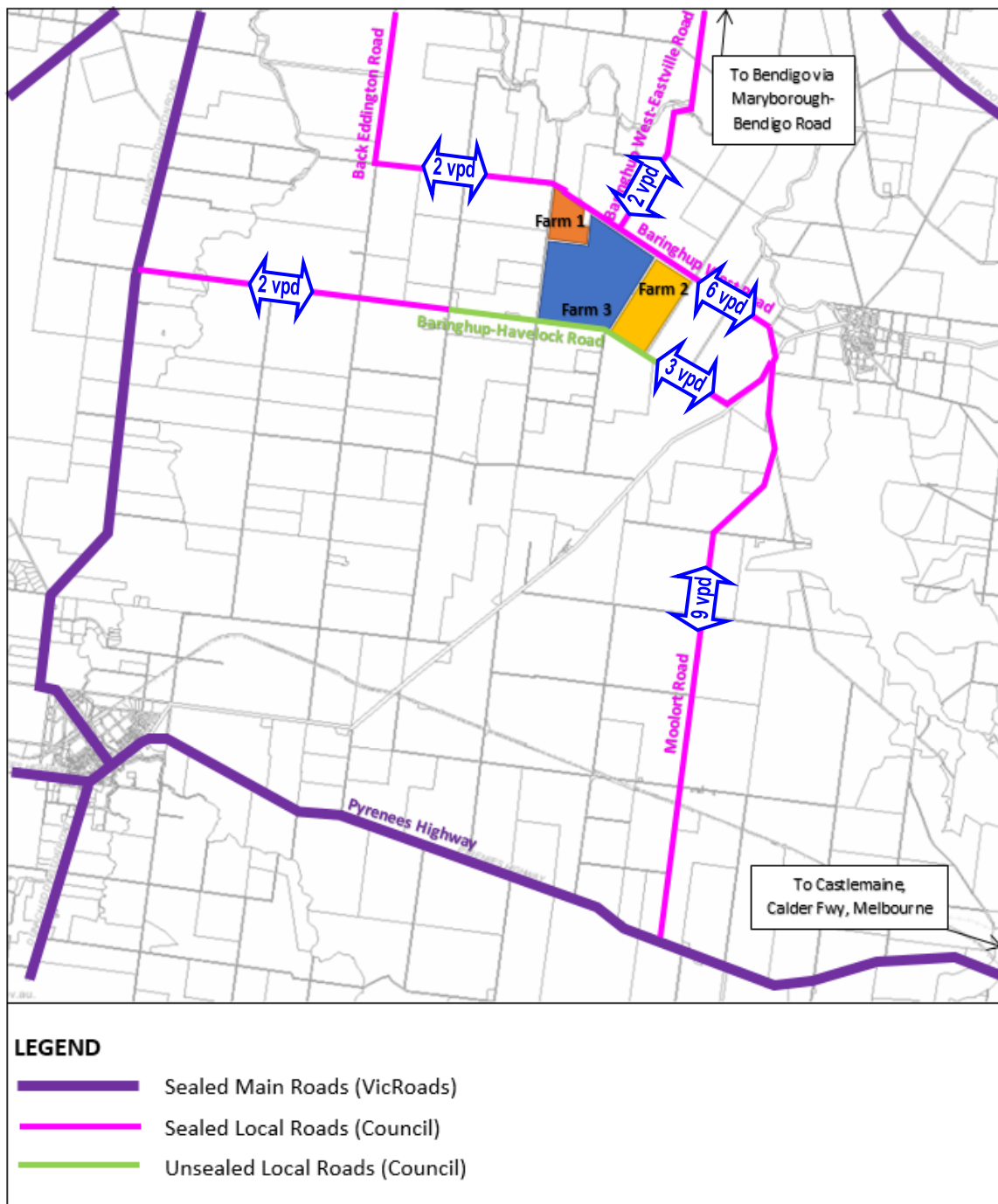


Figure 9: Estimated Daily Traffic Distribution

Figure 9 shows that the daily traffic volume is anticipated to increase by in the order of 9 vehicle movements (4 – 5 trucks) per day on Moolart Road, with lesser increases on all other routes.

The traffic increase on the unsealed section of Baringhup-Havelock Road is anticipated to be in the order of 2 vehicle movements per day west of the Farm 3 access point and 3 vehicle movements per day east of the Farm 3 access point. The traffic increase is negligible and the two-way daily traffic volume on the unsealed section of the road will remain well within the environmental capacity of an unsealed rural road and will not trigger a need to seal the road.

Even on the busiest of days when the mature birds are collected overnight (an additional 15 trucks/30 movements per farm), the 24-hour two-way volume on each of the local roads providing access to the sites is anticipated to remain below 100 vehicle movements.

Furthermore, this will occur on only 6% of days if the collection days for three farms coincide, and will occur on only 6% of days within Baringhup-Havelock Road regardless because only one farm is accessed via that road.

In general terms, the 85<sup>th</sup> percentile day would typically be used for design purposes. At any rate, even on the 99<sup>th</sup> percentile day the anticipated two-way traffic volumes on the unsealed section of Baringhup-Havelock Road will remain well below the environmental capacity of an unsealed rural road.

With the exception of Baringhup-Havelock Road, all other nominated access roads are sealed and can easily accommodate the additional traffic without any adverse impacts. While the sealed width is not sufficient for two vehicles to pass, the probability of two vehicles passing would remain extremely low, and the proposed broiler farms will not necessitate any road widening.

The verges are generally in good condition and there are opportunities for vehicles to pass at low speeds. In addition, the roads generally have good sight distance to see an on-coming vehicle.

On the bird collection days, mature birds are collected overnight at which time other traffic on the roads is negligible, and the broiler farm operator can coordinate the collection such that trucks are unlikely to pass each other in opposite directions.

We are satisfied that the traffic associated with proposed developments (three independent "Class B" broiler farms) can be accommodated on the surrounding road network without any adverse impacts, subject to appropriate design of the site access points to accommodate the swept path requirements of the relevant trucks.

## 5 CONCLUSIONS

Having inspected the site, perused relevant documents and plans and undertaken traffic engineering assessments, we are of the opinion that: -

- a) the traffic generation assumptions and volumes indicated by the applicant are consistent with our experience and are appropriate for design purposes,
- b) the future traffic volumes along Baringhup-Havelock Road (including broiler farm development traffic from Farm 3) will be well within the environmental capacity of a gravel road, even on peak days when mature birds are collected, and there are no traffic engineering reasons to justify sealing of this road,
- c) all other nominated access roads are sealed and appropriate to carry the additional traffic generated by the proposed broiler farms,
- d) the main route (via Moolort Road to Pyrenees Highway to the south) does not pass within 300 metres of any existing dwellings (except for trucks accessing Farm 3 which would pass one dwelling at No.135 Baringhup-Havelock Road) and accordingly amenity impacts (noise, dust, etc.) as a result of the increased truck traffic will be negligible,
- e) the probability of two vehicles passing in opposite directions on the sealed rural road routes between the site and the main road network is very low, verges are generally in good condition with good sight distance to see an on-coming vehicle, and there are opportunities for vehicles to pass at low speeds,
- f) on bird collection nights the broiler farm operator can coordinate the collection such that trucks are unlikely to pass each other in opposite directions,
- g) the traffic associated with proposed developments (three independent "Class B" broiler farms) can be accommodated on the surrounding road network without any adverse impacts, subject to appropriate design of the site access points to accommodate the swept path requirements of the relevant trucks, and
- h) there are no traffic engineering reasons why a permit should not be granted for the proposed broiler farm developments located at 320 Baringhup West Road, 165 Baringhup West Road and 290 Baringhup-Havelock Road in Baringhup West.