MetroCount Traffic Executive

Class Speed Matrix

ClassMatrix-134 -- English (ENU)

Datasets:

Site:	**[CANNING RD] !400m North of CANNING MILLS Rd <90>**
Attribute:	KALAMUNDA
Direction:	7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration:	11:04 Wednesday, May 15, 2019 => 8:19 Wednesday, May 22, 2019,
Zone:	
File:	CANNING RD 0 2019-05-22 1147.EC0 (Plus)
Identifier:	AE63J0TT MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**11:05 Wednesday, May 15, 2019 => 9:00 Thursday, May 16, 2019 (0.913194)**
Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range:	10 - 200 km/h.
Direction:	North, East, South, West (bound), P = North
Separation:	GapX > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 2215 / 2745 (80.69%)

Class Speed Matrix

ClassMatrix-134
Site: CANNING RD.0.1NS
Description: **!400m North of CANNING MILLS Rd <90>**
Filter time: **11:05 Wednesday, May 15, 2019 => 9:00 Thursday, May 16, 2019**
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(NESW) Sp(10,200) GapX(>0) Span(0 - 100)

Speed (km/h)	Class												Speed Totals	
	SV 1	SVT 2	TB2 3	TB3 4	T4 5	ART3 6	ART4 7	ART5 8	ART6 9	BD 10	DRT 11	TRT 12		
10 - 20	3	.	.	.	.	.	.	.	.	.	.	.	3	0.1%
20 - 30	2	.	.	.	.	.	.	.	.	.	.	.	2	0.1%
30 - 40	6	.	.	.	.	.	.	.	.	.	.	.	6	0.3%
40 - 50	3	.	1	.	.	.	.	.	.	.	.	.	4	0.2%
50 - 60	22	1	1	.	.	.	.	.	.	.	.	.	24	1.1%
60 - 70	88	3	14	2	1	1	.	.	3	1	1	.	114	5.1%
70 - 80	437	6	36	4	1	4	1	.	13	4	17	.	523	23.6%
80 - 90	910	30	74	12	.	1	1	3	20	8	45	.	1104	49.8%
90 - 100	280	7	34	4	1	.	.	.	6	7	24	.	363	16.4%
100 - 110	42	1	3	1	.	.	.	.	1	.	.	.	48	2.2%
110 - 120	10	.	3	.	.	.	.	.	.	.	1	.	14	0.6%
120 - 130	4	.	.	.	.	.	.	.	.	.	.	.	4	0.2%
130 - 140	2	.	1	.	.	.	.	.	.	.	.	.	3	0.1%
140 - 150	1	.	.	.	.	.	.	.	.	.	.	.	1	0.0%
150 - 160	1	.	.	.	.	.	.	.	.	.	.	.	1	0.0%
Class Totals	1811	48	167	23	3	6	2	3	43	20	88	0	2214	
	81.8%	2.2%	7.5%	1.0%	0.1%	0.3%	0.1%	0.1%	1.9%	0.9%	4.0%	0.0%		

The Profile is wider than the displayed bins. 1 vehicles are hidden.

MetroCount Traffic Executive

Class Speed Matrix

ClassMatrix-149 -- English (ENA)

Datasets:

Site:	**[CANNING RD 1 -(0003)] 400 m North of CANNING MILLS RD <90>**
Attribute:	CANNING MILLS
Direction:	7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration:	12:00 Tuesday, 8 March 2016 => 11:08 Wednesday, 16 March 2016,
Zone:	
File:	CANNING RD 1 -(0003) 0 2016-03-16 1108.EC0 (Plus)
Identifier:	AE63J0TT MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**12:00 Tuesday, 8 March 2016 => 12:00 Tuesday, 15 March 2016 (7)**
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), P = North
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 18340 / 20795 (88.19%)

Class Speed Matrix

ClassMatrix-149
Site: CANNING RD 1 -(0003).0.1NS
Description: **400 m North of CANNING MILLS RD <90>**
Filter time: **12:00 Tuesday, 8 March 2016 => 12:00 Tuesday, 15 March 2016**
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) Span(0 - 100)

Speed (km/h)	Class												Speed Totals	
	SV 1	SVT 2	TB2 3	TB3 4	T4 5	ART3 6	ART4 7	ART5 8	ART6 9	BD 10	DRT 11	TRT 12		
10 - 20	1	.	.	.	.	.	.	.	.	.	.	.	1	0.0%
20 - 30	54	.	.	.	7	.	.	.	1	1	.	.	63	0.3%
30 - 40	33	2	.	.	3	.	.	.	.	.	.	.	38	0.2%
40 - 50	66	1	2	3	9	.	.	.	5	3	1	.	90	0.5%
50 - 60	82	4	8	5	.	.	1	1	3	1	2	.	107	0.6%
60 - 70	491	29	55	10	1	.	6	1	5	.	8	.	606	3.3%
70 - 80	3032	130	217	41	24	10	17	6	42	14	73	.	3606	19.7%
80 - 90	7897	227	592	75	37	16	28	19	138	31	152	1	9213	50.2%
90 - 100	3085	89	239	42	11	6	9	11	102	19	88	.	3701	20.2%
100 - 110	572	11	28	2	4	.	4	2	10	4	7	.	644	3.5%
110 - 120	145	1	7	.	.	.	.	.	1	.	.	.	154	0.8%
120 - 130	60	.	1	.	1	.	.	.	.	.	.	.	62	0.3%
130 - 140	22	.	.	.	.	.	.	.	.	.	.	.	22	0.1%
140 - 150	21	.	1	.	2	.	.	.	.	.	.	.	24	0.1%
150 - 160	9	.	.	.	.	.	.	.	.	.	.	.	9	0.0%
Class Totals	15570	494	1150	178	99	32	65	40	307	73	331	1	18340	
	84.9%	2.7%	6.3%	1.0%	0.5%	0.2%	0.4%	0.2%	1.7%	0.4%	1.8%	0.0%		

September 2020

Final

Canning Road Safety Investigation

Prepared For: City of Kalamunda

Final Report

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DOCUMENT ISSUE AUTHORISATION

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0	0	09/06/2020	Draft Report	SGY	GTT/DNV	DNV
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Donald Veal Consultants Pty Ltd

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EXECUTIVE SUMMARY

The City of Kalamunda commissioned Donald Veal Consultants (DVC) to carry out a safety investigation of Canning Road between its intersections with Pomeroy Road and Canning Mills Road, with a particular focus on cyclists. This report provides the study outcomes, describing the safety issues found, improvement measures to address them, cost estimates for the works based on concept design drawings and a staged action plan for delivery of treatments based on priority ranking.

A series of day time and night time site visits were carried out by Steve Yapp, Principal Consultant at DVC and an accredited Senior Road Safety Auditor.

The sections of Canning Road under investigation were all classified as Regional Distributor Roads under MRWA's Functional Road Hierarchy with posted speed limits between 70 km/h and 90 km/h. Canning Road south of Welshpool Road East is also classified as RAV4, permitting its use by vehicles up to 27.5m in length and weighing up to 87.5 tonnes. Annual Average Daily Traffic (AADT) on Canning Road varies from about 4,700 vehicles per day (vpd) at the northern end of the study area to some 2,600 vpd at the southern end. There are no scheduled bus routes along this section of Canning Road.

A total of 43 crashes were recorded on this section of Canning Road over the 5-year period from 2015 to 2019, inclusive. Sixteen of these crashes involved injuries, including one fatality. The majority of crashes occurred during daylight hours, and in dry conditions.

There were three head on crashes, eight intersection crashes and nine rear end crashes. Eight vehicles left the carriageway on a curve, while a further seven left the carriageway on a straight. Seven crashes involved motorcyclists, one involved a cyclist and no pedestrian crashes were recorded. There were five incidents of drivers swerving to avoid hitting animals, accounting for just over 10% of recorded crashes.

The safety inspection found that generally, the sections of Canning Road under consideration are constructed with a single lane in each direction, of approximately 3.5m width. Some sections are kerbed, some have edge lines and sealed shoulders, and others have gravel shoulders. The geometry of the road fluctuates, with numerous horizontal and vertical curves limiting visibility to various extents.

Whilst there are a number of significant horizontal curves along this section, most of these have been assessed as being acceptable in terms of their maximum desirable operating speeds being higher than the relevant posted speed limit. Thus, in these cases drivers should be able to negotiate the curves safely if complying with the speed limit. Nonetheless, under the safe systems approach, there is a need to consider whether drivers can safely recover should they leave the carriageway, providing them with a clear zone where possible. In some cases, the posted speed exceeds the safe maximum operating speed. This is particularly the case just south of Pickering Brook Road where the curve radius is 90m and posted speed is 70 km/h, yet the maximum safe operating speed, based on Austroads, is 61 km/h.

There are many locations where there is a lack of a safe recovery zone for errant drivers. Some of these have steep batter slopes, others have non-frangible roadside objects in them such as trees, culverts and power poles.

There is a general lack of cycling facilities along this corridor in terms of either on or off road treatments. Some sections have a sealed shoulder enabling cyclists to travel clear of the traffic lane but other sections lack this facility. Other sections are kerbed and/or have road safety barrier treatments in place, forcing cyclists into the traffic lanes.

Among the safety issues identified were problems relating to restricted sight distances at several of the intersections, often as a result of the poor horizontal and vertical alignment of Canning Road.

A series of potential improvements were identified and design concepts developed where appropriate.

Where practical, on road cycle lanes have been considered in recognition that Canning Road is used by many cyclists as a training route. Where these are not possible, sealed shoulders are preferred as these offer cyclists some protection. Audible edge lines and guideposts are recommended in conjunction with the sealed shoulders, as a means of reducing the risk of run off road crashes.

The City of Kalamunda is currently considering the preparation of an application to MRWA to amend the speed zoning along the entire section of the study area to 70km/h. Lowering the speed limit may also assist with the issue of insufficient sight distance in several locations.

Improvements to sight distances are proposed at several locations where existing sight distances are limited and fall below Austroads guidelines. These measures include modifications to road alignment as well as removal of roadside vegetation.

Standardising street lighting and upgrading its provision is recommended as current levels vary widely.

A consistent signage strategy is also recommended, particularly the need to provide consistent standards for warning drivers of horizontal and vertical curves.

A series of 18 improvement projects were identified with ball park cost estimates totalling close to $6.6 million excluding the costs associated with any street lighting or underground services. Indicative priorities were identified for 17 treatment packages with the highest priority recommended for the following four treatments:

1. Rationalisation of speed limits;
2. Canning Mills Road intersection upgrade (already planned);
3. Pickering Brook Road intersection northbound approach improvement; and
4. Sealed shoulders, audible edge lines and guideposts.

Low cost improvements identified include clearing vegetation impinging on sight distance, devising and implementing a signage strategy and clearing objects such as pallets from the clear zone.

Further investigation is needed to prioritise where on road cycle lanes can be achieved and in which order other intersection improvements should be addressed.

1 INTRODUCTION

1.1 Commission

DVC has been commissioned by the City of Kalamunda to carry out a safety investigation of Canning Road between its intersections with Pomeroy Road and Canning Mills Road, with a particular focus on cyclists.

1.2 Scope of Work

The following scope of work was provided by the City:-

Undertake a road safety investigation along the corridor to identify critical safety issues, deficiencies and constraints. This investigation should incorporate consideration of Safe System Principles and include consideration of the following:

• Adequacy of existing carriageway in relation to capacity and geometry;

• Review of intersection connections;

• Adequacy of pedestrian and cycling facilities;

• Identification of critical deficiencies within the road space;

• Review of speed zoning and relevance to function of road and existing constraints;

• Review crash data from the Main Roads WA Crash Analysis Reporting System (CARS) to inform future upgrade options;

• Adequacy of the existing road corridor to accommodate RAV vehicles and other cartage activities;

• Propose improvements to road safety for all road users to inform subsequent detailed analysis and development of concept designs; and

• Pedestrian and cyclist safety should be considered a high priority as part of the development of a preferred concept and all efforts should be made to identify opportunities where priority and safety of users is integrated into future planning and delivery of works along the corridor.

To guide the level of detail, the City is not expecting detailed analysis or design. The outputs of the RSI are only required in sufficient detail to generate the concept schematic and preliminary cost estimates.

1.3 SITE VISITS

Three site visits were carried out by Steve Yapp, Principal Consultant at DVC and an accredited Senior Road Safety Auditor. Daytime site visits were carried out on the 27th March 2020 and 7th April 2020, with a night time visit being carried out on 2nd June 2020.

2 BACKGROUND INFORMATION

2.1 Study Area Location

The study area consists of the sections of Canning Road between its intersection with Pomeroy Road in the north and its intersection with Canning Mills Road in the south.

See **Figure 2.1**.

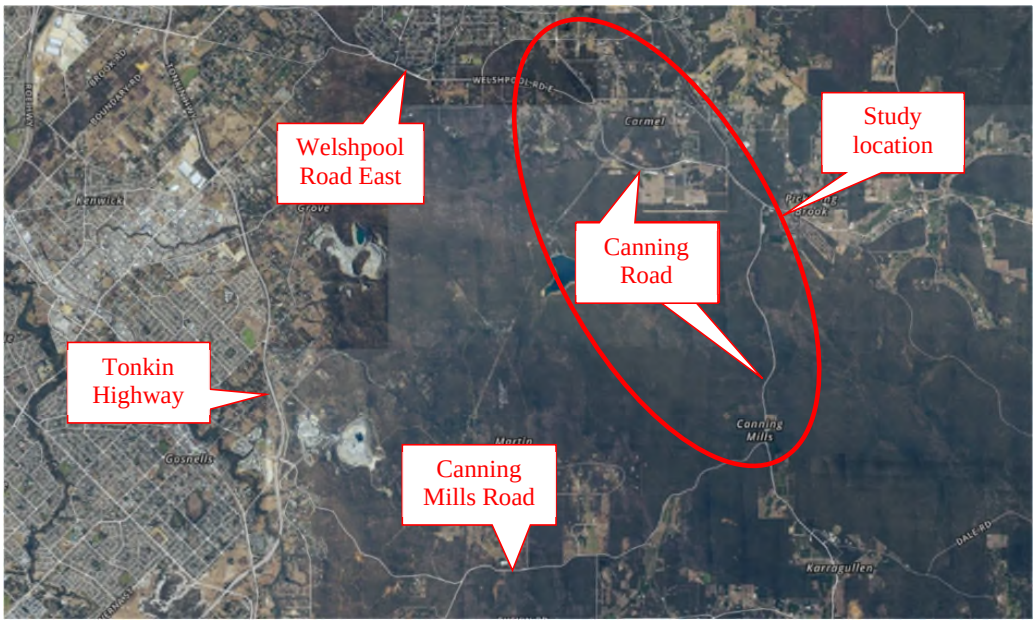


Figure 2.1: General Study Location

2.2 General

The sections of Canning Road under investigation are all classified as Regional Distributor Roads under MRWA's Functional Road Hierarchy.

MRWA's definition of a Regional Distributor Road is:-

"Roads that are not Primary Distributors but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by local government".

The hierarchy in the vicinity of the study area can be seen in **Figure 2.2**.

The posted speed limits, which vary between 70 km/h and 90 km/h along these sections of Canning Road, can be seen in **Figure 2.3**.

Figure 2.2: MRWA Road Hierarchy

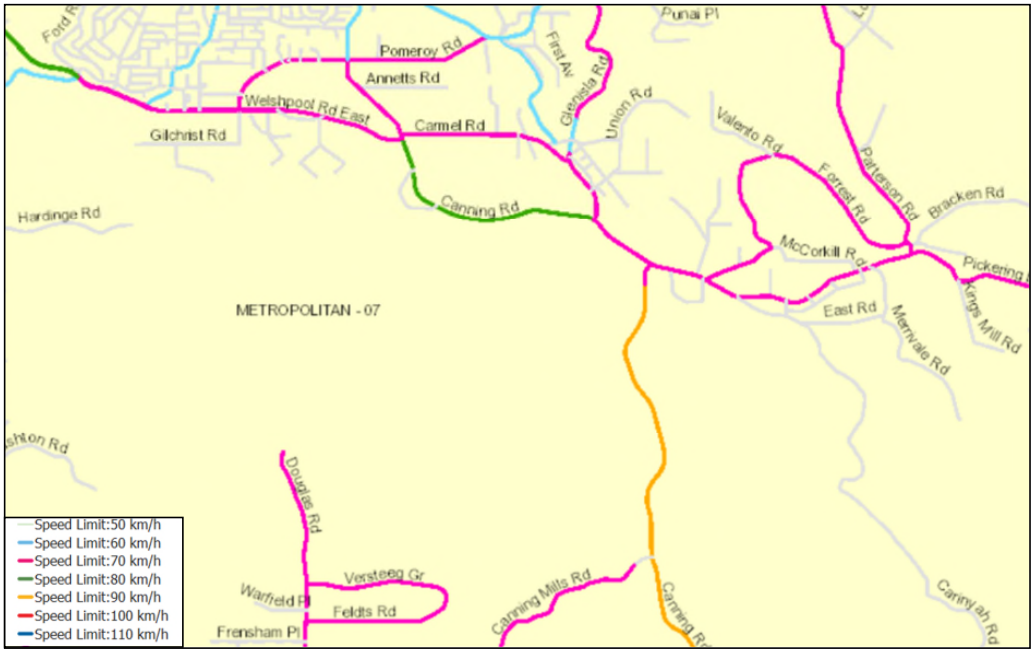


Figure 2.3: Speed limits in the vicinity of the Study Area.

2.3 Traffic Counts

Traffic counts in the vicinity of the study area were provided by the City. The information comes from counts carried out between 2016 and 2019, and includes both traffic counts and speed data.

The data shows that the annual average daily traffic (AADT) on Canning Road north of the Pomeroy Road roundabout was recorded as almost 4,700 vpd in September 2016.

AADT for Canning Road west of Masonmill Road was recorded in June 2016 as just under 3,400 vpd. The speed limit along this section is 80 km/h, however over 45% of drivers were recorded as exceeding this figure, with an 85%ile speed of almost 87 km/h.

AADT for Canning Road 161m west of Glen Isla Road was recorded in September 2018 as just over 3,700 vpd. Although recorded in the data both as 60 km/h and 70km/h, the speed limit at the indicated point of data collection is actually 70 km/h, changing to 80 km/h just a little further west. The data shows that 80% of drivers were recorded as exceeding 70km/h, with an 85%ile speed of 83.5 km/h.

AADT for Canning Road 400m north of Canning Mills Road was recorded in March 2016 as just over 2,600 vpd. Additional data from May 2019 was incomplete. The speed limit along this section is 90 km/h. Approximately 25% of drivers were recorded as exceeding this figure, with an 85%ile speed of almost 93 km/h.

The complete count and speed data sets are attached in **Appendix A**.

2.4 Crash History

Crash data was extracted from the MRWA CARS database for Canning Road between its intersections with Pomeroy Road and Canning Mills Road, for the latest 5 year reporting period of January 2015 to December 2019.

This data showed a total of 43 reported crashes, one of which involved a fatality, which occurred when a vehicle left the road on a right hand bend. Seven crashes resulted in a hospital visit, while 8 required medical attention. The majority of crashes occurred during daylight hours, and in dry conditions.

There were three head on crashes, eight intersection crashes and nine rear end crashes. Eight vehicles left the carriageway on a curve, while a further seven left the carriageway on a straight. One crash involved a cyclist, in 2019.

There were five incidents of drivers swerving to avoid hitting animals, accounting for just over 10% of crashes.

Details of the crashes can also be found in **Appendix A**.

2.5 RAV Network

The majority of the sections of Canning Road included in the study are designated as Restricted Access Vehicle Network 4 (RAV4) routes. The exception is the northern section from Pomeroy Road to Welshpool Road East, which is not part of the RAV network.

Vehicles up to 27.5m in length and weighing up to 87.5 tonnes are permitted to use roads within the RAV4 network.

The RAV4 links in the vicinity of the study area can be seen in **Blue** in **Figure 2.4.**

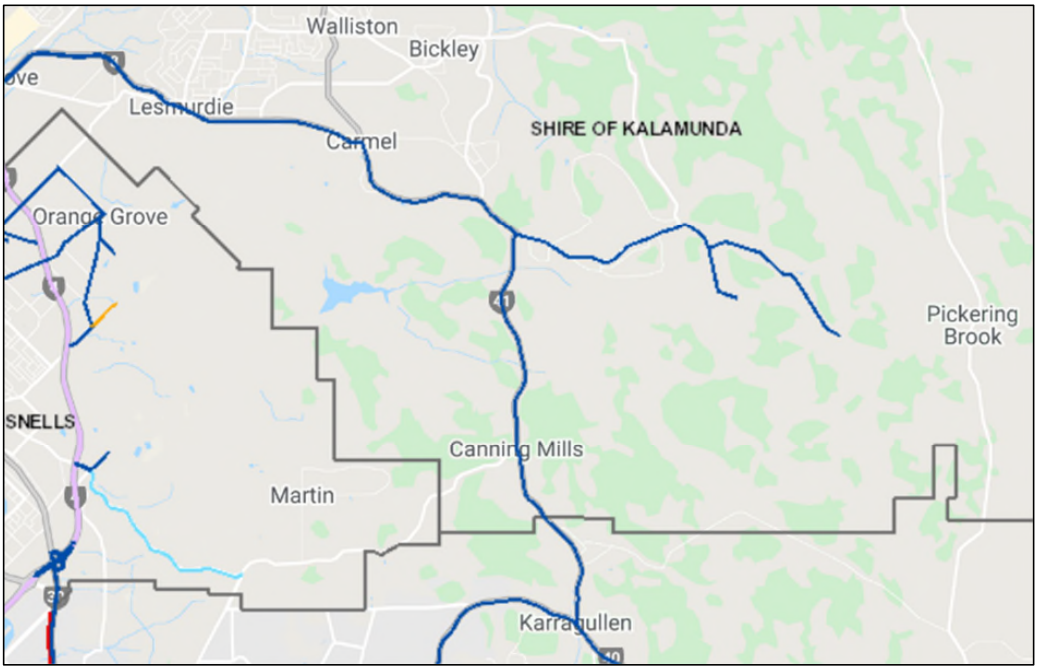


Figure 2.4: MRWA's RAV Network in the vicinity of the study area

2.6 Public Transport

There are no bus routes indicated along Canning Road on the Transperth website.

2.7 Constraints Mapping

There are numerous constraints along these sections of Canning Road in terms of carrying out widening or other improvements to the road. These include the presence of various services, both underground and above ground, as well as property boundaries and physical features.

Drawings showing the location and extent of these constraints are attached in **Appendix B.**

In terms of making safety improvements to the road, these constraints will have a variety of effects:-

- Property boundaries / road reserve limits

  The constrained width of the existing road reserve may limit the scope of some widening or realignment options, without the need to resume land, potentially at significant cost;

- Services

  Whilst there are significant costs attached to the relocation or protection of both underground and aerial services, if required, the presence of the above ground water pipe along the side of Canning Road introduces additional issues. Apart from presenting a significant roadside hazard for errant vehicles, the pipe is an absolute constraint to any improvements, as it cannot realistically be relocated.

- Roadside issues

  The main physical roadside constraints, other than services, are associated with non-frangible items such as trees, and steep batters in the clear zones, where the road is either in cutting or on an embankment. Whilst trees can be protected by road safety barriers in some instances, removal can be problematic. The presence of drop offs and embankments can be addressed if widening of the road is required, but will clearly impact costs.

3 SAFETY INVESTIGATION

3.1 Adequacy of existing carriageway

Generally, the sections of Canning Road under consideration are constructed with a single lane in each direction, of approximately 3.5m width. Some sections are kerbed, some have edge lines and sealed shoulders, and others have gravel shoulders. The geometry of the road fluctuates, with numerous horizontal and vertical curves limiting visibility to various extents.

The following paragraphs discuss the adequacy of the existing carriageway in relation to capacity and geometry for each of the sections of Canning Road within the study area.

3.1.1 General Capacity

Austroads Guide to Traffic Management Part 3 Traffic Studies and Analysis states that '*the Highway Capacity Manual (2016) indicates that the capacity of a two lane highway is 1,700 pc/h for each direction and is nearly independent of the directional distribution of traffic. For extended lengths of two-lane highway, the capacity will not exceed 3,200 pc/h for both directions of travel combined.*'

Maximum daily flows along the sections of Canning Road under consideration are in the order of 4,000 vpd. Even after taking into account limiting factors such as the percentage of Heavy Vehicles, limited lane widths, limited shoulder widths and sections with limited sight distance, it can be reasonably assumed that the traffic flows currently using this section of Canning Road are generally well within the theoretical capacity of the road.

3.1.2 Pomeroy to Welshpool Road East

Photo 1: A typical horizontal curve along this section of Canning Road.

Whilst there are a number of significant horizontal curves along this section, these have been assessed as being acceptable in terms of their maximum desirable operating speeds being higher than the relevant posted speed limit.

A desktop estimation of the radii of the curves along Canning Road was undertaken and reference made to Austroads Guide to Road Design Part 3 Geometric Design Table 3.3 Section Operating Speeds, which correlates radii with section operating speed.

Thus, drivers should be able to negotiate the curves safely if complying with the speed limit. Nonetheless, under the safe systems approach, there is a need to consider whether drivers can safely recover should they leave the carriageway, providing them with a clear zone where possible.

3.1.3 Welshpool Road East to Pickering Brook Road

Whilst there are a number of significant horizontal curves along this section, these have been assessed as being acceptable in terms of their maximum desirable operating speeds being higher than the relevant posted speed limit. Thus, drivers should be able to negotiate the curves safely if complying with the speed limit.

Photo 2: Typical combined horizontal and vertical curves within this section of Canning Road.

3.1.4 Pickering Brook Road to Canning Mills Road

The posted speed limit on Canning Road just south of the Pickering Brook Road intersection is 70 km/h. However, with a radius of approximately 90m, the first curve in the road has a maximum operating speed of only about 61 km/h.

See **Photos 3and 3a**.


Photos 3 & 3a: The bend south of Pickering Brook Road is too sharp for the posted 70 km/h speed limit

This may have been a contributing factor in a number of crashes as evidenced by roadside debris. See **Photos 4 & 4a**.


Photos 4 & 4a: Evidence of a recent run-off road crash.

Photo 3a shows that there is a hazard board only on the south approach of the bend. As the curve appears to be substandard, the curve should be delineated by (yellow) chevron alignment markers at regular intervals along the length of the curve as per AS1742.2. These should be installed on both approaches to the curve.

Other horizontal curves along this section have been assessed as being acceptable in terms of their maximum desirable operating speeds being higher than the relevant posted speed limit. Thus, drivers should be able to negotiate the curves safely if complying with the speed limit.

3.2 Review of intersection connections

This section identifies the various intersections along Canning Road, with a brief description of any immediate safety issues at each. Further examination of these issues can be found in **Section 3.4**. whilst facilities for cyclists and pedestrians are described in **Section 3.3**.

3.2.1 Pomeroy to Welshpool Road East

The main intersections along this section of Canning Road are with:-

- Pomeroy Road;
- Annetts Road; and

- Carmel Road.

Photo 5: Roundabout at the intersection of Pomeroy Road and Canning Road. ***Source: Google Streetview.***

The intersection with Pomeroy Road takes the form of a single lane roundabout. Whilst quite tight for larger vehicles, it has good visibility. See **Photo 5**.

The T- intersection with Annetts Road is Give Way controlled and has good visibility in both directions along Canning Road. See **Photo 6**.

Photo 6: T-intersection of Annetts Road with Canning Road. ***Source: Google Streetview.***

The intersection with Carmel Road forms the first leg of a staggered T-intersection, with Welshpool Road East being the second side road.

Photo 7: Staggered T-intersection with Carmel Road and Welshpool Road East.

The stagger is technically incorrectly arranged, as movements between the two side road requires a left turn followed by a right turn, which is more likely to result in rear end crashes. A right turn followed by a left is considered to be the safer option. However, the two T-intersections are over 65m apart, giving following drivers some time to react. See **Photo 7**.

Visibility from Carmel Road is limited by the road alignment to the right and roadside vegetation, particularly to the left.

3.2.2 Welshpool Road East to Pickering Brook Road

The main intersections along this section of Canning Road are with:-

- Welshpool Road East;
- Masonmill Road (2); and
- Glenisla Road.

Improvements and/or resurfacing are currently under way at the Welshpool Road East intersection, which forms part of MRWA's RAV4 network. RAV vehicles are permitted to turn left into and right out of the side road. Visibility appears to be adequate. See **Photo 8**.

Photo 8: Ongoing works at the Welshpool Road East intersection.

Masonmill Road forms a loop with two t-intersection connections to Canning Road.

Each of these two connections has poor visibility in either direction from the side road, due to the horizontal and vertical alignments of Canning Road. This is exacerbated by the extensive roadside vegetation.

See **Photos 9 & 10**.

Photo 9: Northern of the two Masonmill Road intersections.

Photo 10: Southern of the two Masonmill Road intersections.

Glen Isla Road forms a T-intersection with Canning Road, located on the outside of a sweeping bend. This gives drivers on the side road approach good visibility. However, visibility for drivers on Canning Road turning right into the side road is limited.

Widening has been provided to allow through vehicles to pass to the left off these turning vehicles. There is evidence of significant hoon behaviour at this intersection. See **Photos 11 & 12**.

Photo 11: Glen Isla Road intersection.

Photo 12: Sight distance is limited for right turning vehicles.

A desktop analysis reveals sightlines of 120m to the west for those undertaking the right turn, which corresponds to a SISD design speed of 60km/h (123m).

Although Empire Road is shown on Google Maps, there is no signage or even a visible connection to this road along Canning Road.

There are however two existing connections to an unnamed service road. This gives access to businesses and properties to the south of Canning Road, including A. Giumelli & Sons. There are a number of safety issues associated with these connections. See **Photos 13 & 14**. See also paragraph **3.4.2**.

Photo 13: Northern end of unnamed service road.

Photo 14: Southern end of unnamed service road.

3.2.3 Pickering Brook Road to Canning Mills Road

The main intersections along this section of Canning Road are those with:-

- Pickering Brook Road;
- (Old) Canning Road/Pickering Brook Road; and
- Canning Mills Road.

Photo 15: The intersection of Canning Road with Pickering Brook Road is a T-intersection.

The intersection of Canning Road with Pickering Brook Road is a T-intersection. However, the main west-east 'priority' route changes name from Canning Road to Pickering Brook Road, whilst Canning Road itself continues to the south as the side road. The RAV approved route follows Canning Road, meaning that all RAV4 vehicles must turn right onto the side road and left back onto the main road.

Just south of the Pickering Brook intersection is an intersection with an unnamed link road, (this may be Old Canning Road, or Old Pickering Brook Road?) that provides access to the Pickering Brook General Store. This intersection has very poor visibility and no warning signs. See **Photo 16**.

Photo 16: Intersection with an unnamed link road, looking north. Note lack of warning signs.

Photo 17: No connection to Douglas Road at its southern end. ***Source: Google Streetview.***

Google Maps shows additional connections to Douglas Road, but this link is blocked off with a bund and a 'Road Closed' sign at the southern end, and is restricted by a locked barrier at the other end (refer **Photo 17 and 18**).

Photo 18: Douglas Road access at its northern end, but a barrier obstructs passage. ***Source: Google Streetview***

The Canning Mills Road intersection is signed as a T-intersection, but has an additional, unsealed fourth leg. Visibility from this fourth leg is very poor. There is also a short, non-standard road safety barrier on the Canning Mills Road side, with non-crashworthy end treatments. This appears to have been struck more than once. See **Photos 19 - 21**.

Photo 19: The Canning Mills Road intersection has an unsealed fourth leg.

Photo 20: Visibility to the south is restricted.

Photo 21: Non-crashworthy end treatment.

3.3 Adequacy of pedestrian and cycling facilities

Generally, there are very few existing facilities along these sections of Canning Road that have been specifically provided for cyclists. In some cases, sealed shoulders are present, which provides some limited additional road space for cyclists, allowing them to remain separated to some extent from through vehicular traffic, thus reducing the incidence of drivers, particularly of large trucks, needing to follow much slower moving cyclists until a passing opportunity arises.

The following sections assess the adequacy of the existing pedestrian and cycling facilities along this road.

3.3.1 Pomeroy to Welshpool Road East

The only cycling facility identified along this section of road is the availability of reasonably wide sealed shoulders which, whilst not ostensibly marked as cycle lanes, and in places of sub-standard width, do allow cyclists to ride along the road without having to interact with motorised through traffic.

Photos 22 & 22a: Sealed shoulders are of sufficient width for cyclists to use, but are not to cycle lane standard.

3.3.2 Welshpool Road East to Pickering Brook Road

There are no specific cycling (or pedestrian) facilities along this section of Canning Road. Generally, the sealed shoulders are too narrow to afford any refuge for cyclists, who are therefore forced to cycle on-road and in traffic, despite the presence of a significant number of large trucks using this route.

See **Photos 23 to 24a**.

Photo 23 & 23a: The sealed shoulders along this section of Canning Road are almost negligible.

Photo 24 & 24a: Even during coronavirus restrictions, numerous cyclists were seen using this road.

A number of cyclists were observed being tracked by both cars and trucks until they were able to safely overtake them.

See **Photos 25 & 25a**

Photo 25 & 25a: The lack of sealed shoulders force cyclists to share the road space with other vehicles.

As can be seen in **Photo 26**, in some instances, the vehicle drivers were less patient.

Photo 26: Car overtaking bicycles against the road markings

Even the kerbed sections offer nowhere for cyclists to escape the following traffic. See **Photo 27**.

Photo 27: Kerbed sections offer no opportunity for cyclists to take evasive action.

3.3.3 Pickering Brook Road to Canning Mills Road

There are no specific cycling (or pedestrian) facilities along this section of Canning Road. Generally, the sealed shoulders are too narrow to afford any refuge for cyclists, who are therefore forced to cycle on-road and in traffic, despite the presence of a significant number of large trucks using this route. Even the kerbed sections offer nowhere for cyclists to escape the following traffic. See **Photos 28 and 29**.

Photo 28: No hard shoulder between edge lines and kerbs.

Photo 29: Cyclists would have no option here but to ride on-road.

3.4 Identification of critical deficiencies within the road space

3.4.1 Pomeroy to Welshpool Road East

A section of wire rope safety fence has recently been installed just south of Pomeroy roundabout. This appears to be designed to protect errant vehicles from the above ground pipeline. There are a number of large trees, but these are behind the pipeline.

However, the fence terminates where the kerbs commence, and does not protect vehicles from a large concrete block on the pipeline, a drainage headwall or a power pole, all located nearer to the roundabout.

See **Photos 30 & 31**.

Photo 30: Wire rope safety fence does not cover these items.

Photo 31: Pipe, concrete blocks, post and headwall – all remain exposed.

There are a number of other hazards adjacent the carriageway on this stretch of Canning Road, including numerous concrete headwalls on the eastern side. These are mainly provided to culverts passing under property driveways. In addition, the above ground pipe continues along the western side of the road with no protection.

See **Photo 32**.

Photo 32: Concrete headwalls, piping and concrete blocks all provide hazards to errant vehicles.

Where protection is afforded to the pipe it has limited clearance, and may not be fully effective. See **Photo 33**.

Photo 33: If struck by a vehicle, this safety fence may deflect further than the concrete block.

With minimal sealed shoulders, and numerous unsealed driveways, there are also various locations where loose material is being dragged not only onto the sealed shoulder, but also onto the carriageway itself. This may present a hazard for drivers, but more specifically for cyclists. See **Photo 34.**

Photo 34: Loose material on hard shoulder and road surface.

The night time inspection identified that although this section is better illuminated and delineated than the subsequent two, it still requires upgrading. Street lighting is sporadic, with large gaps between lighting columns, whilst guideposts are also fairly randomly distributed.

3.4.2 Welshpool Road East to Pickering Brook Road

There are some areas within this section that have significant drop offs adjacent the road, some with open, unrecoverable batter slopes, whilst others are hidden by trees and bushes. See **Photo 35**.

Photo 35: Unrecoverable batter with a significant drop off.

As identified in paragraph **3.2.2**, visibility is an issue at some of the intersections and accesses along this part of Canning Road. As can be seen in **Photos 36 & 37**, this is of particular concern at the northern Masonmill Road intersection.

Photo 36: Visibility to the north is limited by both geometry and roadside vegetation.

Photo 37: Visibility to the south is limited by a crest.

At Masonmill Road (north), a desktop analysis indicates approximately 100m of sight line to the north. Austroads Guide to Road Design Part 4A Unsignalised and Signalised Intersections indicates that this would correspond roughly to the required SISD for a design speed of 50km/h (97m).

To the south, however, the presence of a crest reduces sight lines significantly. On-site measurement would be required to determine the corresponding SISD. See **Photo 37**.

At Masonmill Road (south), a desktop analysis indicates approximately 170m of sight line to both north and south, which corresponds to the SISD for a design speed of 75km/h (165m).

Between the two Masonmill Road intersections, there is an unsealed property access with evidence of significant truck movements. Visibility to the north of the access is limited by the road geometry. A desktop analysis reveals sightlines to the north are restricted by the curve in the road to approximately 130m. This corresponds to a SISD design speed of 60km/h (123m). See **Photos 38 & 39**.

Photo 38: Unsealed property access to the east of Canning Road.

Photo 39: Evidence of trucks turning in and out of the access. Visibility to the north is limited.

The posted speed limit of Canning Road in this section is 80km/h, with a design speed of 90km/h. Whilst clearing of vegetation may help to achieve the required sight lines in some instances, a reduction in the posted speed limit may still be required where geometric issues are also present.

Also identified in paragraph **3.2.2** was the unnamed service road giving access to businesses and properties to the south of Canning Road, including A. Giumelli & Sons.

The northern intersection is simple, but has a poor angle of incidence. Although there is an advertising sign on the side of the road, there do not appear to be any intersection warning signs heading south. There is also a power pole close to the road in this vicinity. See **Photos 40 & 40a**.

Photos 40 & 40a: Northern service road intersection joins Canning Road at an acute angle of around 20º.

Located on the outside of a long sweeping bend, these intersections also have limited visibility for drivers turning right from Canning Road.

The southern intersection has a non-standard configuration, which may cause confusion for those unfamiliar with the layout. Although an intersection warning sign has been provided on the northbound approach, it does not fully identify the potential vehicle movements. (See **Photos 41 to 43**).

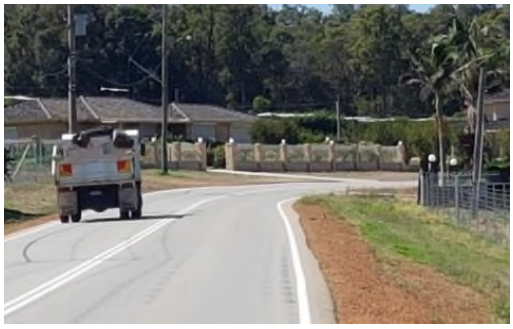
Photo 41: The warning sign does not fully identify the connections or potential movements.

Photo 42: Southern intersection, looking north.

Photo 43: Southern intersection, looking south. There appears to be potential for head on crashes here.

There are other property accesses to the south of this area which are located very close to blind bends, making visibility difficult for emerging vehicles. One of these is the access to 'Leotta's' fruit farm, which is very close to a sharp bend and appears to cater for truck movements. It is also open to the public at weekends.

See **Photos 44 & 44a**.



Photos 44 & 44a: There are a number of property accesses around blind bends. Leotta's access provides one example.

At night, this section is poorly lit, with occasional clusters of street lights, of varying types, giving pools of light rather than consistent illumination. The alignment of some of the lighting columns is also at odds with the road alignment in some areas. A number of horizontal curves have little in the way of guideposts, with a number having been installed, but subsequently broken off or uprooted.

Despite recent upgrades at the Welshpool Road East intersection, the street lighting remains below par. A single lighting column gives an isolated pool of light, as seen in **Photo 45**.

Photo 45: A single lighting column at the Welshpool Road East intersection.

3.4.3 Pickering Brook Road to Canning Mills Road

At the Canning Road / Pickering Brook Road intersection, the radius of the left turn out of the side road does not appear to be sufficient to cater for RAV vehicles, with most of those observed crossing the centre line of the through road.

See **Photo 46.**

Photo 46: Turning truck crossing centre line

The geometry of Pickering Brook Road is such that visibility to through vehicles is limited for drivers turning right into the side road. See **Photo 47.**

Photo 47: Limited visibility for vehicles turning right.

Although it is understood that some Blackspot funded upgrades have been carried out at the intersection, these do not appear to have addressed the swept path or visibility issues. There are also other existing

safety problems, including badly faded line marking and non-frangible items in the clear zones. See **Photos 48 & 48a**.

Photos 48 & 48a: Worn line marking and Power pole in verge.

As identified in paragraph **3.1.3**, the bend to the south of the Pickering Brook Road intersection is too sharp for the 70 km/h speed limit, has poor visibility and an unrecoverable batter slope. This has already led to a number of crashes, and there is a significant risk of further incidents. See **Photos 49 & 50**.

Photo 49: Sharp bend south of Pickering Brook Road intersection.

Photo 50: Unrecoverable batter and signs of a previous crash. One fatality has occurred here in recent years.

In the same vicinity, there is an intersection with what may be 'Old Canning Road'. This is immediately south of the sharp bend, has no warning signs and is almost hidden by vegetation. Indeed it is preceded by warning signs for the Canning Road / Pickering Brook Road intersection. See **Photo 51**.

Photo 51: This intersection has no warning signs and very poor visibility.

The truck route signs in the south direction are obscured by vegetation. See **Photo 52**.

Photo 52: Truck warning sign hidden by vegetation.

Other issues along this section of road include hazards within the clear zone such as culverts beneath the road, trees and drop offs.

See **Photos 53 & 54**.

Photo 53: Culvert close to road

Photo 54: Trees near the road with significant drop off.

There is also a property to the south of the Old Canning Road intersection, which has a very wide, open frontage to Canning Road. This belongs to a business and appears to allow heavy vehicles to load and unload parallel to the road. At the southern end of the frontage, large stacks of pallets can be seen within a few metres of the southbound traffic lane. See **Photo 55**.

Photo 55: Pallets stacked within the clear zone.

The intersection of Canning Road with Canning Mills Road is a concern primarily due to the lack of visibility, especially at the un-signposted fourth leg. However, there are also issues with the non-standard safety fence at the intersection.

See **Photos 56 to 59**.

Photo 56: Limited visibility for right turn from Canning Road.

Photo 57: Poor visibility to the south from the fourth leg.

Photo 58: Limited visibility to the north from fourth leg.

Photo 59: The safety fence appears to be protecting vehicles from this opening.

Once again, street lighting along this section is limited, and again the lighting types and spacing are inconsistent. One of the few street lights installed at the Pickering Brook Road intersection was non-functional.

The number of useful guideposts was minimal. Those that have been installed are often broken off, or obscured by roadside vegetation.

3.5 Review of speed zoning

The following sections review the current speed zoning in relation to the function of the road and the existing constraints. It should be noted that the City is currently considering the preparation of an application to MRWA to amend the speed zoning along the entire section of the study area to 70km/h.

3.5.1 Pomeroy to Welshpool Road East

This section is the only one that is not part of the RAV4 network. The speed limit is 70 km/h and with numerous property accesses this appears appropriate.

3.5.2 Welshpool Road East to Pickering Brook Road

Initially set at 80 km/h from Welshpool Road East through to the Carmel Road intersection, this section of Canning Road, which is RAV4 rated, then reverts to 70 km/h as far as the Pickering Brook Road intersection. There does not appear to be any significant improvement in the standard of the road to justify the increase in speed limit over this one stretch, whilst the addition of larger, heavier vehicles would also appear at odds with the higher permitted speed. There are also numerous property accesses along this section.

On the subsequent section, where the limit returns to 70 km/h, speeds appear more appropriate to the road environment.

3.5.3 Pickering Brook Road to Canning Mills Road

The speed limit rises to 90km/h just south of the Pickering Brook Road intersection. With no real change in the standard of the road, and numerous bends along this section, this appears too high, especially with a mixture of large trucks and cyclists using the road.

The roadside environment includes numerous quite large trees, quite close to the traffic lanes, as well as a number of areas with steep drop offs and unrecoverable batters. These are not in keeping with a safe systems approach to road safety, and present significant hazards to errant vehicles.

There are also sections with kerbs installed. In these areas, if a truck travelling at 90 km/h encounters a much slower cyclist, the cyclist is unable to even take evasive action.

3.6 Heavy Vehicles

The following sections assess the adequacy of the existing road corridor to accommodate RAV vehicles and other cartage activities.

3.6.1 Pomeroy to Welshpool Road East

This is the only section within the study area that is not RAV approved. Thus, the largest vehicles allowed ‘as-of-right’ are up to 19m in length only.

Even so, the width of the road does not allow for such trucks to pass cyclists with the required safety margin, unless those cyclists use the sealed shoulders, where available.

3.6.2 Welshpool Road East to Pickering Brook Road

This section of road is RAV 4 approved, and is therefore used by trucks of up to 27.5m in length.

An assessment of the suitability of a route for inclusion in the various RAV networks is normally carried out by MRWA prior to approval, and uses a standard template of criteria for that assessment, contained within the latest version of MRWA's 'Standard Restricted Access Vehicle (RAV) Route Assessment Guidelines'.

In general terms, the route appears to meet the relevant RAV criteria related to road width, but may struggle to achieve some of the required sight distance criteria. Swept path analysis may also be required to confirm turning clearances in some locations.

Whilst it may be assumed that the relevant criteria would have been met at the time at which the route was approved by MRWA, a new assessment may be required to determine whether the route currently meets the latest standards. However, that is beyond the scope of this project.

For a rural road with AADT above 1,000 vpd, Version 14 of the above Guidelines states that the following minimum widths are required:

	60 to 70 km/h		80 to 100 km/h	
	Carriageway Width* (m)	Sealed Width** (m)	Carriageway Width* (m)	Sealed Width** (m)
RAVs Categories 2-4	9.6	6.8	9.9	7.1
RAVs Categories 5-7	9.7	6.9	10.0	7.2
RAVs Categories 8-10	10.6	7.6	11.0	8.0

3.6.3 Pickering Brook Road to Canning Mills Road

This section of road is RAV 4 approved, and is therefore used by trucks of up to 27.5m in length.

Generally, the comments made in paragraph **3.6.2** also apply here. However, with a higher speed limit on the majority of this section, and with the proximity of numerous large trees, it is perhaps less likely that the current criteria for RAV4 approval would be met.

4 IMPROVEMENTS AND DESIGN CONCEPTS

The following paragraphs will identify potential improvements together with some initial outline design concepts needed to address the main safety issues identified within this investigation. These will cover safety issues affecting all road users, but the development of each concept will include specific consideration of the existing and future safety of cyclists along this road.

The proposed improvements are split into the same road sections as before, although some issues are present throughout the study area, and result in a general concept.

Concept plans for the main improvements can be found in the text or attached in **Appendix C and D**.

4.1 General Improvements

The City has recently submitted an application to MRWA for Black Spot funding for the 2021-2022 financial year for the section of Canning Road between Welshpool Road East and Glenisla Road. Improvements proposed include sealed shoulders on both sides along the entire section, upgraded lighting, removal of roadside hazards, improved delineation, installation of tactile edge lines and pavement markers.

4.1.1 On-Road Cycle Lanes

It was noted on site that the majority of cyclists observed appeared to be using Canning Road in the manner of 'training'. This is confirmed within the City of Kalamunda's 2017 Bike Plan, which identifies Canning Road as a potential 'Training Route':

*"**Canning Road (south of Pomeroy Road)** – in the long term Canning Road should be widened to provide 2m wide sealed shoulders. In the short to medium term targeted widening at selected sections is recommended to reduce conflict between cyclist and drivers. A Road Safety Audit should be undertaken to inform identify the level of risk, assist the City to seek external funding and identify targeted staged improvements."*

As a training route, it is likely that cyclists would prefer to ride 'on-road', and therefore separate off-road facilities are unlikely to be popular among this group. The provision of on-road cycle lanes is therefore considered appropriate. However, in some sections, this may prove expensive, and/or potentially impractical.

The concept typical cross sections attached in **Appendix C** provide on road cycle lanes in each direction along Canning Road, along the three sections being considered. The proposed width of the lanes is as per Cycling Aspects of Austroads Guides 2017 and in particular *Table 4: Exclusive bicycle lane dimensions in urban areas*. Section 4.3.3 of this Guide does however advise that where space is not available, the use of wider kerbside lanes may be employed for roads with speed zones of 70km/h of less.

Clearly, along a significant length of a rural road such as Canning Road the existing cross section is constantly changing. In some sections, there are existing sealed and/or unsealed shoulders, but these

vary in width. There are sections of various lengths with kerbs, and other sections with embankments, cuttings, trees and safety barriers.

The concepts provided in this study therefore consist of a number of typical cross sections, together with a general guide as to the lengths of Canning Road over which these can most appropriately be applied. These are both indicated on the concept typical cross sections with a tabulation of their indicative lengths (in **Appendix C**) and the concept plan of Canning Road (in **Appendix D**), for ease of initial costings.

4.1.2 Sealed shoulders, (audible) edge lines & Guideposts

If the provision of fully compliant bicycle lanes cannot be achieved, sealed shoulders should still be provided, at least in certain key areas, to provide some additional road space for cyclists.

In addition, audible edge lines and guideposts should be provided, in conjunction with the sealed shoulders, as a means of reducing the risk of off road crashes.

4.1.3 Rationalisation of speed limits

As noted above, the City is currently considering the preparation of an application to MRWA to amend the speed zoning along the entire section of the study area to 70km/h. Lowering the speed limit may also assist with the issue of insufficient sight distance in some locations.

4.1.4 Visibility / Sight distance

There are a number of areas throughout the three sections of Canning Road where visibility along the road may not meet the requirements of applicable Austroads standards. In some cases, this is due to vertical curves, where significant civil works may be the only option to achieve the requirements for the existing speed environment. However, in other areas, where the issue is related to the horizontal alignment, it may be possible to provide significant improvements either through slight adjustments to the road alignment, or by the removal of roadside vegetation.

4.1.5 Street Lighting

The standard of lighting along the sections of Canning Road being investigated is inconsistent, and generally poor. The provision of lighting is limited, with illumination levels provided by the differing types of lighting also inconsistent. The alignment of the lighting columns is also potentially misleading in some locations.

The existing street lighting should be catalogued, with current levels of illumination provision determined. A general upgrade programme should be implemented, to achieve the levels required by current standards.

4.1.6 Signage Strategy

The existing signage provided along these sections of Canning Road is inconsistent, with some intersection warning signs missing, and significant horizontal and vertical curves having little or no warning or delineation.

Further study will be required to identify which signs need to be removed, replaced, relocated or installed, in order to provide a consistent signing strategy for the road.

4.2 Specific Improvements - Pomeroy to Welshpool Road East

4.2.1 Safety Fence Extension

Extend the safety fence to protect drivers from roadside hazards such as the above-ground pipe and concrete block. See **Figure 4.1** below.

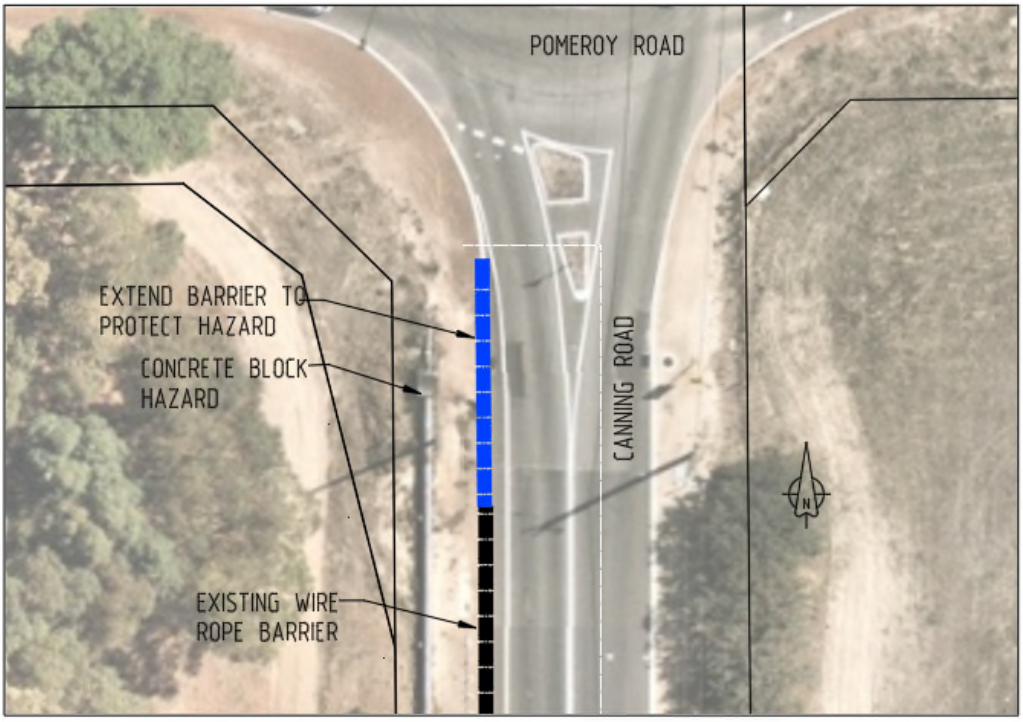


Figure 4.1: Recommendation to extend safety barrier north to protect existing hazard

4.2.2 Headwalls etc.

Other roadside hazards such as driveway headwalls should be removed, relocated or redesigned.

4.3 Specific Improvements - Welshpool Road to Pickering Brook Road

4.3.1 Masonmill Road Intersections

A reduction in the posted speed limit here would reduce the amount of clearing of vegetation required to improve sight distances.

In order to achieve the required sight distances from the northern intersection, extensive civil works would be required to reduce the crest to the south. Given the availability of a safer location to join Canning Road at the southern Masonmill Road intersection, and the limited amount of traffic using this road, closure of the northern intersection would provide a significantly cheaper option. A simple turn around would need to be provided at the closed end.

4.3.2 Private property - truck access

Visibility to the truck access located between the Masonmill Road intersections is limited by the horizontal geometry of Canning Road.

Whilst a reduction in the speed limit may assist in this regard, any significant improvements here would need to be prefaced by negotiations with the property owner. However, in the short term, warning signs should be installed on both approaches, indicating that drivers should be aware of trucks turning at this location.

4.3.3 'Giumelli' Service Road Intersections

The status of this service road is unclear. It appears to be the previous alignment of Canning Road, and lies wholly within the road reserve. There is an intersection warning sign on only one approach to one of its intersections with Canning Road. However, both intersections have safety issues.

This service road may need to be the subject of a separate study, in order to address the safety issues at either end, or provide a rationalised, single access strategy.

In the short term, improvements to better define the priority movements and provide suitable warning signs on the through road, could be implemented at minimal cost. Some suggested temporary measures at the eastern end are shown below in **Figure 4.2**.

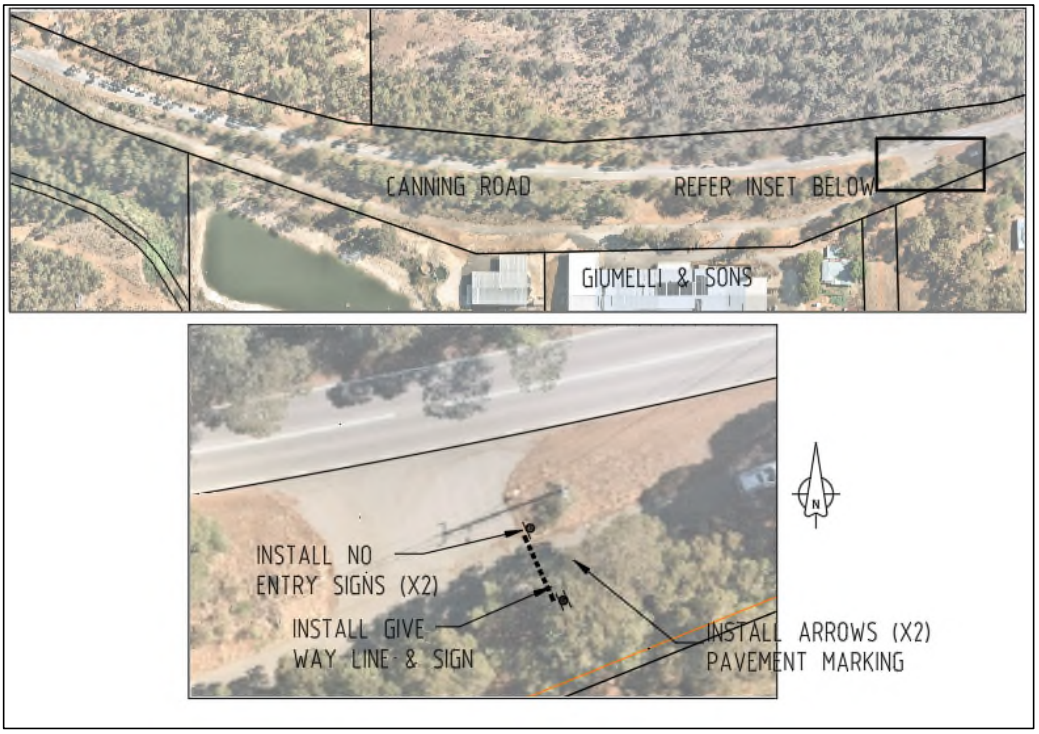


Figure 4.2: Temporary safety improvements at eastern access to Guimelli & Sons

4.3.4 Glen Isla Road Intersection

At Glen Isla Road the sight distance for turning right into the side road is limited by the horizontal alignment and roadside vegetation. Currently, the available sight distance corresponds roughly to a design speed of 60km/h. The posted speed limit along this stretch of Canning Road is 70km/h, requiring a design speed of 80km/h.

Some vegetation can be removed from the inside of the left hand bend. This may well be carried out in any case in order to facilitate the provision of bicycle lanes. The sweep of the curve could also be adjusted slightly to improve visibility.

4.3.5 Pickering Brook Road intersection

This intersection has been the subject of a previous successful blackspot funding application. It is understood that some of the approved improvements have already been implemented.

However, the swept paths provided as part of the improvement design do not appear to address the existing issues, and are unrealistic in terms of sight distance along Pickering Brook Road.

In the longer term, a realignment of the Canning Road centre line as shown in **Figure 4.3** would not only upgrade the intersection to adequately cater for the turning movements (lane correct) of RAV 4 vehicles, but also provide safe continuity of the proposed on road cycling facilities.

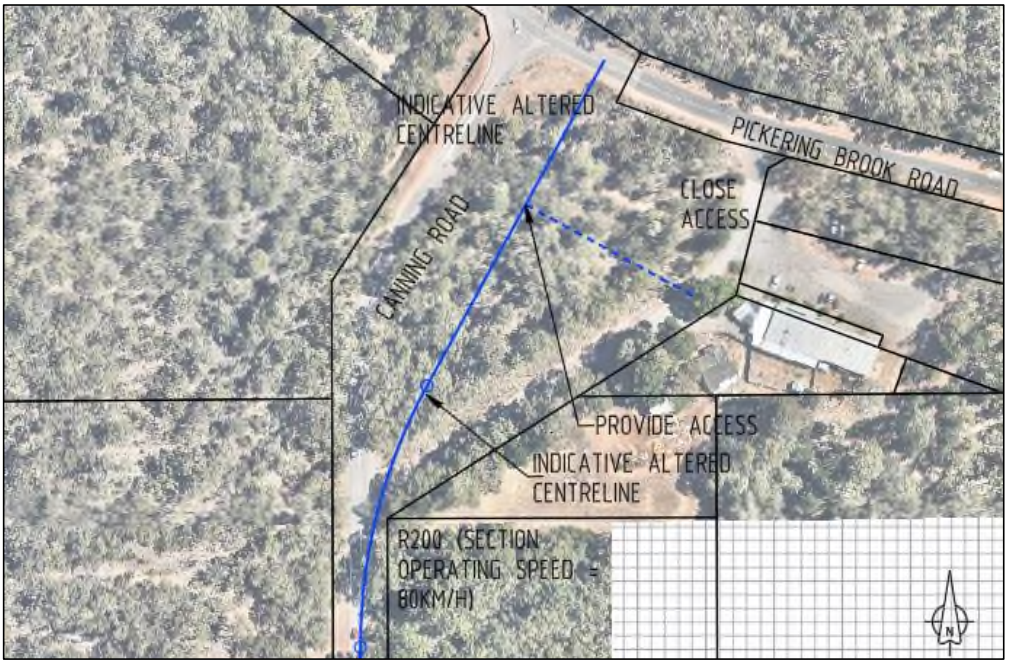


Figure 4.3: Conceptual realignment of Canning Road at Pickering Brook Road

This realignment would also provide the opportunity to significantly improve the current access to the Pickering Brook general store area.

4.4 Specific Improvements - Pickering Brook to Canning Mills Road

4.4.1 Northbound approach to Pickering Brook Road intersection

Notwithstanding the potential realignment of Canning Road south of the Pickering Brook Road intersection as identified in Figure 4.3, in the shorter term at least, the horizontal curve to the south of the intersection is too sharp for the current speed limit, and has little or no delineation.

The single, poorly located MR-HM-3 chevron sign should be replaced by a series of single D4-6 yellow chevron signs, as well as guideposts as required. A suitably designed safety fence should also be installed.

4.4.2 Old Canning Road intersection

The Old Canning Road intersection would be closed with the realignment identified in Figure 4.3, and a safer access provided.

Ideally, a separate study should be carried out to determine the safety of closing this intersection. There are obvious advantages, but the transferral of movements to the alternative access off Pickering Brook Road may introduce other safety issues. Interim mitigation measures may include vegetation removal and improved signage.

4.4.3 Property access – pallets

The property access to the south of the Old Canning Road intersection clearly presents a safety issue, not only in terms of the potentially unexpected movement of trucks to and from the highway, but also in terms of the stacks of pallets adjacent the traffic lanes.

The City should engage the property owner in discussions regarding the issues.

4.4.4 Canning Mills Road intersection

It is understood that this intersection is being upgraded as part of a separate project. The issues identified in terms of visibility, especially from the unsigned fourth leg, should be addressed within this upgrade.

5 COSTINGS

The following table outlines an initial 'ball park' cost estimate for each of the proposed treatments included in the Concept Design drawings. These are based on unit costs, and typical cross sections, and may vary significantly depending upon specific conditions encountered. No allowance has been made for works to underground services. As such, the estimates should be updated and refined once preliminary design investigations have been undertaken.

CANNING ROAD SAFETY INVESTIGATION
COST ESTIMATES

Item	Description	Unit	Qty	Rate	Amount
1	**Start: Cha 0 (Pomeroy Rd), End: Cha 225**				
1.1	Extend wire rope barrier	m	15	$150	$2,250
1.2	Cut bitumen	m	225	$10	$2,250
1.3	Remove existing kerb and dispose	m	225	$25	$5,625
1.4	Road widening	m	225	$210	$47,250
1.5	Signs and Lines (Provisional)	Item			$1,000
1.6	Kerb	m	225	$30	$6,750
1.7	Services impacted upon				
	Telstra	Item			
	Drainage	Item			
1.8	Traffic Management	week	1	$7,500	$7,500
	Subtotal (excl u/g services)				**$72,625**
2	**Start: Cha 225, End: Cha 400 (Annetts Rd)**				
2.1	Road safety barrier	m	175	$350	$61,250
2.2	Cut bitumen	m	175	$10	$1,750
2.3	Remove existing kerb and dispose	m	175	$25	$4,375
2.4	Road widening	m	175	$210	$36,750
2.5	Signs and Lines (Provisional)	Item			$1,000
2.6	Kerb	m	200	$30	$6,000
2.7	Tie-into Annetts Rd Cha 400, resurface	m2	100	$25	$2,500
2.8	Services impacted upon				
	Optus	Item			
	Telstra	Item			
2.9	Traffic Management	week	1	$7,500	$7,500
	Subtotal (excl u/g services)				**$121,125**
3	**Start: Cha 400 (Annetts Rd), End: Cha 1025**				
3.1	Road safety barrier	m	600	$350	$210,000
3.2	Cut bitumen	m	1,250	$10	$12,500
3.3	Road widening	m	175	$120	$21,000
3.4	Signs and Lines (Provisional)	Item			$3,000
3.5	Remove existing driveway culverts	No.	2	$2,000	$4,000
3.6	Supply and install 375mm dia precast headwalls	No.	4	$800	$3,200
3.7	Supply and install 375mm dia pipe	m	16	$100	$1,600
3.8	Excavate pipe trench incl backfill and compaction	m	16	$70	$1,120

3.9	Tie-into side road (Cha 600), resurface	m2	100	$25	$2,500
3.10	Services impacted upon				
	Telstra	Item			
3.11	Traffic Management	week	3.5	$7,500	$26,250
	Subtotal (excl u/g services)				**$285,170**
4	**Start: Cha 1025, End: Cha 1150**				
4.1	Cut bitumen	m	125	$10	$1,250
4.2	Road widening	m	125	$140	$17,500
4.3	Signs and Lines (Provisional)	Item			$500
4.4	Traffic Management	week	1	$7,500	$7,500
	Subtotal (excl u/g services)				**$26,750**
5	**Start: Cha 1150, End: Cha 1300 (Welshpool Rd East)**				
5.1	Road safety barrier	m	150	$350	$52,500
5.2	Cut bitumen	m	300	$10	$3,000
5.3	Road widening	m	150	$120	$18,000
5.4	Signs and Lines (Provisional)	Item			$500
5.5	Tie-into Carmel Rd (Cha 1225), resurface	m2	300	$25	$7,500
5.6	Tie-into Welshpool Rd East Cha 1300, resurface	m2	300	$25	$7,500
5.7	Services impacted upon				
	Telstra	Item			
	Water	Item			
5.8	Traffic Management	week	1	$7,500	$7,500
	Subtotal (excl u/g services)				**$96,500**
6	**Start: Cha 1300, End: Cha 1500**				
6.1	Clear and mulch existing vegetation	m2	700	$1	$700
6.2	Cut bitumen	m	200	$10	$2,000
6.3	Road widening	m	200	$350	$70,000
6.4	Signs and Lines (Provisional)	Item			$1,000
6.5	Relocate power poles	No.	6	$10,000	$60,000
6.6	Services impacted upon				
	Telstra	Item			
6.7	Traffic Management	week	1	$7,500	$7,500
	Subtotal (excl u/g services)				**$141,200**
7	**Start: Cha 1500, End: Cha 1750 (Masonmill Rd North)**				
7.1	Road safety barrier	m	250	$350	$87,500
7.2	Clear and mulch existing vegetation	m2	3,125	$1	$3,125
7.3	Cut bitumen	m	500	$10	$5,000
7.4	Remove existing kerb and dispose	m	500	$25	$12,500
7.5	Road widening	m	250	$420	$105,000
7.6	Kerb	m	500	$30	$15,000
7.7	Signs and Lines (Provisional)	Item			$1,000
7.8	Imported fill (bank, placed and compacted), 2m fill asssumed	m3	3,125	$25	$78,125
7.9	Spread topsoil	m3	313	$5	$1,563
7.10	Limestone retaining wall 6 course high (around 2m)	m	250	$550	$137,500
7.11	Services impacted upon				

	Telstra	Item			
	Water	Item			
7.12	Traffic Management	week	4	$7,500	$30,000
	Subtotal (excl u/g services)				**$476,313**
8	**Start: Cha 1750 (Masonmill Rd North), End: Cha 2700**				
8.1	Clear and mulch existing vegetation	m2	7,600	$1	$7,600
8.2	Cut bitumen	m	950	$10	$9,500
8.3	Road widening	m	950	$360	$342,000
8.4	Signs and Lines (Provisional)	Item			$5,000
8.5	Imported fill (bank, placed and compacted) 1m fill assumed	m3	5,510	$25	$137,750
8.6	Spread topsoil	m3	570	$5	$2,850
8.7	Relocate power pole	No.	4	$10,000	$40,000
8.8	Tie-into Masonmill Rd North Cha 1750, resurface	m2	300	$25	$7,500
8.9	Tie-into Masonmill Rd South Cha 2350, resurface	m2	300	$25	$7,500
8.10	Tie-into Giumelli access (west) Cha 2600, resurface	m2	150	$25	$3,750
8.11	Traffic Management	week	5	$7,500	$37,500
	Subtotal (excl u/g services)				**$600,950**
9	**Start: Cha 2700, End: Cha 3200**				
9.1	Clear and mulch existing vegetation	m2	6,500	$1	$6,500
9.2	Cut bitumen	m	1,000	$10	$10,000
9.3	Road widening	m	950	$360	$342,000
9.4	Signs and Lines (Provisional)	Item			$2,500
9.5	Spread topsoil	m3	650	$5	$3,250
9.6	Relocate power poles	No.	2	$10,000	$20,000
9.7	Tie-into Giumelli access (east) Cha 3150, resurface	m2	150	$25	$3,750
9.8	Services impacted upon Underground power	Item			
9.9	Traffic Management	week	3	$7,500	$22,500
	Subtotal (excl u/g services)				**$410,500**
10	**Start: Cha 3200, End: Cha 3500**				
10.1	Clear and mulch existing vegetation	m2	2,070	$1	$2,070
10.2	Cut bitumen	m	300	$10	$3,000
10.3	Road widening	m	300	$360	$108,000
10.4	Signs and Lines (Provisional)	Item			$1,500
10.5	Spread topsoil	m3	99	$5	$495
10.6	Relocate power poles	No.	2	$10,000	$20,000
10.7	Services impacted upon Telstra Underground power	Item Item			
10.8	Traffic Management	week	2	$7,500	$15,000
	Subtotal (excl u/g services)				**$150,065**
11	**Start: Cha 3500, End: Cha 3750**				
11.1	Cut bitumen	m	250	$10	$2,500
11.2	Road widening	m	250	$360	$90,000

11.3	Signs and Lines (Provisional)	Item			$1,500
11.4	Relocate power poles	No.	3	$10,000	$30,000
11.5	Services impacted upon				
	Telstra	Item			
	Underground power	Item			
11.6	Traffic Management	week	2	$7,500	$11,250
	Subtotal (excl u/g services)				**$135,250**
12	**Start: Cha 3750, End: Cha 4200**				
12.1	Clear and mulch existing vegetation	m2	3,105	$1	$3,105
12.2	Cut bitumen	m	450	$10	$4,500
12.3	Road widening	m	450	$360	$162,000
12.4	Signs and Lines (Provisional)	Item			$2,500
12.5	Spread topsoil	m3	149	$5	$745
12.7	Services impacted upon				
	Telstra	Item			
	Underground power	Item			
12.8	Traffic Management	week	2.5	$7,500	$18,750
	Subtotal (excl u/g services)				**$191,600**
13	**Start: Cha 4200, End: Cha 5200 (Pickering Brook Rd)**				
13.1	Clear and mulch existing vegetation (2.2m min. clear)	m2	5,800	$1	$5,800
13.2	Cut bitumen	m	2,000	$10	$20,000
13.3	Road widening	m	1,000	$360	$360,000
13.4	Signs and Lines (Provisional)	Item			$5,000
13.5	Spread topsoil	m3	220	$5	$1,100
13.6	Tie-into Glen Isla Rd Cha 4275, resurface	m2	300	$25	$7,500
13.7	Services impacted upon				
	Telstra	Item			
	Underground power	Item			
13.8	Traffic Management	week	5	$7,500	$37,500
	Subtotal (excl u/g services)				**$436,900**
14	**Start: Cha 5200 (Pickering Brook Rd) End: Cha 5450**				
14.1	Clear and mulch existing vegetation	m2	5,600	$1	$5,600
14.2	Imported fill (bank, placed and compacted) 2m fill assumed	m3	9,300	$25	$232,500
14.3	New sealed pavement road surface Canning Rd	m2	2,915	$180	$524,700
14.4	New sealed pavement road surface side road	m2	700	$180	$126,000
14.5	Rip up existing Canning Rd	m2	2,800	$30	$84,000
14.6	Rip up existing connections from General Store to Canning Rd and Pickering Brook Rd	m2	1,000	$30	$30,000
14.7	Signs and Lines (Provisional)	Item			$1,500
14.8	Spread topsoil	m3	580	$5	$2,900
14.9	Relocate power poles	No.	1	$10,000	$10,000
14.10	Services impacted upon				
	Telstra	Item			
14.11	Traffic Management	week	2	$7,500	$15,000
	Subtotal (excl u/g services)				**$1,032,200**

15	**Start: Cha 5450, End: Cha 7500**				
15.1	Clear and mulch existing vegetation (2m min. clear)	m2	17,630	$1	$17,630
15.2	Cut bitumen	m	4,100	$10	$41,000
15.3	Road widening	m	4,100	$230	$943,000
15.4	Signs and Lines (Provisional)	Item			$10,000
15.5	Spread topsoil	m3	820	$5	$4,100
15.6	Services impacted upon				
	Telstra	Item			
15.7	Traffic Management	week	10.5	$7,500	$78,750
	Subtotal (excl u/g services)				**$1,094,480**
Note:	*South of Pickering Brook Road, the posted speed limit is 90km/h and power poles are well within routes clear zone. However, the City is proposing pursuing reduction of speed limit to 70km/h hence, modifications to alignment of poles or modifying poles to frangible type are not shown in estimates (unless within the road pavement)*				
16	**Start: Cha 7500, End: Cha 7900**				
16.1	Clear and mulch existing vegetation (2m min. clear)	m2	8,000	$1	$8,000
16.2	Imported fill (bank, placed and compacted) 2m fill assumed	m3	5,200	$25	$130,000
16.3	Cut bitumen	m	800	$10	$8,000
16.4	Road widening	m	800	$230	$184,000
16.5	Signs and Lines (Provisional)	Item			$2,000
16.6	Spread topsoil	m3	480	$5	$2,400
16.7	Road safety barrier	m	400	$350	$140,000
16.8	Services impacted upon				
	Telstra	Item			
16.9	Traffic Management	week	2	$7,500	$15,000
	Subtotal (excl u/g services)				**$489,400**
Note:	*Requirement for road safety barrier would be removed if required clear zone provided (but would result in additional clearing of mature trees)*				
17	**Start: Cha 7900, End: Cha 8200**				
17.1	Clear and mulch existing vegetation (2m min. clear)	m2	1,980	$1	$1,980
17.2	Cut bitumen	m	300	$10	$3,000
17.3	Road widening	m	300	$230	$69,000
17.4	Signs and Lines (Provisional)	Item			$1,000
17.5	Spread topsoil	m3	60	$5	$300
17.6	Relocate power poles	No.	2	$10,000	$20,000
17.7	Traffic Management	week	2	$7,500	$15,000
	Subtotal (excl u/g services)				**$110,280**
18	**Start: Cha 8200, End: Cha 9500**				
18.1	Clear and mulch existing vegetation (2m min. clear)	m2	11,180	$1	$11,180
18.2	Cut bitumen	m	2,600	$10	$26,000

18.3	Road widening	m	2,600	$230	$598,000
18.4	Signs and Lines (Provisional)	Item			$7,000
18.5	Spread topsoil	m3	520	$5	$2,600
18.6	Relocate power poles	No.	3	$10,000	$30,000
18.7	Services impacted upon				
	Telstra	Item			
18.8	Traffic Management	week	7	$7,500	$52,500
	Subtotal (excl u/g services)				**$727,280**
	TOTAL (excluding U/G services)				**$6,598,588**

6 STAGING / ACTION PLAN

With an overall estimated cost of over $6.5M, plus potentially significant service relocation costs, the proposed upgrades to Canning Road will need to be staged over a number of years. Various funding options may be available to the City, and all potential sources should be investigated in order to shorten the timeframe for implementation of the key treatments.

Some initial work is already in progress, with an application for Blackspot funding submitted to MRWA for the 2021-2022 financial year for the section of Canning Road between Welshpool Road East and Glenisla Road. Improvements proposed include sealed shoulders on both sides along the entire section, upgraded lighting, removal of roadside hazards, improved delineation, installation of tactile edge lines and pavement markers.

The City is also currently considering the preparation of an application to MRWA to amend the speed zoning along the entire section of the study area to 70km/h.

In terms of prioritising the treatments proposed within the study report, this can be done in a number of ways. Clearly, it would be preferable to implement the proposals that have the largest risk attached first, but this may not be possible, due to funding issues. It is therefore recommended that the order of implementation is based on an assessment of ‘best bang for buck’.

In this regard, there are a number of issues that present significant hazards to road users, which can be addressed relatively cheaply, and financed primarily in-house. Other, more expensive treatments, might be prioritised simply in terms of fast tracking applications and submissions for suitable funding from external sources. Where a particular treatment, such as the sealing of shoulders and provision of edge lines etc, covers a significant length of the road, specific sections should be identified for priority, based on the extent of the hazards (preponderance of trees adjacent the road, or number and extent of drop offs), and the level of exposure (higher traffic or cyclist numbers).

It should be noted, however, that the extent of, or need for, some of the treatments may be affected by changes to the speed limits.

Whilst the scope and budget of this project does not allow for in depth analysis of the above risk or funding factors to determine optimum priority, DVC has provided an initial basic list of priority treatments in **Table 6.1** below.

Table 6.1: Indicative priorities of identified treatments.

Ref No.	Treatment	Priority	Comments
1.1	On-Road Cycle Lanes	Medium - Low	Requires further investigation to prioritise sections.
1.2	Sealed shoulders, (audible) edge lines & guideposts	Medium - High	Requires further investigation to prioritise sections.
1.3	Rationalisation of speed limits	High	Outcome of application will affect other treatments.
1.4	Visibility / Sight distance	Medium	Some 'quick fixes' with vegetation removal. 1.3 may affect requirements.
1.5	Street Lighting	Medium	Gradual program of upgrades.
1.6	Signage Strategy	Medium	Requires further study.
2.1	Safety Fence Extension	Medium	Medium risk, low cost.
2.2	Headwalls etc.	Medium - Low	Low risk.
3.1	Masonmill Road Intersections	Medium	Potential for significant crashes.
3.2	Private property - truck access	Medium	Potential for significant crashes.
3.3	'Giumelli' Service Road Intersections	Medium - Low	Potential for crashes. Some interim measures possible.
3.4	Glen Isla Road Intersection	Medium / Low	Some easy initial improvements.
3.5	Pickering Brook Road intersection	Low-Medium	Some works carried out. Further improvements required.
4.1	Northbound approach to Pickering Brook Road intersection	High	Priority action required.
4.2	Old Canning Road intersection	Low - Medium	Potential for crashes but further study required.
4.3	Property access – pallets	Low	Liaison with property owner required.
4.4	Canning Mills Road intersection	High	Upgrades already planned.

APPENDIX A: TRAFFIC DATA


CANNING RD - (0003) - [CANNING MILLS]
400 m North of CANNING MILLS RD
X.....415520 Y.....6451738
Speed Limit <90>
McCorkill Rd
Repatriation Rd
Pickering Brook Rd
Cunnold St
Carinyah Rd
East
Canning Rd
Korung National Park
Westons Rd
Canning Mills Rd
Google

MetroCount Traffic Executive

Speed Histogram

SpeedHist-135 -- English (ENU)

Datasets:

Site:	**[CANNING RD] !400m North of CANNING MILLS Rd <90>**
Attribute:	KALAMUNDA
Direction:	7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration:	11:04 Wednesday, May 15, 2019 => 8:19 Wednesday, May 22, 2019,
Zone:	
File:	CANNING RD 0 2019-05-22 1147.EC0 (Plus)
Identifier:	AE63J0TT MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**11:05 Wednesday, May 15, 2019 => 9:00 Thursday, May 16, 2019 (0.913194)**
Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range:	10 - 200 km/h.
Direction:	North, East, South, West (bound), P = North
Separation:	GapX > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 2215 / 2745 (80.69%)

Speed Statistics

Direction: NS
Vehicles = 2215
Posted speed limit = 90 km/h, Exceeding = 435 (19.64%), Mean Exceeding = 96.23 km/h
Maximum = 166.5 km/h, **Minimum** = 16.5 km/h, **Mean** = 83.5 km/h
85% Speed = 91.1 km/h, **95% Speed** = 97.6 km/h, **Median** = 84.2 km/h
20 km/h Pace = 73 - 93, **Number in Pace** = 1742 (78.65%)
Variance = 107.57, **Standard Deviation** = 10.37 km/h

MetroCount Traffic Executive

Speed Histogram

SpeedHist-150 -- English (ENA)

Datasets:

Site:	**[CANNING RD 1 -(0003)] 400 m North of CANNING MILLS RD <90>**
Attribute:	CANNING MILLS
Direction:	7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration:	12:00 Tuesday, 8 March 2016 => 11:08 Wednesday, 16 March 2016,
Zone:	
File:	CANNING RD 1 -(0003) 0 2016-03-16 1108.EC0 (Plus)
Identifier:	AE63J0TT MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**12:00 Tuesday, 8 March 2016 => 12:00 Tuesday, 15 March 2016 (7)**
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), P = North
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 18340 / 20795 (88.19%)

Speed Statistics

Direction: NS
Vehicles = 18340
Posted speed limit = 90 km/h, Exceeding = 4616 (25.17%), Mean Exceeding = 96.65 km/h
Maximum = 158.9 km/h, **Minimum** = 14.6 km/h, **Mean** = 85.0 km/h
85% Speed = 92.9 km/h, **95% Speed** = 99.7 km/h, **Median** = 85.3 km/h
20 km/h Pace = 75 - 95, **Number in Pace** = 14369 (78.35%)
Variance = 113.63, **Standard Deviation** = 10.66 km/h

MetroCount Traffic Executive

Vehicle Counts (Virtual Day)

VirtVehicleCount-133 -- English (ENU)

Datasets:

Site:	**[CANNING RD] !400m North of CANNING MILLS Rd <90>**
Attribute:	KALAMUNDA
Direction:	7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration:	11:04 Wednesday, May 15, 2019 => 8:19 Wednesday, May 22, 2019,
Zone:	
File:	CANNING RD 0 2019-05-22 1147.EC0 (Plus)
Identifier:	AE63J0TT MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**11:05 Wednesday, May 15, 2019 => 9:00 Thursday, May 16, 2019 (0.913194)**
Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range:	10 - 200 km/h.
Direction:	North, East, South, West (bound), P = North
Separation:	GapX > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 2215 / 2745 (80.69%)

*** Virtual Day - Total=2215 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
3	**4**	**0**	**11**	**13**	**35**	**117**	**221**	**269**	**–**	**–**	**126**	**154**	**145**	**182**	**250**	**220**	**205**	**91**	**53**	**57**	**28**	**22**	**9**
1	1	0	1	1	5	21	45	59	–	–	25	42	28	40	**64**	53	51	25	14	9	6	6	3
1	0	0	3	3	6	29	53	85	–	–	26	36	36	39	**60**	54	67	21	17	21	8	9	3
1	1	0	4	2	13	27	65	66	–	–	38	43	48	47	**66**	62	48	21	13	7	8	3	3
0	2	0	3	7	11	40	58	59	–	–	37	33	33	56	**60**	51	39	24	9	20	6	4	0

PM Peak 1500 - 1600 (250), PM PHF=0.95

Numbers have been rounded to the nearest integer.

MetroCount Traffic Executive

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-148 -- English (ENA)

Datasets:

Site:	**[CANNING RD 1 -(0003)] 400 m North of CANNING MILLS RD <90>**
Attribute:	CANNING MILLS
Direction:	7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration:	12:00 Tuesday, 8 March 2016 => 11:08 Wednesday, 16 March 2016,
Zone:	
File:	CANNING RD 1 -(0003) 0 2016-03-16 1108.EC0 (Plus)
Identifier:	AE63J0TT MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**12:00 Tuesday, 8 March 2016 => 12:00 Tuesday, 15 March 2016 (7)**
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), P = North
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 18340 / 20795 (88.19%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-148
Site: CANNING RD 1 -(0003).0.1NS
Description: **400 m North of CANNING MILLS RD <90>**
Filter time: **12:00 Tuesday, 8 March 2016 => 12:00 Tuesday, 15 March 2016**
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) Span(0 - 100)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	4.0	7.0	6.0	3.0	5.0	17.0	22.0	5.0	9.1
0100-0200	1.0	2.0	4.0	6.0	3.0	10.0	12.0	3.2	5.4
0200-0300	1.0	5.0	3.0	5.0	3.0	0.0	11.0	3.4	4.0
0300-0400	7.0	3.0	2.0	4.0	4.0	5.0	7.0	4.0	4.6
0400-0500	22.0	8.0	11.0	16.0	10.0	11.0	4.0	13.4	11.7
0500-0600	60.0	58.0	64.0	64.0	48.0	26.0	18.0	58.8	48.3
0600-0700	182.0	138.0	160.0	138.0	139.0	60.0	30.0	151.4	121.0
0700-0800	232.0	220.0	243.0	223.0	228.0	107.0	86.0	229.2	191.3
0800-0900	**269.0**	**238.0**	**283.0**	**276.0**	**255.0**	167.0	120.0	**264.2**	**229.7**
0900-1000	142.0	183.0	144.0	144.0	152.0	175.0	187.0	153.0	161.0
1000-1100	107.0	128.0	100.0	179.0	164.0	**259.0**	186.0	135.6	160.4
1100-1200	103.0	120.0	161.0	138.0	167.0	210.0	**228.0**	137.8	161.0
1200-1300	119.0	107.0	133.0	148.0	188.0	**207.0**	186.0	139.0	155.4
1300-1400	134.0	138.0	133.0	148.0	159.0	163.0	180.0	142.4	150.7
1400-1500	171.0	177.0	187.0	164.0	224.0	173.0	198.0	184.6	184.9
1500-1600	**233.0**	248.0	**262.0**	**281.0**	244.0	172.0	**220.0**	253.6	**237.1**
1600-1700	214.0	**255.0**	244.0	268.0	**289.0**	203.0	176.0	**254.0**	235.6
1700-1800	185.0	241.0	223.0	219.0	258.0	158.0	128.0	225.2	201.7
1800-1900	129.0	144.0	149.0	134.0	171.0	132.0	123.0	145.4	140.3
1900-2000	56.0	75.0	75.0	84.0	94.0	79.0	52.0	76.8	73.6
2000-2100	54.0	46.0	49.0	48.0	53.0	60.0	40.0	50.0	50.0
2100-2200	38.0	32.0	35.0	30.0	46.0	77.0	23.0	36.2	40.1
2200-2300	35.0	11.0	25.0	21.0	43.0	48.0	14.0	27.0	28.1
2300-2400	8.0	13.0	11.0	14.0	19.0	30.0	9.0	13.0	14.9
Totals									
0700-1900	2038.0	2199.0	2262.0	2322.0	2499.0	2126.0	2018.0	2264.0	2209.1
0600-2200	2368.0	2490.0	2581.0	2622.0	2831.0	2402.0	2163.0	2578.4	2493.9
0600-0000	2411.0	2514.0	2617.0	2657.0	2893.0	2480.0	2186.0	2618.4	2536.9
0000-0000	2506.0	2597.0	2707.0	2755.0	2966.0	2549.0	2260.0	2706.2	2620.0
AM Peak	0800	0800	0800	0800	0800	1000	1100		
	269.0	238.0	283.0	276.0	255.0	259.0	228.0		
PM Peak	1500	1600	1500	1500	1600	1200	1500		
	233.0	255.0	262.0	281.0	289.0	207.0	220.0		

*** - No data.**

MetroCount Traffic Executive

Class Speed Matrix

ClassMatrix-27 -- English (ENA)

Datasets:

Site:	**[CANNING RD (0003)] 150m N of POMEROY RD <60>**
Attribute:	LESMURDIE
Direction:	7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration:	9:19 Thursday, 1 September 2016 => 11:13 Thursday, 8 September 2016,
Zone:	
File:	CANNING RD (0003) 0 2016-09-08 1114.EC0 (Plus)
Identifier:	EA90MK90 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**9:20 Thursday, 1 September 2016 => 11:13 Thursday, 8 September 2016 (7.07869)**
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), P = North
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 33621 / 33656 (99.90%)

Class Speed Matrix

ClassMatrix-27
Site: CANNING RD (0003).0.1NS
Description: **150m N of POMEROY RD <60>**
Filter time: **9:20 Thursday, 1 September 2016 => 11:13 Thursday, 8 September 2016**
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) Span(0 - 100)

Speed (km/h)	Class												Speed Totals	
	SV 1	SVT 2	TB2 3	TB3 4	T4 5	ART3 6	ART4 7	ART5 8	ART6 9	BD 10	DRT 11	TRT 12		
10 - 20	2	.	.	.	.	.	.	.	.	.	.	.	2	0.0%
20 - 30	32	1	.	3	1	.	.	.	1	.	.	.	38	0.1%
30 - 40	219	9	11	5	21	1	2	1	4	4	1	1	279	0.8%
40 - 50	963	32	97	20	13	4	4	5	9	4	2	.	1153	3.4%
50 - 60	12616	292	748	97	60	42	31	17	15	14	1	1	13934	41.4%
60 - 70	14489	246	716	66	30	17	27	1	5	1	.	.	15598	46.4%
70 - 80	2207	22	102	3	1	1	2	.	1	.	.	.	2339	7.0%
80 - 90	209	.	5	.	.	.	.	.	.	.	.	.	214	0.6%
90 - 100	39	.	2	.	.	.	.	.	.	.	.	.	41	0.1%
100 - 110	11	.	.	.	.	.	.	.	.	.	.	.	11	0.0%
110 - 120	7	.	.	.	.	.	.	.	.	.	.	.	7	0.0%
120 - 130	3	.	.	.	.	.	.	.	.	.	.	.	3	0.0%
130 - 140	2	.	.	.	.	.	.	.	.	.	.	.	2	0.0%
140 - 150	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
150 - 160	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
Class Totals	30799	602	1681	194	126	65	66	24	35	23	4	2	33621	
	91.6%	1.8%	5.0%	0.6%	0.4%	0.2%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%		

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MetroCount Traffic Executive

Speed Histogram

SpeedHist-28 -- English (ENA)

Datasets:

Site:	**[CANNING RD (0003)] 150m N of POMEROY RD <60>**
Attribute:	LESMURDIE
Direction:	7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration:	9:19 Thursday, 1 September 2016 => 11:13 Thursday, 8 September 2016,
Zone:	
File:	CANNING RD (0003) 0 2016-09-08 1114.EC0 (Plus)
Identifier:	EA90MK90 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**9:20 Thursday, 1 September 2016 => 11:13 Thursday, 8 September 2016 (7.07869)**
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), P = North
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 33621 / 33656 (99.90%)

Speed Statistics

Direction: NS
Vehicles = 33621
Posted speed limit = 60 km/h, Exceeding = 18215 (54.18%), Mean Exceeding = 65.56 km/h
Maximum = 139.3 km/h, **Minimum** = 13.6 km/h, **Mean** = 60.8 km/h
85% Speed = 67.0 km/h, **95% Speed** = 71.6 km/h, **Median** = 60.5 km/h
20 km/h Pace = 51 - 71, **Number in Pace** = 29747 (88.48%)
Variance = 50.01, **Standard Deviation** = 7.07 km/h

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MetroCount Traffic Executive

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-26 -- English (ENA)

Datasets:

Site:	**[CANNING RD (0003)] 150m N of POMEROY RD <60>**
Attribute:	LESMURDIE
Direction:	7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration:	9:19 Thursday, 1 September 2016 => 11:13 Thursday, 8 September 2016,
Zone:	
File:	CANNING RD (0003) 0 2016-09-08 1114.EC0 (Plus)
Identifier:	EA90MK90 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**9:20 Thursday, 1 September 2016 => 11:13 Thursday, 8 September 2016 (7.07869)**
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), P = North
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 33621 / 33656 (99.90%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-26
Site: CANNING RD (0003).0.1NS
Description: **150m N of POMEROY RD <60>**
Filter time: **9:20 Thursday, 1 September 2016 => 11:13 Thursday, 8 September 2016**
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) Span(0 - 100)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	3.0	5.0	7.0	7.0	6.0	14.0	29.0	5.6	10.1
0100-0200	0.0	3.0	1.0	0.0	7.0	9.0	14.0	2.2	4.9
0200-0300	5.0	3.0	3.0	4.0	1.0	6.0	4.0	3.2	3.7
0300-0400	4.0	6.0	6.0	3.0	4.0	4.0	6.0	4.6	4.7
0400-0500	14.0	8.0	10.0	18.0	17.0	12.0	7.0	13.4	12.3
0500-0600	76.0	70.0	63.0	69.0	63.0	27.0	16.0	68.2	54.9
0600-0700	151.0	170.0	156.0	173.0	161.0	65.0	40.0	162.2	130.9
0700-0800	325.0	348.0	310.0	**213.0**	285.0	149.0	105.0	296.2	247.9
0800-0900	**572.0**	**590.0**	**577.0**	0.0	**587.0**	273.0	185.0	**465.2**	**397.7**
0900-1000	310.0	308.0	272.0	33.5	297.0	362.0	351.0	209.0	245.9
1000-1100	254.0	256.0	235.0	136.5	311.0	419.0	512.0	221.5	282.5
1100-1200	261.0	240.0	277.0	136.0	313.0	**458.0**	**647.0**	227.2	308.5
1200-1300	265.0	277.0	243.0	303.0	296.0	**493.0**	**725.0**	276.8	371.7
1300-1400	279.0	275.0	265.0	290.0	345.0	455.0	660.0	290.8	367.0
1400-1500	369.0	338.0	358.0	372.0	385.0	429.0	504.0	364.4	393.6
1500-1600	**559.0**	**529.0**	**488.0**	**550.0**	**554.0**	423.0	448.0	**536.0**	**507.3**
1600-1700	476.0	416.0	390.0	448.0	403.0	363.0	378.0	426.6	410.6
1700-1800	360.0	336.0	356.0	368.0	337.0	356.0	288.0	351.4	343.0
1800-1900	243.0	238.0	228.0	263.0	289.0	246.0	171.0	252.2	239.7
1900-2000	133.0	120.0	125.0	146.0	145.0	146.0	90.0	133.8	129.3
2000-2100	67.0	58.0	101.0	80.0	101.0	96.0	90.0	81.4	84.7
2100-2200	45.0	63.0	62.0	73.0	93.0	82.0	50.0	67.2	66.9
2200-2300	30.0	33.0	24.0	41.0	75.0	65.0	27.0	40.6	42.1
2300-2400	19.0	10.0	16.0	22.0	37.0	52.0	10.0	20.8	23.7
Totals									
0700-1900	4273.0	4151.0	3999.0	3113.0	4402.0	4426.0	4974.0	3917.3	4115.3
0600-2200	4669.0	4562.0	4443.0	3585.0	4902.0	4815.0	5244.0	4361.9	4527.0
0600-0000	4718.0	4605.0	4483.0	3648.0	5014.0	4932.0	5281.0	4423.3	4592.9
0000-0000	4820.0	4700.0	4573.0	3749.0	5112.0	5004.0	5357.0	4520.5	4683.4
AM Peak	0800	0800	0800	0700	0800	1100	1100		
	572.0	590.0	577.0	213.0	587.0	458.0	647.0		
PM Peak	1500	1500	1500	1500	1500	1200	1200		
	559.0	529.0	488.0	550.0	554.0	493.0	725.0		

*** - No data.**

MetroCount Traffic Executive

Class Speed Matrix

ClassMatrix-2387 -- English (ENA)

Datasets:

Site:	**[CANNING ROAD (0003)] 161 m West of GLENISLA RD <70>**
Attribute:	CARMEL
Direction:	8 - East bound A>B, West bound B>A. **Lane:** 0
Survey Duration:	9:55 Friday, 14 September 2018 => 10:33 Friday, 21 September 2018,
Zone:	
File:	CANNING ROAD (0003) 0 2018-09-21 1033.EC0 (Plus)
Identifier:	EA45EKEW MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**9:56 Friday, 14 September 2018 => 10:33 Friday, 21 September 2018 (7.0262)**
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), P = East
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 26391 / 26438 (99.82%)

Class Speed Matrix

ClassMatrix-2387
Site: CANNING ROAD (0003).0.1EW
Description: **161 m West of GLENISLA RD <70>**
Filter time: **9:56 Friday, 14 September 2018 => 10:33 Friday, 21 September 2018**
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) Span(0 - 100)

Speed (km/h)	Class												Speed Totals	
	SV 1	SVT 2	TB2 3	TB3 4	T4 5	ART3 6	ART4 7	ART5 8	ART6 9	BD 10	DRT 11	TRT 12		
10 - 20	12	.	.	.	2	.	.	.	.	.	.	.	14	0.1%
20 - 30	106	.	.	2	7	.	.	.	1	.	.	.	116	0.4%
30 - 40	101	.	9	2	1	.	.	.	.	.	.	.	113	0.4%
40 - 50	61	.	6	1	3	.	.	.	3	.	1	.	75	0.3%
50 - 60	196	10	28	4	1	.	1	.	4	.	7	.	251	1.0%
60 - 70	4056	107	344	29	11	13	13	12	49	16	50	1	4701	17.8%
70 - 80	11556	259	1021	92	39	32	58	15	166	60	137	1	13436	50.9%
80 - 90	5440	156	558	47	23	20	20	4	85	18	76	2	6449	24.4%
90 - 100	854	14	105	3	5	1	1	1	8	3	3	.	998	3.8%
100 - 110	148	.	23	.	2	.	.	.	.	.	.	.	173	0.7%
110 - 120	40	.	1	.	.	.	.	.	.	.	.	.	41	0.2%
120 - 130	12	.	.	.	.	.	.	.	.	.	.	.	12	0.0%
130 - 140	10	.	.	.	.	.	.	.	.	.	.	.	10	0.0%
140 - 150	2	.	.	.	.	.	.	.	.	.	.	.	2	0.0%
150 - 160	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
Class Totals	22594	546	2095	180	94	66	93	32	316	97	274	4	26391	
	85.6%	2.1%	7.9%	0.7%	0.4%	0.3%	0.4%	0.1%	1.2%	0.4%	1.0%	0.0%		

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MetroCount Traffic Executive

Speed Histogram

SpeedHist-2389 -- English (ENA)

Datasets:

Site:	**[CANNING ROAD (0003)] 161 m West of GLENISLA RD <70>**
Attribute:	CARMEL
Direction:	8 - East bound A>B, West bound B>A. **Lane:** 0
Survey Duration:	9:55 Friday, 14 September 2018 => 10:33 Friday, 21 September 2018,
Zone:	
File:	CANNING ROAD (0003) 0 2018-09-21 1033.EC0 (Plus)
Identifier:	EA45EKEW MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**9:56 Friday, 14 September 2018 => 10:33 Friday, 21 September 2018 (7.0262)**
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), P = East
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 26391 / 26438 (99.82%)

Speed Statistics

Direction: EW
Vehicles = 26391
Posted speed limit = 60 km/h, Exceeding = 25822 (97.84%), Mean Exceeding = 76.76 km/h
Maximum = 142.8 km/h, **Minimum** = 10.6 km/h, **Mean** = 76.0 km/h
85% Speed = 83.5 km/h, **95% Speed** = 89.3 km/h, **Median** = 76.0 km/h
20 km/h Pace = 66 - 86, **Number in Pace** = 21900 (82.98%)
Variance = 84.50, **Standard Deviation** = 9.19 km/h

MetroCount Traffic Executive

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-2386 -- English (ENA)

Datasets:

Site:	**[CANNING ROAD (0003)] 161 m West of GLENISLA RD <70>**
Attribute:	CARMEL
Direction:	8 - East bound A>B, West bound B>A. **Lane:** 0
Survey Duration:	9:55 Friday, 14 September 2018 => 10:33 Friday, 21 September 2018,
Zone:	
File:	CANNING ROAD (0003) 0 2018-09-21 1033.EC0 (Plus)
Identifier:	EA45EKEW MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**9:56 Friday, 14 September 2018 => 10:33 Friday, 21 September 2018 (7.0262)**
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), P = East
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 26391 / 26438 (99.82%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-2386
Site: CANNING ROAD (0003).0.1EW
Description: **161 m West of GLENISLA RD <70>**
Filter time: **9:56 Friday, 14 September 2018 => 10:33 Friday, 21 September 2018**
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) Span(0 - 100)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	13.0	3.0	7.0	6.0	8.0	12.0	19.0	7.4	9.7
0100-0200	7.0	1.0	1.0	2.0	5.0	4.0	8.0	3.2	4.0
0200-0300	7.0	3.0	0.0	2.0	1.0	4.0	6.0	2.6	3.3
0300-0400	3.0	6.0	5.0	7.0	13.0	3.0	6.0	6.8	6.1
0400-0500	16.0	24.0	20.0	18.0	19.0	10.0	10.0	19.4	16.7
0500-0600	53.0	62.0	71.0	59.0	55.0	28.0	13.0	60.0	48.7
0600-0700	140.0	136.0	126.0	123.0	125.0	71.0	33.0	130.0	107.7
0700-0800	264.0	264.0	249.0	266.0	243.0	131.0	91.0	257.2	215.4
0800-0900	**347.0**	**353.0**	**369.0**	**399.0**	**345.0**	234.0	188.0	**362.6**	**319.3**
0900-1000	210.0	191.0	236.0	247.0	9.0	266.0	231.0	150.3	174.9
1000-1100	211.0	227.0	239.0	219.0	111.5	321.0	353.0	186.5	224.1
1100-1200	199.0	266.0	265.0	279.0	241.0	**390.0**	**449.0**	250.0	298.4
1200-1300	214.0	230.0	240.0	248.0	241.0	406.0	486.0	234.6	295.0
1300-1400	252.0	241.0	235.0	253.0	255.0	**414.0**	**496.0**	247.2	306.6
1400-1500	237.0	237.0	277.0	280.0	314.0	378.0	480.0	269.0	314.7
1500-1600	**325.0**	**345.0**	**381.0**	324.0	**352.0**	393.0	423.0	**345.4**	**363.3**
1600-1700	291.0	310.0	314.0	**346.0**	313.0	321.0	364.0	314.8	322.7
1700-1800	232.0	268.0	236.0	258.0	299.0	213.0	255.0	258.6	251.6
1800-1900	147.0	168.0	175.0	186.0	219.0	136.0	142.0	179.0	167.6
1900-2000	94.0	75.0	107.0	121.0	115.0	82.0	77.0	102.4	95.9
2000-2100	50.0	64.0	82.0	65.0	85.0	46.0	57.0	69.2	64.1
2100-2200	37.0	51.0	39.0	50.0	91.0	55.0	30.0	53.6	50.4
2200-2300	22.0	22.0	19.0	26.0	54.0	50.0	29.0	28.6	31.7
2300-2400	8.0	10.0	11.0	16.0	44.0	48.0	11.0	17.8	21.1
Totals									
0700-1900	2929.0	3100.0	3216.0	3305.0	2942.5	3603.0	3958.0	3055.2	3253.6
0600-2200	3250.0	3426.0	3570.0	3664.0	3358.5	3857.0	4155.0	3410.4	3571.7
0600-0000	3280.0	3458.0	3600.0	3706.0	3456.5	3955.0	4195.0	3456.8	3624.6
0000-0000	3379.0	3557.0	3704.0	3800.0	3557.5	4016.0	4257.0	3556.2	3713.1
AM Peak	0800	0800	0800	0800	0800	1100	1100		
	347.0	353.0	369.0	399.0	345.0	390.0	449.0		
PM Peak	1500	1500	1500	1600	1500	1300	1300		
	325.0	345.0	381.0	346.0	352.0	414.0	496.0		

*** - No data.**

MetroCount Traffic Executive

Class Speed Matrix

ClassMatrix-198 -- English (ENA)

Datasets:

Site:	**[CANNING RD -(0003)] 40 m West of MASONMILL RD <80>**
Attribute:	CARMEL
Direction:	6 - West bound A>B, East bound B>A. **Lane:** 0
Survey Duration:	12:00 Tuesday, 31 May 2016 => 10:20 Thursday, 9 June 2016,
Zone:	
File:	CANNING RD -(0003) 0 2016-06-09 1021.EC0 (Plus)
Identifier:	JM12PA3T MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

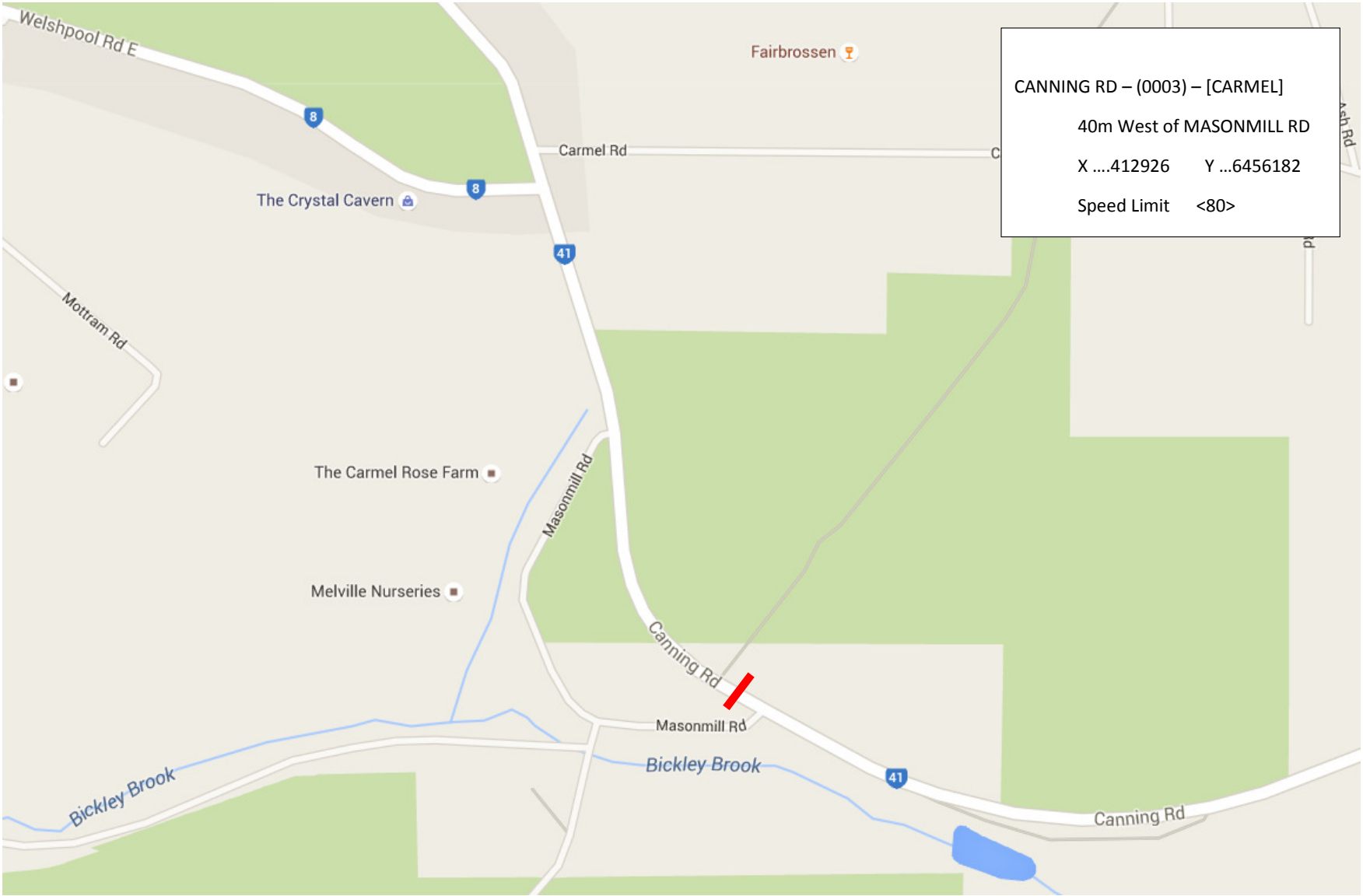
Profile:

Filter time:	**12:00 Tuesday, 31 May 2016 => 10:00 Thursday, 9 June 2016 (8.91667)**
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), P = East
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 29901 / 29931 (99.90%)

Class Speed Matrix

ClassMatrix-198
Site: CANNING RD -(0003).0.1WE
Description: **40 m West of MASONMILL RD <80>**
Filter time: **12:00 Tuesday, 31 May 2016 => 10:00 Thursday, 9 June 2016**
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) Span(0 - 100)

Speed (km/h)	Class												Speed Totals	
	SV 1	SVT 2	TB2 3	TB3 4	T4 5	ART3 6	ART4 7	ART5 8	ART6 9	BD 10	DRT 11	TRT 12		
10 - 20	17	.	2	.	.	.	1	.	.	.	.	.	20	0.1%
20 - 30	57	3	11	2	4	.	1	1	.	.	1	.	80	0.3%
30 - 40	134	.	14	.	6	.	.	1	1	1	.	.	157	0.5%
40 - 50	209	2	22	1	17	.	3	.	11	8	6	2	281	0.9%
50 - 60	291	16	15	3	1	.	.	.	4	1	2	.	333	1.1%
60 - 70	2133	79	130	19	8	6	11	3	15	2	6	1	2413	8.1%
70 - 80	11416	352	771	92	51	35	44	19	60	16	65	2	12923	43.2%
80 - 90	9745	351	675	96	37	22	29	15	128	37	53	.	11188	37.4%
90 - 100	1754	45	146	12	4	3	6	3	48	5	3	.	2029	6.8%
100 - 110	326	6	19	.	1	.	1	.	.	.	1	.	354	1.2%
110 - 120	80	1	4	.	.	.	.	.	.	.	.	.	85	0.3%
120 - 130	28	.	4	.	.	.	.	.	.	.	.	.	32	0.1%
130 - 140	2	.	.	.	1	.	.	.	.	.	.	.	3	0.0%
140 - 150	2	.	.	.	.	.	.	.	.	.	.	.	2	0.0%
150 - 160	1	.	.	.	.	.	.	.	.	.	.	.	1	0.0%
Class Totals	26195	855	1813	225	130	66	96	42	267	70	137	5	29901	
	87.6%	2.9%	6.1%	0.8%	0.4%	0.2%	0.3%	0.1%	0.9%	0.2%	0.5%	0.0%		


CANNING RD – (0003) – [CARMEL]
40m West of MASONMILL RD
X ….412926 Y …6456182
Speed Limit <80>
Welshpool Rd E
Fairbrossen
Carmel Rd
The Crystal Cavern
Mottram Rd
The Carmel Rose Farm
Masonmill Rd
Melville Nurseries
Canning Rd
Masonmill Rd
Bickley Brook
Bickley Brook
Canning Rd
8
8
41
41

MetroCount Traffic Executive

Speed Histogram

SpeedHist-254 -- English (ENA)

Datasets:

Site:	**[CANNING RD -(0003)] 40 m West of MASONMILL RD <80>**
Attribute:	CARMEL
Direction:	6 - West bound A>B, East bound B>A. **Lane:** 0
Survey Duration:	12:00 Tuesday, 31 May 2016 => 10:20 Thursday, 9 June 2016,
Zone:	
File:	CANNING RD -(0003) 0 2016-06-09 1021.EC0 (Plus)
Identifier:	JM12PA3T MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**12:00 Tuesday, 31 May 2016 => 10:00 Thursday, 9 June 2016 (8.91667)**
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), P = East
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 29901 / 29931 (99.90%)

Speed Statistics

Direction: EW
Vehicles = 29901
Posted speed limit = 80 km/h, Exceeding = 13694 (45.80%), Mean Exceeding = 86.17 km/h
Maximum = 156.8 km/h, **Minimum** = 10.3 km/h, **Mean** = 79.0 km/h
85% Speed = 86.8 km/h, **95% Speed** = 92.9 km/h, **Median** = 79.2 km/h
20 km/h Pace = 69 - 89, **Number in Pace** = 24231 (81.04%)
Variance = 97.82, **Standard Deviation** = 9.89 km/h

MetroCount Traffic Executive

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-197 -- English (ENA)

Datasets:

Site:	**[CANNING RD -(0003)] 40 m West of MASONMILL RD <80>**
Attribute:	CARMEL
Direction:	6 - West bound A>B, East bound B>A. **Lane:** 0
Survey Duration:	12:00 Tuesday, 31 May 2016 => 10:20 Thursday, 9 June 2016,
Zone:	
File:	CANNING RD -(0003) 0 2016-06-09 1021.EC0 (Plus)
Identifier:	JM12PA3T MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**12:00 Tuesday, 31 May 2016 => 10:00 Thursday, 9 June 2016 (8.91667)**
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), P = East
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 29901 / 29931 (99.90%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-197
Site: CANNING RD -(0003).0.1WE
Description: **40 m West of MASONMILL RD <80>**
Filter time: **12:00 Tuesday, 31 May 2016 => 10:00 Thursday, 9 June 2016**
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) Span(0 - 100)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	14.0	5.0	4.0	7.0	3.0	16.0	24.0	6.3	9.3
0100-0200	8.0	3.0	2.0	4.5	4.0	9.0	14.0	4.0	5.7
0200-0300	4.0	1.0	3.0	3.0	1.0	6.0	4.0	2.6	3.1
0300-0400	6.0	6.0	3.5	6.0	2.0	11.0	5.0	4.7	5.4
0400-0500	3.0	10.0	12.5	13.0	15.0	11.0	2.0	11.3	10.2
0500-0600	17.0	54.0	46.5	49.0	48.0	18.0	14.0	44.3	38.0
0600-0700	35.0	121.0	137.0	137.0	116.0	49.0	32.0	117.1	100.1
0700-0800	67.0	259.0	257.5	259.5	245.0	110.0	99.0	229.3	201.6
0800-0900	106.0	**367.0**	**358.5**	**345.0**	**333.0**	188.0	205.0	**316.1**	**289.6**
0900-1000	186.0	204.0	203.5	164.0	213.0	243.0	207.0	191.1	198.7
1000-1100	234.0	168.0	173.0	199.0	240.0	271.0	298.0	197.8	219.5
1100-1200	**332.0**	215.0	202.0	211.0	246.0	**334.0**	**414.0**	234.7	269.5
1200-1300	**325.0**	200.5	197.0	188.0	213.0	**328.0**	**450.0**	217.3	255.4
1300-1400	289.0	182.0	180.5	218.0	211.0	288.0	395.0	206.1	236.2
1400-1500	313.0	261.5	235.5	272.0	312.0	270.0	342.0	270.1	278.1
1500-1600	291.0	**321.5**	310.0	333.0	341.0	265.0	322.0	318.3	312.8
1600-1700	254.0	292.5	**346.0**	**353.0**	**345.0**	278.0	323.0	**318.4**	**314.4**
1700-1800	211.0	278.0	261.5	298.0	318.0	186.0	231.0	272.3	258.1
1800-1900	102.0	147.5	152.5	173.0	226.0	108.0	146.0	157.3	150.6
1900-2000	67.0	80.0	66.0	105.0	102.0	51.0	76.0	80.9	77.0
2000-2100	37.0	52.0	50.0	74.0	56.0	45.0	52.0	53.0	52.0
2100-2200	27.0	43.0	48.5	59.0	81.0	42.0	53.0	50.0	49.4
2200-2300	14.0	21.5	22.0	16.0	56.0	32.0	22.0	24.7	25.2
2300-2400	6.0	12.5	14.5	11.0	30.0	33.0	16.0	14.4	16.7
Totals									
0700-1900	2710.0	2896.5	2877.5	3013.5	3243.0	2869.0	3432.0	2928.9	2984.4
0600-2200	2876.0	3192.5	3179.0	3388.5	3598.0	3056.0	3645.0	3229.9	3263.0
0600-0000	2896.0	3226.5	3215.5	3415.5	3684.0	3121.0	3683.0	3269.1	3304.9
0000-0000	2948.0	3305.5	3287.0	3498.0	3757.0	3192.0	3746.0	3342.2	3376.7
AM Peak	1100	0800	0800	0800	0800	1100	1100		
	332.0	367.0	358.5	345.0	333.0	334.0	414.0		
PM Peak	1200	1500	1600	1600	1600	1200	1200		
	325.0	321.5	346.0	353.0	345.0	328.0	450.0		

*** - No data.**

MetroCount Traffic Executive

Class Speed Matrix

ClassMatrix-269 -- English (ENU)

Datasets:

Site:	**[PICKERING BR RD 1] 100m North West of CARINYAH Road <70>**
Attribute:	PICKERING BROOK
Direction:	6 - West bound A>B, East bound B>A. **Lane:** 0
Survey Duration:	11:53 Wednesday, June 12, 2019 => 8:19 Wednesday, June 19, 2019,
Zone:	
File:	PICKERING BR RD 1 0 2019-06-19 0820.EC0 (Plus)
Identifier:	AC73KEVC MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**11:54 Wednesday, June 12, 2019 => 8:19 Wednesday, June 19, 2019 (6.851)**
Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range:	10 - 200 km/h.
Direction:	North, East, South, West (bound), P = East
Separation:	GapX > 0 sec, Span 0 - 100 metre
Name:	70kmh_roads
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 10348 / 10366 (99.83%)

Class Speed Matrix

ClassMatrix-269
Site: PICKERING BR RD 1.0.1WE
Description: **100m North West of CARINYAH Road <70>**
Filter time: **11:54 Wednesday, June 12, 2019 => 8:19 Wednesday, June 19, 2019**
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(NESW) Sp(10,200) GapX(>0) Span(0 - 100)

Speed (km/h)	Class												Speed Totals	
	SV 1	SVT 2	TB2 3	TB3 4	T4 5	ART3 6	ART4 7	ART5 8	ART6 9	BD 10	DRT 11	TRT 12		
10 - 20	21	.	1	1	1	.	.	.	1	.	.	.	25	0.2%
20 - 30	92	.	6	3	6	.	.	.	6	1	.	.	114	1.1%
30 - 40	81	2	10	14	4	.	.	1	7	.	.	.	119	1.1%
40 - 50	405	18	45	7	3	.	7	1	11	3	.	.	500	4.8%
50 - 60	2120	88	223	25	4	3	14	3	19	7	3	.	2509	24.2%
60 - 70	4780	130	349	26	17	7	14	5	9	4	5	.	5346	51.7%
70 - 80	1470	24	80	3	3	3	4	.	.	.	.	.	1587	15.3%
80 - 90	118	1	8	.	.	.	1	.	.	.	.	.	128	1.2%
90 - 100	12	.	3	.	.	.	.	.	.	.	.	.	15	0.1%
100 - 110	3	.	1	.	.	.	.	.	.	.	.	.	4	0.0%
110 - 120	1	.	.	.	.	.	.	.	.	.	.	.	1	0.0%
120 - 130	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
130 - 140	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
140 - 150	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
150 - 160	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
Class Totals	9103	263	726	79	38	13	40	10	53	15	8	0	10348	
	88.0%	2.5%	7.0%	0.8%	0.4%	0.1%	0.4%	0.1%	0.5%	0.1%	0.1%	0.0%		

MetroCount Traffic Executive

Speed Histogram

SpeedHist-270 -- English (ENU)

Datasets:

Site:	**[PICKERING BR RD 1] 100m North West of CARINYAH Road <70>**
Attribute:	PICKERING BROOK
Direction:	6 - West bound A>B, East bound B>A. **Lane:** 0
Survey Duration:	11:53 Wednesday, June 12, 2019 => 8:19 Wednesday, June 19, 2019,
Zone:	
File:	PICKERING BR RD 1 0 2019-06-19 0820.EC0 (Plus)
Identifier:	AC73KEVC MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**11:54 Wednesday, June 12, 2019 => 8:19 Wednesday, June 19, 2019 (6.851)**
Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range:	10 - 200 km/h.
Direction:	North, East, South, West (bound), P = East
Separation:	GapX > 0 sec, Span 0 - 100 metre
Name:	70kmh_roads
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 10348 / 10366 (99.83%)

Speed Statistics

Direction: EW
Vehicles = 10348
Posted speed limit = 70 km/h, Exceeding = 1735 (16.77%), Mean Exceeding = 74.28 km/h
Maximum = 115.9 km/h, **Minimum** = 12.7 km/h, **Mean** = 62.6 km/h
85% Speed = 70.2 km/h, **95% Speed** = 75.2 km/h, **Median** = 63.4 km/h
20 km/h Pace = 54 - 74, **Number in Pace** = 8362 (80.81%)
Variance = 86.34, **Standard Deviation** = 9.29 km/h

MetroCount Traffic Executive

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-268 -- English (ENU)

Datasets:

Site:	**[PICKERING BR RD 1] 100m North West of CARINYAH Road <70>**
Attribute:	PICKERING BROOK
Direction:	6 - West bound A>B, East bound B>A. **Lane:** 0
Survey Duration:	11:53 Wednesday, June 12, 2019 => 8:19 Wednesday, June 19, 2019,
Zone:	
File:	PICKERING BR RD 1 0 2019-06-19 0820.EC0 (Plus)
Identifier:	AC73KEVC MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**11:54 Wednesday, June 12, 2019 => 8:19 Wednesday, June 19, 2019 (6.851)**
Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range:	10 - 200 km/h.
Direction:	North, East, South, West (bound), P = East
Separation:	GapX > 0 sec, Span 0 - 100 metre
Name:	70kmh_roads
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 10348 / 10366 (99.83%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-268
Site: PICKERING BR RD 1.0.1WE
Description: **100m North West of CARINYAH Road <70>**
Filter time: **11:54 Wednesday, June 12, 2019 => 8:19 Wednesday, June 19, 2019**
Scheme: Vehicle classification (AustRoads94)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(NESW) Sp(10,200) GapX(>0) Span(0 - 100)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	1.0	2.0	6.0	4.0	2.0	2.0	4.0	3.0	3.0
0100-0200	1.0	1.0	0.0	2.0	1.0	1.0	2.0	1.0	1.1
0200-0300	4.0	1.0	1.0	3.0	1.0	2.0	4.0	2.0	2.3
0300-0400	0.0	4.0	3.0	3.0	2.0	4.0	2.0	2.4	2.6
0400-0500	8.0	3.0	5.0	5.0	5.0	2.0	0.0	5.2	4.0
0500-0600	25.0	26.0	27.0	27.0	28.0	11.0	7.0	26.6	21.6
0600-0700	54.0	52.0	45.0	49.0	52.0	29.0	19.0	50.4	42.9
0700-0800	89.0	97.0	90.0	88.0	87.0	62.0	46.0	90.2	79.9
0800-0900	**170.0**	**177.0**	15.0	**199.0**	**209.0**	90.0	55.0	**154.0**	**130.7**
0900-1000	99.0	102.0	*	96.0	102.0	119.0	99.0	99.8	102.8
1000-1100	72.0	100.0	*	74.0	86.0	146.0	144.0	83.0	103.7
1100-1200	91.0	86.0	0.0	98.0	111.0	**164.0**	**172.0**	77.2	103.1
1200-1300	75.0	96.0	80.0	105.0	136.0	156.0	217.0	98.4	123.6
1300-1400	111.0	79.0	91.0	119.0	97.0	**164.0**	**222.0**	99.4	126.1
1400-1500	105.0	124.0	141.0	150.0	131.0	132.0	173.0	130.2	136.6
1500-1600	**167.0**	**176.0**	**195.0**	**166.0**	**189.0**	147.0	170.0	**178.6**	**172.9**
1600-1700	90.0	98.0	117.0	139.0	138.0	113.0	116.0	116.4	115.9
1700-1800	88.0	105.0	95.0	102.0	90.0	98.0	94.0	96.0	96.0
1800-1900	54.0	51.0	56.0	66.0	54.0	62.0	40.0	56.2	54.7
1900-2000	21.0	40.0	28.0	37.0	36.0	22.0	20.0	32.4	29.1
2000-2100	16.0	16.0	23.0	26.0	21.0	13.0	15.0	20.4	18.6
2100-2200	13.0	5.0	15.0	20.0	20.0	27.0	9.0	14.6	15.6
2200-2300	6.0	12.0	8.0	8.0	18.0	23.0	9.0	10.4	12.0
2300-2400	4.0	2.0	5.0	9.0	10.0	32.0	2.0	6.0	9.1
Totals									
0700-1900	1211.0	1291.0	*	1402.0	1430.0	1453.0	1548.0	1279.3	1345.9
0600-2200	1315.0	1404.0	*	1534.0	1559.0	1544.0	1611.0	1397.2	1452.1
0600-0000	1325.0	1418.0	*	1551.0	1587.0	1599.0	1622.0	1413.6	1473.2
0000-0000	1364.0	1455.0	*	1595.0	1626.0	1621.0	1641.0	1453.8	1507.8
AM Peak	0800	0800	*	0800	0800	1100	1100		
	170.0	177.0	*	199.0	209.0	164.0	172.0		
PM Peak	1500	1500	1500	1500	1500	1300	1300		
	167.0	176.0	195.0	166.0	189.0	164.0	222.0		

*** - No data.**

MetroCount Traffic Executive

Class Speed Matrix

ClassMatrix-758 -- English (ENA)

Datasets:

Site:	**[WELSHPOOL (0002) E] 400m East of TANNER RD <70> E.B**
Attribute:	CARMEL
Direction:	2 - East bound, A trigger first. **Lane:** 0
Survey Duration:	8:53 Thursday, 2 March 2017 => 9:13 Thursday, 16 March 2017,
Zone:	
File:	WELSHPOOL (0002) E 0 2017-03-16 0913.EC0 (Plus)
Identifier:	MK91SQS4 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**8:54 Thursday, 2 March 2017 => 9:13 Thursday, 16 March 2017 (14.0133)**
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), P = East
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 20061 / 20117 (99.72%)

Class Speed Matrix

ClassMatrix-758
Site: WELSHPOOL (0002) E.0.0E
Description: **400m East of TANNER RD <70> E.B**
Filter time: **8:54 Thursday, 2 March 2017 => 9:13 Thursday, 16 March 2017**
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) Span(0 - 100)

Speed (km/h)	Class												Speed Totals	
	SV 1	SVT 2	TB2 3	TB3 4	T4 5	ART3 6	ART4 7	ART5 8	ART6 9	BD 10	DRT 11	TRT 12		
10 - 20	284	.	3	5	19	.	.	.	3	.	2	.	316	1.6%
20 - 30	397	2	16	1	33	.	1	1	6	2	14	2	475	2.4%
30 - 40	87	3	19	3	3	.	2	1	4	.	35	2	159	0.8%
40 - 50	163	7	23	11	2	.	.	.	13	11	57	1	288	1.4%
50 - 60	677	29	99	24	3	3	5	5	40	33	56	.	974	4.9%
60 - 70	6285	158	546	51	16	18	32	8	112	28	37	.	7291	36.3%
70 - 80	7757	158	537	35	17	15	29	3	86	12	16	.	8665	43.2%
80 - 90	1426	29	121	5	1	3	4	1	14	3	3	.	1610	8.0%
90 - 100	195	1	14	.	.	.	.	.	2	.	.	.	212	1.1%
100 - 110	41	.	1	.	.	.	.	.	.	.	.	.	42	0.2%
110 - 120	21	.	1	.	.	.	.	.	.	.	.	.	22	0.1%
120 - 130	6	.	.	.	.	.	.	.	.	.	.	.	6	0.0%
130 - 140	1	.	.	.	.	.	.	.	.	.	.	.	1	0.0%
140 - 150	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
150 - 160	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
Class Totals	**17340**	**387**	**1380**	**135**	**94**	**39**	**73**	**19**	**280**	**89**	**220**	**5**	**20061**	
	86.4%	**1.9%**	**6.9%**	**0.7%**	**0.5%**	**0.2%**	**0.4%**	**0.1%**	**1.4%**	**0.4%**	**1.1%**	**0.0%**		

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MetroCount Traffic Executive

Speed Histogram

SpeedHist-759 -- English (ENA)

Datasets:

Site:	**[WELSHPOOL (0002) E] 400m East of TANNER RD <70> E.B**
Attribute:	CARMEL
Direction:	2 - East bound, A trigger first. **Lane:** 0
Survey Duration:	8:53 Thursday, 2 March 2017 => 9:13 Thursday, 16 March 2017,
Zone:	
File:	WELSHPOOL (0002) E 0 2017-03-16 0913.EC0 (Plus)
Identifier:	MK91SQS4 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**8:54 Thursday, 2 March 2017 => 9:13 Thursday, 16 March 2017 (14.0133)**
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), P = East
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 20061 / 20117 (99.72%)

Speed Statistics

Direction: EW
Vehicles = 20061
Posted speed limit = 60 km/h, Exceeding = 17849 (88.97%), Mean Exceeding = 72.08 km/h
Maximum = 136.2 km/h, **Minimum** = 10.0 km/h, **Mean** = 68.6 km/h
85% Speed = 77.4 km/h, **95% Speed** = 83.2 km/h, **Median** = 70.2 km/h
20 km/h Pace = 61 - 81, **Number in Pace** = 16112 (80.32%)
Variance = 164.90, **Standard Deviation** = 12.84 km/h

MetroCount Traffic Executive

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-757 -- English (ENA)

Datasets:

Site:	**[WELSHPOOL (0002) E] 400m East of TANNER RD <70> E.B**
Attribute:	CARMEL
Direction:	2 - East bound, A trigger first. **Lane:** 0
Survey Duration:	8:53 Thursday, 2 March 2017 => 9:13 Thursday, 16 March 2017,
Zone:	
File:	WELSHPOOL (0002) E 0 2017-03-16 0913.EC0 (Plus)
Identifier:	MK91SQS4 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**8:54 Thursday, 2 March 2017 => 9:13 Thursday, 16 March 2017 (14.0133)**
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), P = East
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 20061 / 20117 (99.72%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-757
Site: WELSHPOOL (0002) E.0.0E
Description: **400m East of TANNER RD <70> E.B**
Filter time: **8:54 Thursday, 2 March 2017 => 9:13 Thursday, 16 March 2017**
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) Span(0 - 100)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	4.0	4.0	4.5	2.0	3.5	9.0	14.0	3.6	5.9
0100-0200	4.0	1.5	2.5	3.5	2.0	6.0	8.5	2.7	4.0
0200-0300	4.0	3.0	2.0	2.5	3.0	3.0	5.0	2.9	3.2
0300-0400	1.5	4.0	2.0	4.0	3.0	3.5	4.0	2.9	3.1
0400-0500	5.0	6.0	6.0	7.0	8.0	6.0	3.5	6.4	5.9
0500-0600	14.5	19.5	18.0	23.0	20.5	12.5	4.0	19.1	16.0
0600-0700	49.5	53.0	56.0	53.0	53.0	77.5	33.0	52.9	53.6
0700-0800	74.5	55.5	71.5	62.0	64.5	140.0	85.0	65.6	79.0
0800-0900	87.5	**109.5**	**108.5**	41.0	**107.0**	87.0	120.5	86.2	90.9
0900-1000	91.0	81.0	83.5	57.0	93.0	120.5	126.5	78.9	90.8
1000-1100	85.5	63.0	86.0	80.0	97.5	142.5	127.5	82.4	97.4
1100-1200	**94.5**	84.5	89.0	**98.0**	103.0	**148.5**	**135.5**	**93.8**	**107.6**
1200-1300	75.5	72.5	82.5	78.0	105.0	**153.0**	**154.5**	82.7	103.0
1300-1400	70.5	80.0	67.5	69.5	77.5	122.5	131.5	73.0	88.4
1400-1500	84.0	84.5	88.5	91.0	96.5	117.5	117.5	88.9	97.1
1500-1600	99.0	**149.5**	**144.0**	**160.5**	**166.0**	129.5	96.5	**143.8**	**135.0**
1600-1700	**106.5**	140.0	129.5	152.5	157.5	80.5	82.5	137.2	121.3
1700-1800	91.0	133.0	142.0	126.5	158.5	66.5	56.5	130.2	110.6
1800-1900	64.0	74.0	95.5	86.0	98.5	67.5	44.5	83.6	75.7
1900-2000	43.0	39.5	54.0	42.5	50.5	37.0	30.0	45.9	42.4
2000-2100	28.5	34.5	35.5	40.5	25.5	28.5	21.0	32.9	30.6
2100-2200	17.5	27.0	26.0	34.0	29.0	24.5	24.5	26.7	26.1
2200-2300	17.0	16.0	15.5	18.0	25.5	31.5	18.0	18.4	20.2
2300-2400	8.0	6.5	7.5	11.0	18.0	25.0	10.0	10.2	12.3
Totals									
0700-1900	1023.5	1127.0	1188.0	1102.0	1324.5	1375.5	1278.5	1146.3	1196.7
0600-2200	1162.0	1281.0	1359.5	1272.0	1482.5	1543.0	1387.0	1304.7	1349.3
0600-0000	1187.0	1303.5	1382.5	1301.0	1526.0	1599.5	1415.0	1333.3	1381.8
0000-0000	1220.0	1341.5	1417.5	1343.0	1566.0	1639.5	1454.0	1370.9	1420.0
AM Peak	1100	0800	0800	1100	0800	1100	1100		
	94.5	109.5	108.5	98.0	107.0	148.5	135.5		
PM Peak	1600	1500	1500	1500	1500	1200	1200		
	106.5	149.5	144.0	160.5	166.0	153.0	154.5		

*** - No data.**

MetroCount Traffic Executive

Class Speed Matrix

ClassMatrix-797 -- English (ENA)

Datasets:

Site:	**[WELSHPOOL (0002)] 400m East of TANNER RD**
Attribute:	CARMEL
Direction:	4 - West bound, A trigger first. **Lane:** 0
Survey Duration:	14:31 Thursday, 16 March 2017 => 9:20 Thursday, 23 March 2017,
Zone:	
File:	WELSHPOOL (0002) 1 2017-03-23 0920.EC0 (Plus)
Identifier:	MJ39RD1C MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**14:31 Thursday, 16 March 2017 => 9:20 Thursday, 23 March 2017 (6.78403)**
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), P = West
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 8659 / 8665 (99.93%)

Class Speed Matrix

ClassMatrix-797
Site: WELSHPOOL (0002).0.0W
Description: **400m East of TANNER RD**
Filter time: **14:31 Thursday, 16 March 2017 => 9:20 Thursday, 23 March 2017**
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) Span(0 - 100)

Speed (km/h)	Class												Speed Totals	
	SV 1	SVT 2	TB2 3	TB3 4	T4 5	ART3 6	ART4 7	ART5 8	ART6 9	BD 10	DRT 11	TRT 12		
10 - 20	26	.	.	.	2	.	.	.	.	.	1	.	29	0.3%
20 - 30	47	1	.	.	2	.	.	1	1	.	29	.	81	0.9%
30 - 40	20	.	9	4	.	1	.	.	1	3	70	.	108	1.2%
40 - 50	29	6	26	7	.	.	.	2	25	18	21	.	134	1.5%
50 - 60	308	29	73	24	4	2	3	8	57	7	35	.	550	6.4%
60 - 70	2827	88	221	40	12	5	7	6	28	14	27	.	3275	37.8%
70 - 80	3364	71	136	17	3	5	9	2	15	1	3	.	3626	41.9%
80 - 90	712	14	20	2	.	.	1	.	.	.	.	.	749	8.6%
90 - 100	79	.	2	.	1	.	.	.	.	.	.	.	82	0.9%
100 - 110	18	.	1	.	.	.	.	.	.	.	.	.	19	0.2%
110 - 120	5	.	.	.	.	.	.	.	.	.	.	.	5	0.1%
120 - 130	1	.	.	.	.	.	.	.	.	.	.	.	1	0.0%
130 - 140	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
140 - 150	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
150 - 160	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
Class Totals	7436	209	488	94	24	13	20	19	127	43	186	0	8659	
	85.9%	2.4%	5.6%	1.1%	0.3%	0.2%	0.2%	0.2%	1.5%	0.5%	2.1%	0.0%		

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MetroCount Traffic Executive

Speed Histogram

SpeedHist-800 -- English (ENA)

Datasets:

Site:	**[WELSHPOOL (0002)] 400m East of TANNER RD**
Attribute:	CARMEL
Direction:	4 - West bound, A trigger first. **Lane:** 0
Survey Duration:	14:31 Thursday, 16 March 2017 => 9:20 Thursday, 23 March 2017,
Zone:	
File:	WELSHPOOL (0002) 1 2017-03-23 0920.EC0 (Plus)
Identifier:	MJ39RD1C MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**14:31 Thursday, 16 March 2017 => 9:20 Thursday, 23 March 2017 (6.78403)**
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), P = West
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 8659 / 8665 (99.93%)

Speed Statistics

Direction: EW
Vehicles = 8659
Posted speed limit = 60 km/h, Exceeding = 7757 (89.58%), Mean Exceeding = 72.01 km/h
Maximum = 122.3 km/h, **Minimum** = 14.5 km/h, **Mean** = 69.5 km/h
85% Speed = 77.8 km/h, **95% Speed** = 83.2 km/h, **Median** = 70.2 km/h
20 km/h Pace = 61 - 81, **Number in Pace** = 6963 (80.41%)
Variance = 108.28, **Standard Deviation** = 10.41 km/h

MetroCount Traffic Executive

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-796 -- English (ENA)

Datasets:

Site:	**[WELSHPOOL (0002)] 400m East of TANNER RD**
Attribute:	CARMEL
Direction:	4 - West bound, A trigger first. **Lane:** 0
Survey Duration:	14:31 Thursday, 16 March 2017 => 9:20 Thursday, 23 March 2017,
Zone:	
File:	WELSHPOOL (0002) 1 2017-03-23 0920.EC0 (Plus)
Identifier:	MJ39RD1C MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**14:31 Thursday, 16 March 2017 => 9:20 Thursday, 23 March 2017 (6.78403)**
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), P = West
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 8659 / 8665 (99.93%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-796
Site: WELSHPOOL (0002).0.0W
Description: **400m East of TANNER RD**
Filter time: **14:31 Thursday, 16 March 2017 => 9:20 Thursday, 23 March 2017**
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) Span(0 - 100)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	2.0	2.0	3.0	0.0	3.0	8.0	5.0	2.0	3.3
0100-0200	0.0	3.0	1.0	0.0	1.0	0.0	5.0	1.0	1.4
0200-0300	0.0	1.0	1.0	0.0	0.0	0.0	2.0	0.4	0.6
0300-0400	2.0	1.0	2.0	2.0	2.0	1.0	1.0	1.8	1.6
0400-0500	13.0	10.0	9.0	15.0	10.0	3.0	1.0	11.4	8.7
0500-0600	28.0	41.0	29.0	35.0	36.0	2.0	2.0	33.8	24.7
0600-0700	89.0	70.0	82.0	72.0	78.0	27.0	18.0	78.2	62.3
0700-0800	133.0	127.0	130.0	130.0	116.0	44.0	33.0	127.2	101.9
0800-0900	**166.0**	**163.0**	**176.0**	0.0	**174.0**	66.0	35.0	**135.8**	**111.4**
0900-1000	66.0	87.0	86.0	0.0	97.0	77.0	48.0	67.2	65.9
1000-1100	63.0	64.0	89.0	*	92.0	**102.0**	105.0	77.0	85.8
1100-1200	65.0	65.0	63.0	*	83.0	83.0	**114.0**	69.0	78.8
1200-1300	54.0	66.0	50.0	*	100.0	124.0	152.0	67.5	91.0
1300-1400	67.0	70.0	66.0	*	76.0	114.0	128.0	69.8	86.8
1400-1500	82.0	90.0	92.0	34.0	109.0	108.0	155.0	81.4	95.7
1500-1600	**106.0**	**96.0**	**123.0**	112.0	**133.0**	**131.0**	**187.0**	**114.0**	**126.9**
1600-1700	77.0	81.0	90.0	102.0	112.0	99.0	186.0	92.4	106.7
1700-1800	52.0	53.0	88.0	83.0	85.0	73.0	146.0	72.2	82.9
1800-1900	50.0	36.0	38.0	54.0	78.0	64.0	57.0	51.2	53.9
1900-2000	19.0	23.0	25.0	23.0	49.0	39.0	25.0	27.8	29.0
2000-2100	13.0	23.0	12.0	25.0	31.0	25.0	18.0	20.8	21.0
2100-2200	12.0	9.0	18.0	16.0	43.0	31.0	28.0	19.6	22.4
2200-2300	9.0	4.0	13.0	14.0	23.0	25.0	6.0	12.6	13.4
2300-2400	5.0	5.0	5.0	9.0	12.0	29.0	4.0	7.2	9.9
Totals									
0700-1900	981.0	998.0	1091.0	*	1255.0	1085.0	1346.0	1024.7	1087.6
0600-2200	1114.0	1123.0	1228.0	*	1456.0	1207.0	1435.0	1171.1	1222.4
0600-0000	1128.0	1132.0	1246.0	*	1491.0	1261.0	1445.0	1190.8	1245.6
0000-0000	1173.0	1190.0	1291.0	*	1543.0	1275.0	1461.0	1241.2	1285.9
AM Peak	0800	0800	0800	*	0800	1000	1100		
	166.0	163.0	176.0	*	174.0	102.0	114.0		
PM Peak	1500	1500	1500	*	1500	1500	1500		
	106.0	96.0	123.0	*	133.0	131.0	187.0		

*** - No data.**

MetroCount Traffic Executive

Class Speed Matrix

ClassMatrix-764 -- English (ENA)

Datasets:

Site:	**[WELSHPOOL (0002) 2] 400m East of TANNER RD <70> W.B 2**
Attribute:	CARMEL
Direction:	4 - West bound, A trigger first. **Lane:** 0
Survey Duration:	9:00 Thursday, 2 March 2017 => 8:44 Thursday, 16 March 2017,
Zone:	
File:	WELSHPOOL (0002) 2 0 2017-03-16 0845.EC0 (Plus)
Identifier:	MJ39RD1C MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**9:01 Thursday, 2 March 2017 => 8:44 Thursday, 16 March 2017 (13.9888)**
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), P = West
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 20366 / 20394 (99.86%)

Class Speed Matrix

ClassMatrix-764
Site: WELSHPOOL (0002) 2.0.0W
Description: **400m East of TANNER RD <70> W.B 2**
Filter time: **9:01 Thursday, 2 March 2017 => 8:44 Thursday, 16 March 2017**
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) Span(0 - 100)

Speed (km/h)	Class												Speed Totals	
	SV 1	SVT 2	TB2 3	TB3 4	T4 5	ART3 6	ART4 7	ART5 8	ART6 9	BD 10	DRT 11	TRT 12		
10 - 20	51	.	.	.	1	.	.	.	.	.	.	.	52	0.3%
20 - 30	153	.	5	2	5	.	.	.	2	6	53	.	226	1.1%
30 - 40	144	.	14	13	1	.	.	.	22	15	135	.	344	1.7%
40 - 50	92	12	51	23	4	3	5	7	88	18	25	.	328	1.6%
50 - 60	765	60	181	41	9	10	11	6	119	23	26	.	1251	6.1%
60 - 70	6647	183	474	50	10	13	20	9	53	33	45	1	7538	37.0%
70 - 80	7789	161	277	20	11	5	12	3	18	2	4	.	8302	40.8%
80 - 90	1838	31	60	.	3	2	2	.	1	.	.	.	1937	9.5%
90 - 100	279	4	9	1	.	.	1	.	.	.	.	.	294	1.4%
100 - 110	50	.	4	.	.	.	.	.	.	.	.	.	54	0.3%
110 - 120	20	.	.	.	.	.	.	.	.	.	.	.	20	0.1%
120 - 130	11	.	.	.	.	.	.	.	.	.	.	.	11	0.1%
130 - 140	3	.	.	.	.	.	.	.	.	.	.	.	3	0.0%
140 - 150	2	.	.	.	.	.	.	.	.	.	.	.	2	0.0%
150 - 160	4	.	.	.	.	.	.	.	.	.	.	.	4	0.0%
Class Totals	17848	451	1075	150	44	33	51	25	303	97	288	1	20366	
	87.6%	2.2%	5.3%	0.7%	0.2%	0.2%	0.3%	0.1%	1.5%	0.5%	1.4%	0.0%		

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MetroCount Traffic Executive

Speed Histogram

SpeedHist-765 -- English (ENA)

Datasets:

Site:	**[WELSHPOOL (0002) 2] 400m East of TANNER RD <70> W.B 2**
Attribute:	CARMEL
Direction:	4 - West bound, A trigger first. **Lane:** 0
Survey Duration:	9:00 Thursday, 2 March 2017 => 8:44 Thursday, 16 March 2017,
Zone:	
File:	WELSHPOOL (0002) 2 0 2017-03-16 0845.EC0 (Plus)
Identifier:	MJ39RD1C MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**9:01 Thursday, 2 March 2017 => 8:44 Thursday, 16 March 2017 (13.9888)**
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), P = West
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 20366 / 20394 (99.86%)

Speed Statistics

Direction: EW
Vehicles = 20366
Posted speed limit = 60 km/h, Exceeding = 18165 (89.19%), Mean Exceeding = 72.38 km/h
Maximum = 158.0 km/h, **Minimum** = 10.9 km/h, **Mean** = 69.7 km/h
85% Speed = 78.5 km/h, **95% Speed** = 84.2 km/h, **Median** = 70.2 km/h
20 km/h Pace = 61 - 81, **Number in Pace** = 15980 (78.46%)
Variance = 125.63, **Standard Deviation** = 11.21 km/h

MetroCount Traffic Executive

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-763 -- English (ENA)

Datasets:

Site:	**[WELSHPOOL (0002) 2] 400m East of TANNER RD <70> W.B 2**
Attribute:	CARMEL
Direction:	4 - West bound, A trigger first. **Lane:** 0
Survey Duration:	9:00 Thursday, 2 March 2017 => 8:44 Thursday, 16 March 2017,
Zone:	
File:	WELSHPOOL (0002) 2 0 2017-03-16 0845.EC0 (Plus)
Identifier:	MJ39RD1C MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default axle (v4.06)
Data type:	Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time:	**9:01 Thursday, 2 March 2017 => 8:44 Thursday, 16 March 2017 (13.9888)**
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), P = West
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (AustRoads94)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 20366 / 20394 (99.86%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-763
Site: WELSHPOOL (0002) 2.0.0W
Description: **400m East of TANNER RD <70> W.B 2**
Filter time: **9:01 Thursday, 2 March 2017 => 8:44 Thursday, 16 March 2017**
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) Span(0 - 100)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	4.5	3.0	2.5	1.5	2.5	7.0	14.0	2.8	5.0
0100-0200	2.0	1.0	1.0	1.0	1.0	2.5	4.5	1.2	1.9
0200-0300	3.5	2.0	0.5	1.0	0.5	4.5	8.0	1.5	2.9
0300-0400	1.5	4.0	2.0	4.0	3.0	0.5	2.0	2.9	2.4
0400-0500	8.0	8.5	12.5	12.0	8.5	7.0	3.5	9.9	8.6
0500-0600	20.5	41.5	48.0	41.5	43.5	12.0	5.0	39.0	30.3
0600-0700	47.0	83.5	93.0	87.0	80.5	30.0	18.0	78.2	62.7
0700-0800	116.0	161.0	163.0	150.5	155.0	71.0	31.0	149.1	121.1
0800-0900	**129.5**	**206.5**	**214.0**	**152.0**	**178.0**	67.5	44.0	**176.0**	**141.6**
0900-1000	88.0	102.0	92.0	75.5	107.0	88.5	80.5	92.9	90.5
1000-1100	74.0	80.0	84.5	82.0	86.5	103.0	106.5	81.4	88.1
1100-1200	92.5	74.0	90.5	94.0	82.5	**119.0**	**122.5**	86.7	96.4
1200-1300	77.0	64.0	80.5	76.0	96.0	128.0	131.0	78.7	93.2
1300-1400	82.5	74.5	102.0	93.5	101.0	117.0	**137.0**	90.7	101.1
1400-1500	102.5	88.5	98.5	107.0	122.5	117.0	121.5	103.8	108.2
1500-1600	**111.0**	108.0	**153.5**	**138.5**	**138.5**	**143.5**	135.5	**129.9**	**132.6**
1600-1700	105.0	**109.5**	107.0	124.0	94.5	102.5	115.0	108.0	108.2
1700-1800	71.0	78.0	82.0	78.5	78.0	109.0	83.0	77.5	82.8
1800-1900	61.0	52.5	54.5	63.5	76.5	79.5	64.0	61.6	64.5
1900-2000	27.0	40.0	39.0	38.5	46.5	42.5	29.5	38.2	37.6
2000-2100	19.0	22.0	26.5	20.5	37.5	29.5	31.5	25.1	26.6
2100-2200	15.5	13.0	20.5	14.5	40.5	34.0	16.0	20.8	22.0
2200-2300	4.0	6.5	7.0	10.5	24.5	31.5	8.0	10.5	13.1
2300-2400	8.5	8.0	8.5	9.5	21.0	30.0	7.5	11.1	13.3
Totals									
0700-1900	1110.0	1198.5	1322.0	1235.0	1316.0	1245.5	1171.5	1236.3	1228.4
0600-2200	1218.5	1357.0	1501.0	1395.5	1521.0	1381.5	1266.5	1398.6	1377.3
0600-0000	1231.0	1371.5	1516.5	1415.5	1566.5	1443.0	1282.0	1420.2	1403.7
0000-0000	1271.0	1431.5	1583.0	1476.5	1625.5	1476.5	1319.0	1477.5	1454.7
AM Peak	0800	0800	0800	0800	0800	1100	1100		
	129.5	206.5	214.0	152.0	178.0	119.0	122.5		
PM Peak	1500	1600	1500	1500	1500	1500	1300		
	111.0	109.5	153.5	138.5	138.5	143.5	137.0		

*** - No data.**

Detailed Crash History

Report Criteria

Road	SLK	CWY
1020003 - Canning Rd	4.70 to 15.62	All

Parameter	Value	Description
From Date	01/01/2015	
To Date	31/12/2019	
Crash Type	All	
Severity	All	

Road	Road Name	SLK	CWY	True Dist	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	10/03/2016	Thursday	1730	PDO Major	2016071890	Intersection	Dawn Or Dusk	Dry	60	Give Way Sign	Roundabout	Straight		Non Collision	On Cway	76:Loss Of Control: Left Turn - Intx	Colliding	Motor Cycle	S - CANNING RD	W - POMEROY RD	Out Of Control: Road Cond				
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	25/06/2017	Sunday	1420	PDO Minor	2017212020	Intersection	Daylight	Dry	60	Give Way Sign	Roundabout	Straight		Right Angle	On Cway	11:Intx: Thru - Thru	Colliding	Four Wheel Drive (Not Car Design)	W - POMEROY RD	E - POMEROY RD	Straight Ahead: Not Out Of Control				
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	25/06/2017	Sunday	1420	PDO Minor	2017212020	Intersection	Daylight	Dry	60	Give Way Sign	Roundabout	Straight		Right Angle	On Cway	11:Intx: Thru - Thru	Target	Car	S - CANNING RD	N - CANNING RD	Straight Ahead: Not Out Of Control				Side
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	27/03/2018	Tuesday	1530	PDO Major	2018091680	Intersection	Daylight	Dry	60	Give Way Sign	Roundabout	Straight		Right Angle	On Cway	11:Intx: Thru - Thru	Colliding	Station Wagon	S - CANNING RD	N - CANNING RD	Straight Ahead: Not Out Of Control				
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	27/03/2018	Tuesday	1530	PDO Major	2018091680	Intersection	Daylight	Dry	60	Give Way Sign	Roundabout	Straight		Right Angle	On Cway	11:Intx: Thru - Thru	Target	Car	E - POMEROY RD	W - POMEROY RD	Straight Ahead: Not Out Of Control				Side
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	06/08/2018	Monday	0900	PDO Major	2018181022	Intersection	Daylight		60	Give Way Sign	Roundabout			Right Angle	On Cway	11:Intx: Thru - Thru	Colliding	Station Wagon	E - POMEROY RD	W - POMEROY RD	Straight Ahead: Not Out Of Control				
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	06/08/2018	Monday	0900	PDO Major	2018181022	Intersection	Daylight		60	Give Way Sign	Roundabout			Right Angle	On Cway	11:Intx: Thru - Thru	Target	Station Wagon	N - CANNING RD	S - CANNING RD	Straight Ahead: Not Out Of Control				Side
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	06/01/2019	Sunday	0145	PDO Major	2019005500	Intersection	Dark - Street Lights On	Dry	60	Give Way Sign	Roundabout	Straight		Hit Object	On Left Verge After Leaving Cway	72:Off Path On Straight: Off Left Cway Obj	Colliding	Car	W - POMEROY RD	E - POMEROY RD	Out Of Control: Other	Fence	Tree	Fixed Object Other	
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	13/08/2019	Tuesday	0655	PDO Major	2019226512	Intersection	Daylight	Wet	60	Give Way Sign	Roundabout	Straight		Right Angle	On Cway	11:Intx: Thru - Thru	Colliding	Car	S - CANNING RD	N - CANNING RD	Straight Ahead: Not Out Of Control				
1020003	Canning Rd	4.70	S	4.70	POMEROY RD (045325)	13/08/2019	Tuesday	0655	PDO Major	2019226512	Intersection	Daylight	Wet	60	Give Way Sign	Roundabout	Straight		Right Angle	On Cway	11:Intx: Thru - Thru	Target	Station Wagon	E - POMEROY RD	W - POMEROY RD	Straight Ahead: Not Out Of Control				Side
1020003	Canning Rd	4.81	S	4.81		30/01/2016	Saturday	1340	PDO Major	2016030704	Midblock	Daylight	Wet	70	No Sign Or Control		Straight		Hit Object	On Left Verge After Leaving Cway	72:Off Path On Straight: Off Left Cway Obj	Colliding	Car	S	N	Out Of Control: Road Cond	Fixed Object Other			
1020003	Canning Rd	4.84	S	4.84		21/03/2018	Wednesday	1830	PDO Major	2018081460	Midblock	Daylight	Dry	70	No Sign Or Control		Straight		Hit Object	On Left Verge After Leaving Cway	72:Off Path On Straight: Off Left Cway Obj	Colliding	Car	S	N	Swerving: To Avoid Veh	Kerb When Stated As Cause	Tree		
1020003	Canning Rd	4.86	S	4.86		09/03/2016	Wednesday	1802	PDO Major	2016066043	Midblock	Dawn Or Dusk		70	No Sign Or Control				Hit Object	On Left Verge After Leaving Cway	72:Off Path On Straight: Off Left Cway Obj	Colliding	Car	S	N	Out Of Control: Other	Fixed Object Other	Tree		

Detailed Crash History

Road	Road Name	SLK	CWY	True Dist	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
10200 03	Canning Rd	4.93	S	4.93		15/01/ 2018	Monday	1330	PDO Minor	20180 16441	Midblock	Daylight	Wet	70	No Sign Or Control		Curve		Hit Object	On Cway	82:Off Path On Curve: Off Right Bend In Obj	Colliding	Motor Cycle	S	N	Out Of Control: Other				
10200 03	Canning Rd	5.08	S	5.08		24/04/ 2019	Wednesd ay	1020	Medical	20191 12014	Midblock	Daylight	Dry	70	Stop Sign		Curve		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding		S	N	Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	5.08	S	5.08		24/04/ 2019	Wednesd ay	1020	Medical	20191 12014	Midblock	Daylight	Dry	70	Stop Sign		Curve		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	S	N	Stopped: To Avoid Veh				Rear
10200 03	Canning Rd	5.62	S	5.62		20/01/ 2017	Friday	0415	PDO Major	20170 13242	Midblock	Dawn Or Dusk	Dry	70	No Sign Or Control		Curve		Hit Object	On Left Verge After Leaving Cway	84:Off Path On Curve: Off Left Bend In Obj	Colliding	Multi - Seated Van	S	N	Swerving: To Avoid Animal	Tree			
10200 03	Canning Rd	5.94	S	5.94	CARMEL RD (045327)	14/12/ 2015	Monday	0645	PDO Minor	20153 57986	Intersection	Daylight	Dry	70	Stop Sign	3-way Intx (T-junction)	Straight		Non Collision	On Cway	75:Off Path On Straight: Lost Control On Cway	Colliding	Motor Cycle	S - CANNING RD	N - CANNING RD	Swerving: To Avoid Animal				
10200 03	Canning Rd	5.94	S	5.94	CARMEL RD (045327)	28/09/ 2019	Saturday	1325	PDO Major	20192 68921	Intersection	Daylight	Dry	70	Stop Sign	3-way Intx (T-junction)	Straight		Right Angle	On Cway	14:Intx: Thru - Right	Colliding	Four Wheel Drive (Not Car Design)	N - CANNING RD	S - CANNING RD	Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	5.94	S	5.94	CARMEL RD (045327)	28/09/ 2019	Saturday	1325	PDO Major	20192 68921	Intersection	Daylight	Dry	70	Stop Sign	3-way Intx (T-junction)	Straight		Right Angle	On Cway	14:Intx: Thru - Right	Target	Station Wagon	E - CARMEL RD	N - CANNING RD	Turning: To Make Right Turn				Side
10200 03	Canning Rd	6.04	S	6.04		03/02/ 2019	Sunday	1810	Medical	20190 03072	Midblock	Daylight		80	No Sign Or Control				Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car			Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	6.04	S	6.04		03/02/ 2019	Sunday	1810	Medical	20190 03072	Midblock	Daylight		80	No Sign Or Control				Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Bicycle			Straight Ahead: Not Out Of Control				Side
10200 03	Canning Rd	6.21	S	6.21		26/10/ 2016	Wednesd ay	0900	PDO Major	20163 09050	Midblock	Daylight	Dry	80	No Sign Or Control		Straight		Head On	On Cway	21:Opposite Dirn: Head On	Colliding	Car	N	S	Out Of Control: Other				
10200 03	Canning Rd	6.21	S	6.21		26/10/ 2016	Wednesd ay	0900	PDO Major	20163 09050	Midblock	Daylight	Dry	80	No Sign Or Control		Straight		Head On	On Cway	21:Opposite Dirn: Head On	Target	Station Wagon	S	N	Straight Ahead: Not Out Of Control				Front
10200 03	Canning Rd	6.46	S	6.46	MASONMILL RD (045328)	28/12/ 2018	Friday	0825	Medical	20183 43621	Intersection	Daylight	Dry	80	No Sign Or Control	3-way Intx (T-junction)	Straight		Rear End	On Cway	33:Same Dirn: Same Lane Right Rear	Colliding	Car	N - CANNING RD	S - CANNING RD	Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	6.46	S	6.46	MASONMILL RD (045328)	28/12/ 2018	Friday	0825	Medical	20183 43621	Intersection	Daylight	Dry	80	No Sign Or Control	3-way Intx (T-junction)	Straight		Rear End	On Cway	33:Same Dirn: Same Lane Right Rear	Target	Car	N - CANNING RD	E - MASONMILL RD	Stopped: Prepared To Turn Right				Rear
10200 03	Canning Rd	6.88	S	6.88		03/01/ 2018	Wednesd ay	1300	PDO Minor	20180 07621	Midblock	Daylight	Dry	80	No Sign Or Control		Curve			On Cway	45:Manoeuv: Reversing In Traffic	Colliding		S	N	Reversing Or Rolling Back: Straight				
10200 03	Canning Rd	6.88	S	6.88		03/01/ 2018	Wednesd ay	1300	PDO Minor	20180 07621	Midblock	Daylight	Dry	80	No Sign Or Control		Curve			On Cway	45:Manoeuv: Reversing In Traffic	Target	Truck	N	S	Stopped: To Avoid Veh				Front
10200 03	Canning Rd	7.03	S	7.03		26/07/ 2015	Sunday	2320	PDO Major	20151 93906	Midblock	Dark - Street Lights Not Provided	Dry	80	No Sign Or Control		Curve		Hit Object	On Left Verge After Leaving Cway	82:Off Path On Curve: Off Right Bend In Obj	Colliding	Station Wagon	S	N	Swerving: To Avoid Animal	Tree			
10200 03	Canning Rd	7.73	S	7.73		21/01/ 2016	Thursday	0530	PDO Major	20160 31813	Midblock	Dawn Or Dusk	Dry	80	No Sign Or Control		Curve		Hit Object	On Left Verge After Leaving Cway	82:Off Path On Curve: Off Right Bend In Obj	Colliding	Car	S	N	Swerving: To Avoid Animal	Tree	Tree		
10200 03	Canning Rd	8.24	S	8.24		09/10/ 2016	Sunday	1425	PDO Minor	20162 87862	Midblock	Daylight	Dry	80	No Sign Or Control		Curve		Head On	On Cway	21:Opposite Dirn: Head On	Colliding	Car			Out Of Control: Other				

Detailed Crash History

Road	Road Name	SLK	CWY	True Dist	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
10200 03	Canning Rd	8.24	S	8.24		09/10/ 2016	Sunday	1425	PDO Minor	20162 87862	Midblock	Daylight	Dry	80	No Sign Or Control		Curve		Head On	On Cway	21:Opposite Dirn: Head On	Target	Car			Straight Ahead: Not Out Of Control				Side
10200 03	Canning Rd	8.31	S	8.31		22/09/ 2016	Thursday	0815	Medical	20162 72801	Midblock	Daylight	Dry	80	No Sign Or Control		Curve		Head On	On Cway	21:Opposite Dirn: Head On	Colliding	Car	S	N	Out Of Control: Other				
10200 03	Canning Rd	8.31	S	8.31		22/09/ 2016	Thursday	0815	Medical	20162 72801	Midblock	Daylight	Dry	80	No Sign Or Control		Curve		Head On	On Cway	21:Opposite Dirn: Head On	Target	Station Wagon	N	S	Straight Ahead: Not Out Of Control				Side
10200 03	Canning Rd	8.86	S	8.86		12/01/ 2019	Saturday	1509	Hospital	20190 18321	Midblock	Daylight	Dry	80	No Sign Or Control	Driveway	Curve	Yes	Right Angle	On Cway	47:Manoeuv: Leaving Driveway	Colliding	Motor Cycle	S	N	Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	8.86	S	8.86		12/01/ 2019	Saturday	1509	Hospital	20190 18321	Midblock	Daylight	Dry	80	No Sign Or Control	Driveway	Curve	Yes	Right Angle	On Cway	47:Manoeuv: Leaving Driveway	Target	Car	W	S	Turning: To Make Right Turn				Side
10200 03	Canning Rd	9.29	S	9.29		24/04/ 2019	Wednesd ay	1335	PDO Major	20191 15610	Midblock	Daylight	Dry	70	No Sign Or Control		Curve		Hit Object	On Left Verge After Leaving Cway	72:Off Path On Straight: Off Left Cway Obj	Colliding	Car	S	N	Swerving: To Avoid Veh	Shrub	Shrub		
10200 03	Canning Rd	9.31	S	9.31		23/09/ 2019	Monday	1330	Hospital	20192 68582	Midblock	Daylight	Dry	70	No Sign Or Control	3-way Intx (T-junction)	Curve		Non Collision	On Cway	77:Loss Of Control: Right Turn - Intx	Colliding	Prime Mover & 1 Trailer	S	E	Out Of Control: Other				
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	11/01/ 2015	Sunday	1330	PDO Major	20150 08535	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Curve		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Colliding	Car	S - CANNING RD	N - CANNING RD	Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	11/01/ 2015	Sunday	1330	PDO Major	20150 08535	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Curve		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Target	Four Wheel Drive (Not Car Design)	S - CANNING RD	N - CANNING RD	Stopped: By Traffic Control				Rear
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	03/02/ 2015	Tuesday	1600	PDO Major	20150 27564	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Straight		Right Angle	On Cway	15:Intx: Right - Right	Colliding	Truck	N - CANNING RD	S - CANNING RD	Cutting Cnr: Right Turn At Intx				
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	03/02/ 2015	Tuesday	1600	PDO Major	20150 27564	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Straight		Right Angle	On Cway	15:Intx: Right - Right	Target	Station Wagon	S - CANNING RD	E - PICKERING BROOK RD	Stopped: By Traffic Control				Front
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	05/04/ 2016	Tuesday	0815	PDO Major	20161 22511	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Straight		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Colliding	Car	S - CANNING RD	N - CANNING RD	Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	05/04/ 2016	Tuesday	0815	PDO Major	20161 22511	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Straight		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Target	Car	S - CANNING RD	N - CANNING RD	Stopped: By Traffic Control				Rear
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	14/05/ 2016	Saturday	2314	PDO Major	20160 98125	Intersection			70	No Sign Or Control	3-way Intx (T-junction)			Hit Object	On Right Verge After Leaving Cway	76:Loss Of Control: Left Turn - Intx	Colliding	Car	E - PICKERING BROOK RD	S - CANNING RD	Out Of Control: Other	Kerb When Stated As Cause	Embankment	Shrub	
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	30/08/ 2017	Wednesd ay	0830	Medical	20172 70772	Intersection	Daylight	Dry	70	No Sign Or Control	3-way Intx (T-junction)	Straight		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Colliding	Four Wheel Drive (Not Car Design)	S - CANNING RD	N - CANNING RD	Straight Ahead: Not Out Of Control				

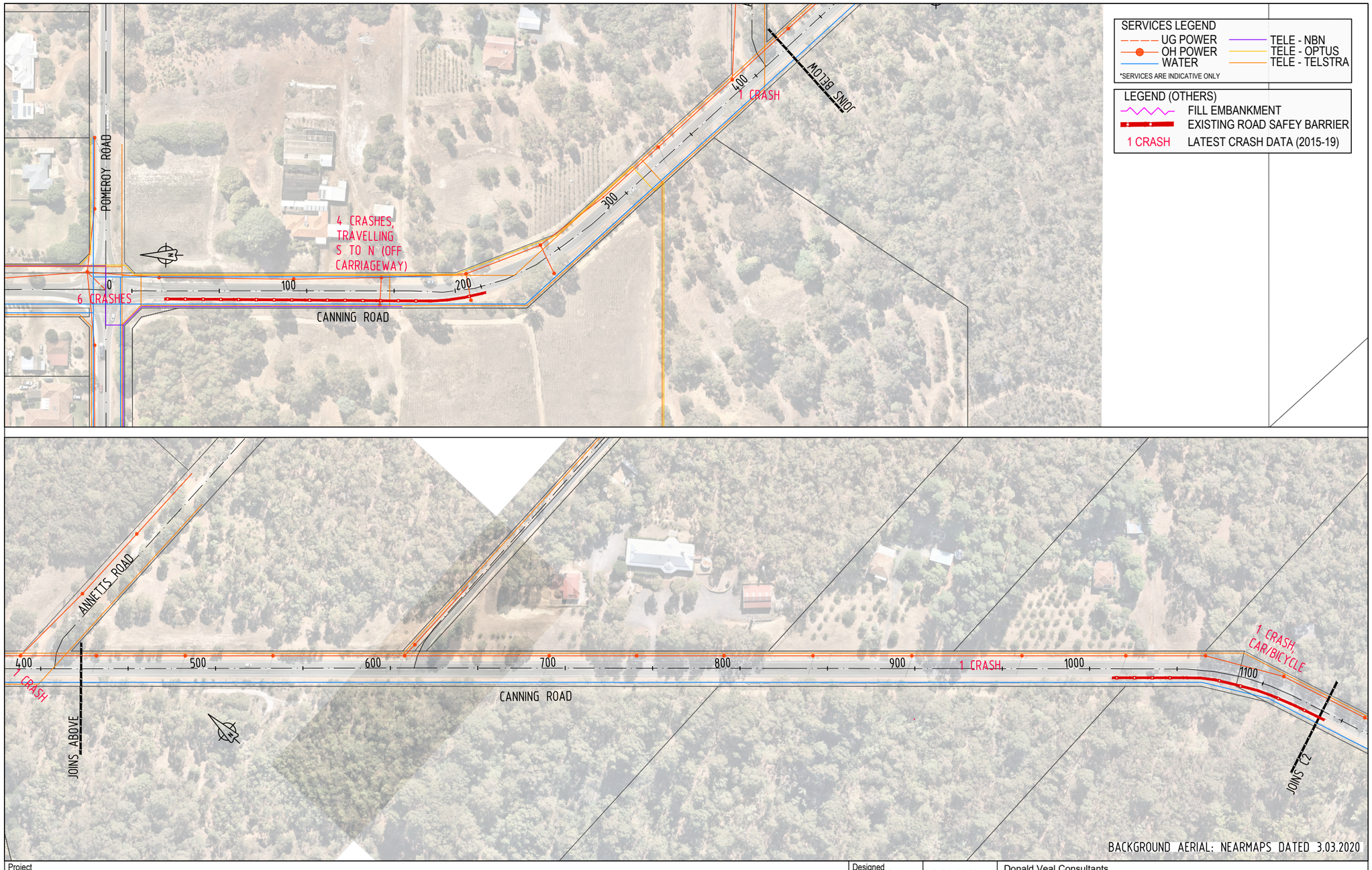
Detailed Crash History

Road	Road Name	SLK	CWY	True Dist	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	30/08/ 2017	Wednesd ay	0830	Medical	20172 70772	Intersection	Daylight	Dry	70	No Sign Or Control	3-way Intx (T-junction)	Straight		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Target	Station Wagon	S - CANNIN G RD	N - CANNIN G RD	Stopped: By Traffic Control				Rear
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	28/09/ 2017	Thursday	1400	PDO Major	20172 92575	Intersection	Daylight	Wet	70	Give Way Sign	3-way Intx (T-junction)	Curve		Right Angle	On Cway	14:Intx: Thru - Right	Colliding	Truck	E - PICKERIN G BROOK RD	N - CANNIN G RD	Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	28/09/ 2017	Thursday	1400	PDO Major	20172 92575	Intersection	Daylight	Wet	70	Give Way Sign	3-way Intx (T-junction)	Curve		Right Angle	On Cway	14:Intx: Thru - Right	Target	Utility	S - CANNIN G RD	E - PICKERIN G BROOK RD	Turning: To Make Right Turn				Front
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	03/03/ 2019	Sunday	1030	PDO Minor	20190 60214	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Curve		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Colliding	Car			Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	03/03/ 2019	Sunday	1030	PDO Minor	20190 60214	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Curve		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Target				Stopped: By Traffic Control				Rear
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	04/08/ 2019	Sunday	1430	PDO Major	20192 16885	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Straight		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Colliding	Car	S - CANNIN G RD	N - CANNIN G RD	Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	04/08/ 2019	Sunday	1430	PDO Major	20192 16885	Intersection	Daylight	Dry	70	Give Way Sign	3-way Intx (T-junction)	Straight		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Target	Car	S - CANNIN G RD	N - CANNIN G RD	Stopped: By Traffic Control				Rear
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	17/09/ 2019	Tuesday	1735	PDO Major	20192 62396	Intersection	Daylight	Dry	70	Stop Sign	3-way Intx (T-junction)	Curve		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Colliding	Station Wagon	S - CANNIN G RD	N - CANNIN G RD	Straight Ahead: Not Out Of Control				
10200 03	Canning Rd	9.91	S	9.91	PICKERING BROOK RD (045331)	17/09/ 2019	Tuesday	1735	PDO Major	20192 62396	Intersection	Daylight	Dry	70	Stop Sign	3-way Intx (T-junction)	Curve		Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Target	Four Wheel Drive (Not Car Design)	S - CANNIN G RD	N - CANNIN G RD	Stopped: By Traffic Control				Rear
10200 03	Canning Rd	10.02	S	10.02		27/10/ 2018	Saturday	1035	Fatal	20182 50005	Midblock		Dry	70	No Sign Or Control		Curve	Yes	Hit Object	On Left Verge After Leaving Cway	82:Off Path On Curve: Off Right Bend In Obj	Colliding	Motor Cycle	S	N	Out Of Control: Other	Emban kment	Tree		
10200 03	Canning Rd	11.70	S	11.70		19/05/ 2017	Friday	0930	Hospital	20171 53496	Midblock	Daylight	Wet	90	No Sign Or Control		Curve		Hit Object	On Left Verge After Leaving Cway	82:Off Path On Curve: Off Right Bend In Obj	Colliding	Panel Van	S	N	Out Of Control: Other	Tree			
10200 03	Canning Rd	13.16	S	13.16		24/10/ 2015	Saturday	2235	Medical	20152 82456	Midblock			90	No Sign Or Control				Non Collision	On Right Verge After Leaving Cway	73:Off Path On Straight: Off Right Cway	Colliding	Car	N	S	Out Of Control: Gravel Shoulder				
10200 03	Canning Rd	13.34	S	13.34		06/06/ 2016	Monday	1730	Medical	20161 78570	Midblock	Dark - Street Lights Not Provided	Wet	90	No Sign Or Control		Curve		Hit Object	On Left Verge After Leaving Cway	82:Off Path On Curve: Off Right Bend In Obj	Colliding	Car	S	N	Out Of Control: Other	Tree			
10200 03	Canning Rd	13.89	S	13.89		06/03/ 2017	Monday	0640	Hospital	20170 18223	Midblock	Daylight	Dry	90	No Sign Or Control		Straight		Hit Animal	On Cway	69:On Path: Hit Animal	Colliding	Motor Cycle	N	S	Straight Ahead: Not Out Of Control	Kangar oo			
10200 03	Canning Rd	14.16	S	14.16	CANNING MILLS RD (045332)	13/08/ 2015	Thursday	0738	Medical	20152 68611	Intersection	Daylight		90	No Sign Or Control	3-way Intx (T-junction)			Right Angle	On Cway	14:Intx: Thru - Right	Colliding	Truck	S - CANNIN G RD	N - CANNIN G RD	Straight Ahead: Not Out Of Control				

Detailed Crash History

Road	Road Name	SLK	CWY	True Dist	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
1020003	Canning Rd	14.16	S	14.16	CANNING MILLS RD (045332)	13/08/2015	Thursday	0738	Medical	2015268611	Intersection	Daylight		90	No Sign Or Control	3-way Intx (T-junction)			Right Angle	On Cway	14:Intx: Thru - Right	Target	Car	W - CANNING MILLS RD	S - CANNING RD	Turning: To Make Right Turn				Side
1020003	Canning Rd	14.16	S	14.16	CANNING MILLS RD (045332)	21/08/2016	Sunday	1100	Hospital	2016275026	Intersection	Daylight	Dry	90	No Sign Or Control	4-way Intx	Curve		Non Collision	On Cway	76:Loss Of Control: Left Turn - Intx	Colliding	Motor Cycle			Out Of Control: Other				
1020003	Canning Rd	14.35	S	14.35		10/04/2016	Sunday	1329	Hospital	2016101754	Midblock	Daylight	Dry	90	No Sign Or Control		Straight		Hit Object	On Left Verge After Leaving Cway	72:Off Path On Straight: Off Left Cway Obj	Colliding	Station Wagon	N	S	Out Of Control: Gravel Shoulder	Embankment			
1020003	Canning Rd	15.07	S	15.07		18/05/2015	Monday	0000	Hospital	2015387736	Midblock	Daylight	Wet	90	No Sign Or Control		Curve		Hit Object	On Right Verge After Leaving Cway	82:Off Path On Curve: Off Right Bend In Obj	Colliding	Car	N	S	Out Of Control: Other	Shrub	Tree		

APPENDIX B: CONSTRAINTS MAPPING



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	8.06.2020
Title	CONSTRAINTS MAPPING & CRASH DATA (CHA 0 - 1150)	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:2000 AT A3

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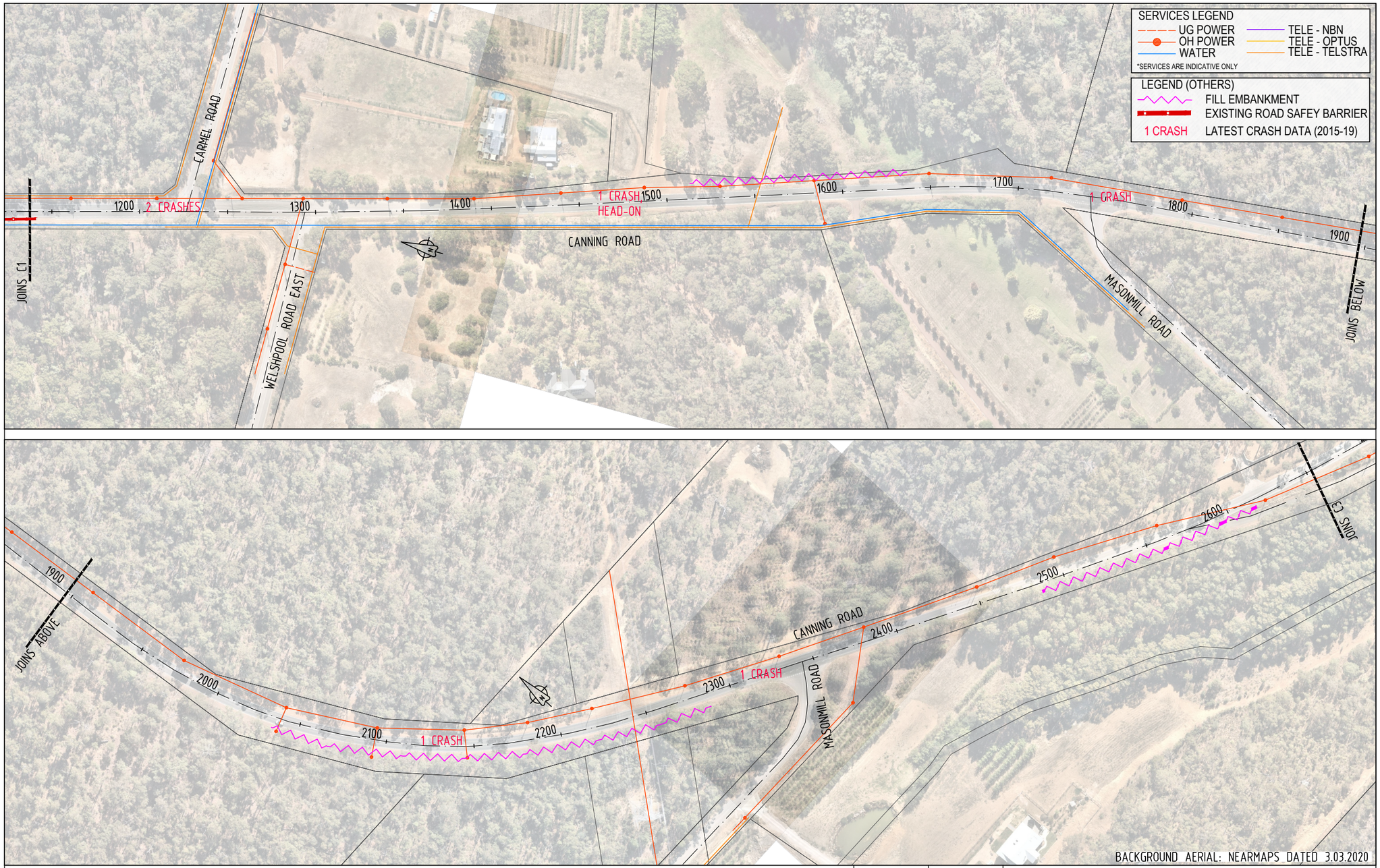
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	C1	01



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	8.06.2020
Title	CONSTRAINTS MAPPING & CRASH DATA (CHA 1150 - 2650)	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:2000 AT A3

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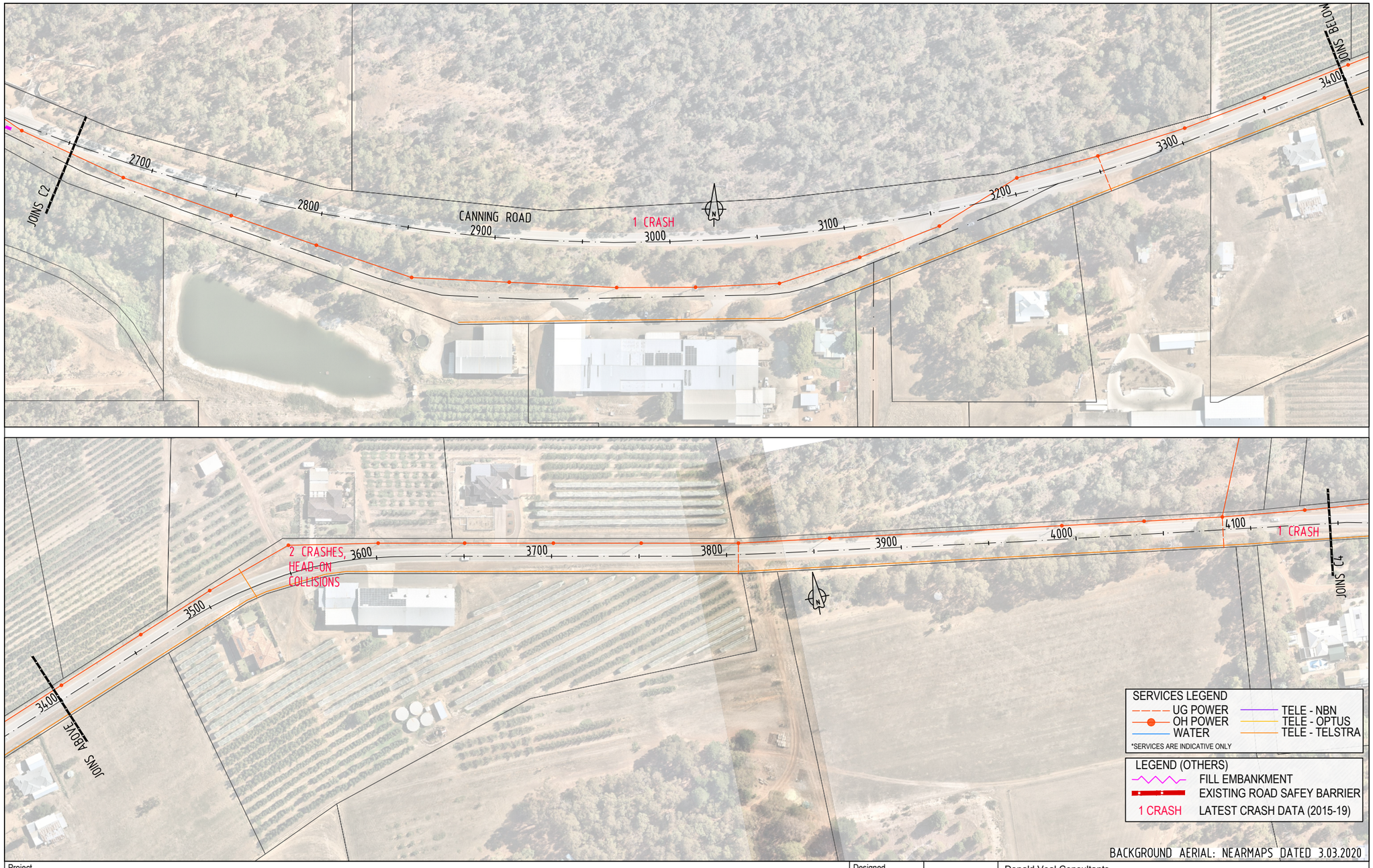
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	C2	01



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	8.06.2020
Title	CONSTRAINTS MAPPING & CRASH DATA (CHA 2650 - 4150)	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:2000 AT A3

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Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	C3	01

Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	8.06.2020
Title	CONSTRAINTS MAPPING & CRASH DATA (CHA 4150 - 5350)	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:2000 AT A3

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Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	C4	01

Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed	GTT 8.06.2020
Title	CONSTRAINTS MAPPING & CRASH DATA (CHA 5350 - 6850)	Drawn	GTT 25.08.2020
Client	CITY OF KALAMUNDA	Checked	SY 25.08.2020
		Approved	
		Scale	1:2000 AT A3

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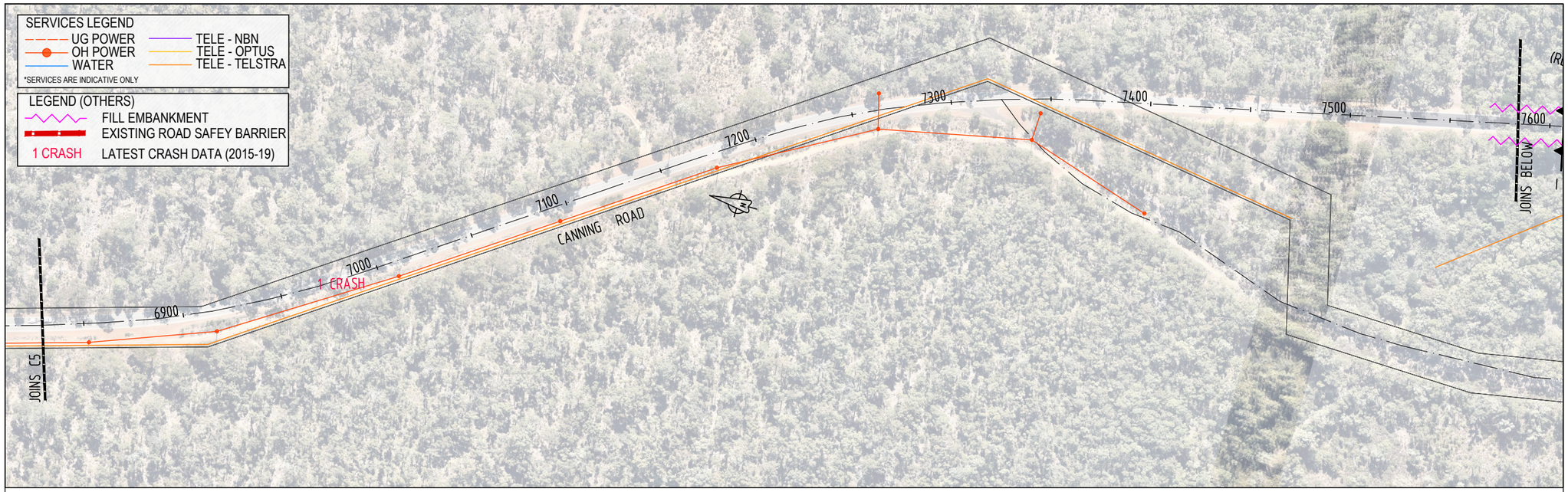
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	C5	01



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	8.06.2020
Title	CONSTRAINTS MAPPING & CRASH DATA (CHA 6850 - 8350)	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:2000 AT A3

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Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	C6	01

Project
CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION

Title
CONSTRAINTS MAPPING & CRASH DATA (CHA 8350 - 9850)

Client
CITY OF KALAMUNDA

Designed	GTT	8.06.2020
Drawn	GTT	25.08.2020
Checked	SY	25.08.2020
Approved		
Scale	1:2000 AT A3	

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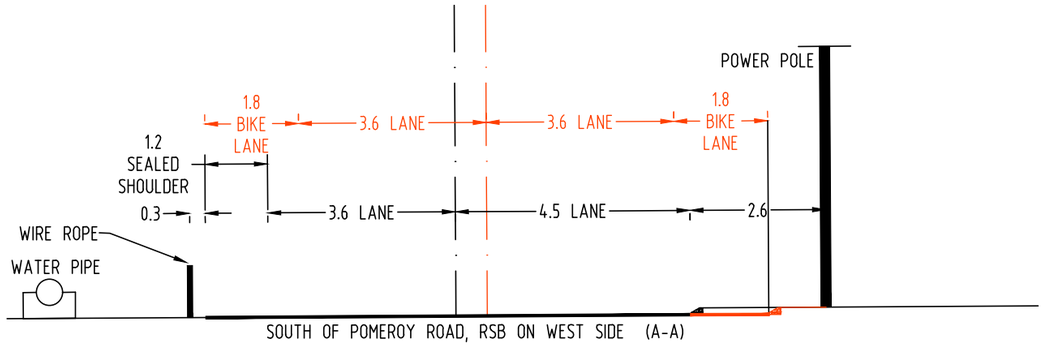
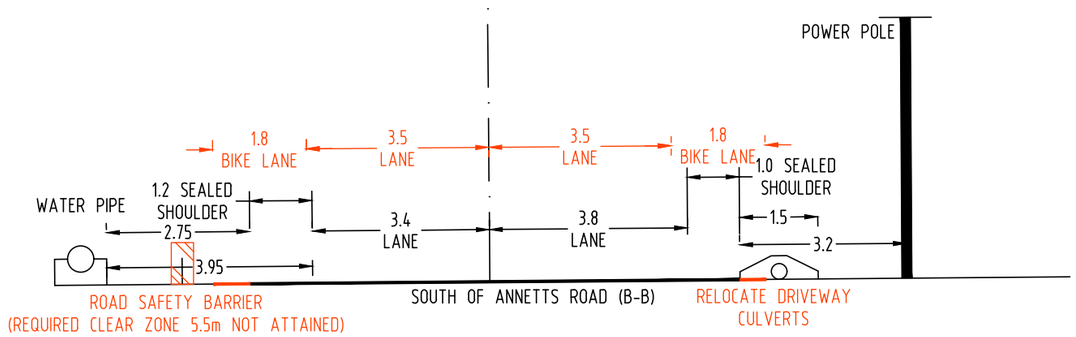
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	C7	01

APPENDIX C: CONCEPT TYPICAL CROSS SECTIONS

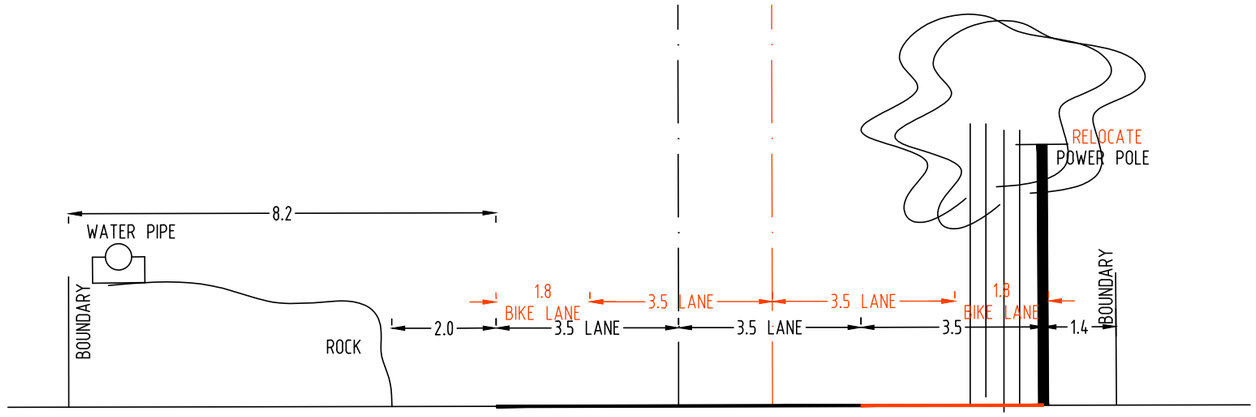
Chainage		Length (m)	Cross section proposed		
Start	End		Type	Description	Dwg
0	225	225	A-A	South of Pomeroy Road, RSB on west side	TXS1
225	400	225	A1-A1	South of Pomeroy Road, no existing RSB on west side	TXS5
400	1025	575	B-B	South of Annetts Road	TXS1
1025	1150	125	B1-B1	North of Carmel Road	TXS5
1150	1300	150	B-B	South of Annetts Road	TXS1
1300	1500	200	C-C	Just south of Welshpool Road East	TXS1
1500	1750	250	D-D	South of Welshpool Road East, kerbed length	TXS2
1750	2700	950	E-E	South of Masonmill Road (north)	TXS2
2700	3200	500	E1-E1	South of Masonmill Road (south)	TXS5
3200	3500	300	F1-F1	West of Glenisla Road	TXS6
3500	3750	150	F-F	Horizontal Curve West of Glenisla Road	TXS2
3750	4200	550	F1-F1	West of Glenisla Road	TXS6
4200	5200	1000	G-G	West of Pickering Brook Road	TXS3
5200	5450	250	H1-H1	Just south of Pickering Brook Road at Canning Road	TXS6
5450	7500	2050	H-H	South of Pickering Brook Road	TXS3
7500	7900	400	I-I	Kerbed length of Canning Road, south of Pickering Road	TXS4
7900	8200	300	J-J	South of Douglas Road	TXS4
8200	9500	1300	K-K	North of Canning Mills Road	TXS4



SOUTH OF POMEROY ROAD, RSB ON WEST SIDE (A-A)



SOUTH OF ANNETTS ROAD (B-B)



JUST SOUTH OF WELSHPOOL ROAD (C-C)

Project: CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed	GTT	8.06.2020
Title: TYPICAL CROSS SECTIONS	Drawn	GTT	25.08.2020
Client: CITY OF KALAMUNDA	Checked	SY	25.08.2020
	Approved		
	Scale	1:100 AT A3	

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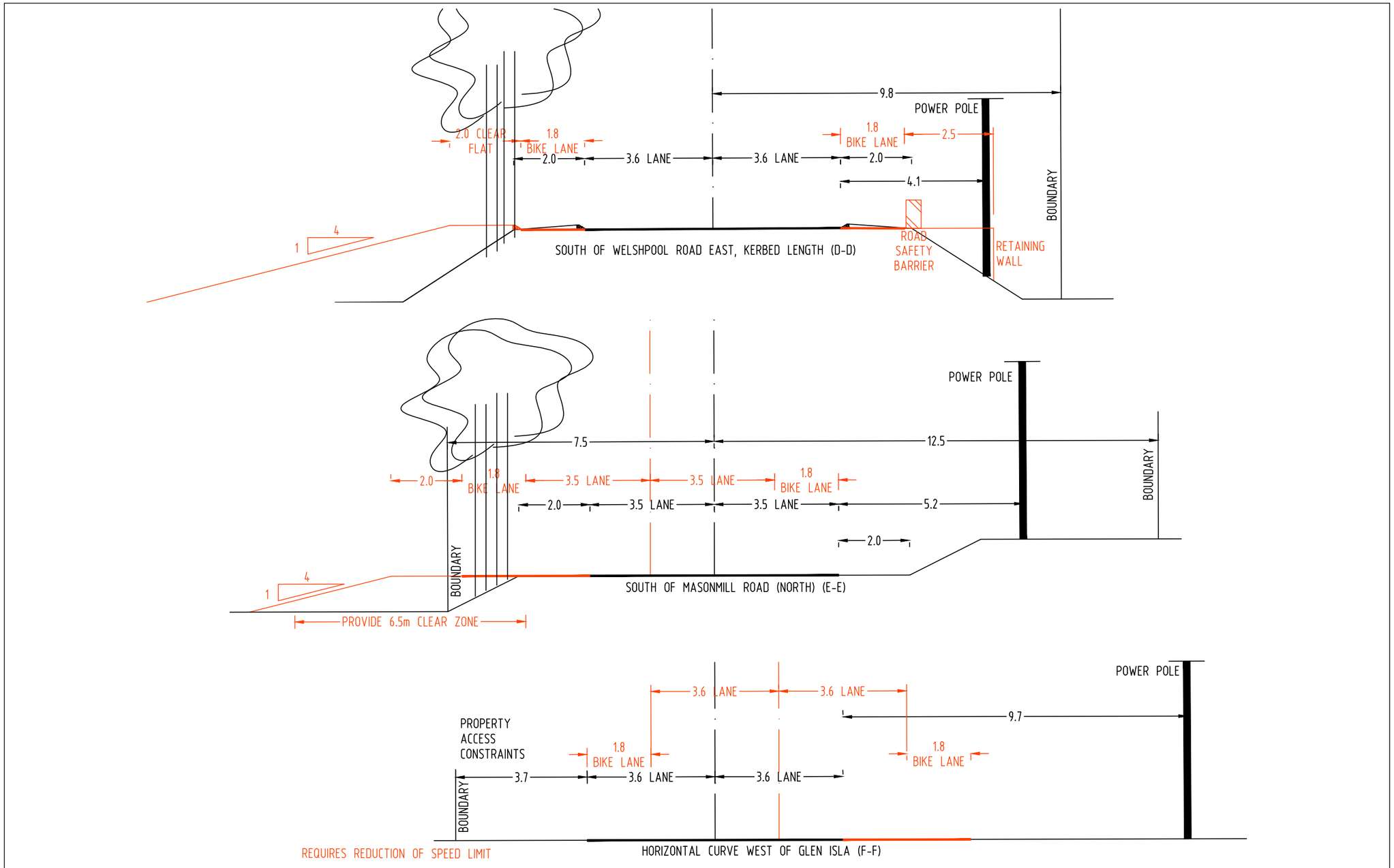
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	TXS1	01



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	8.06.2020
Title	TYPICAL CROSS SECTIONS	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:100 AT A3

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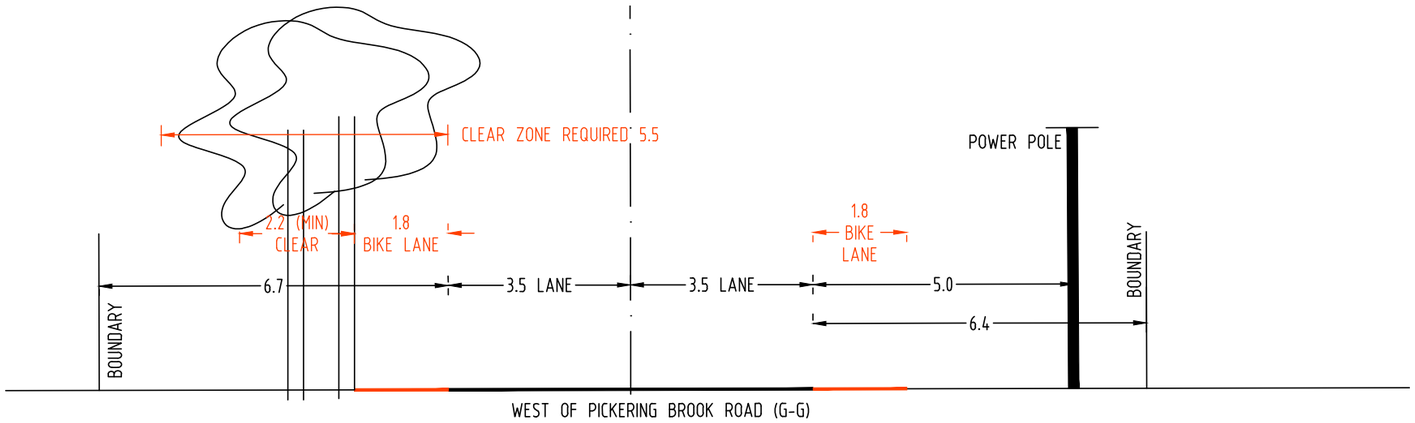
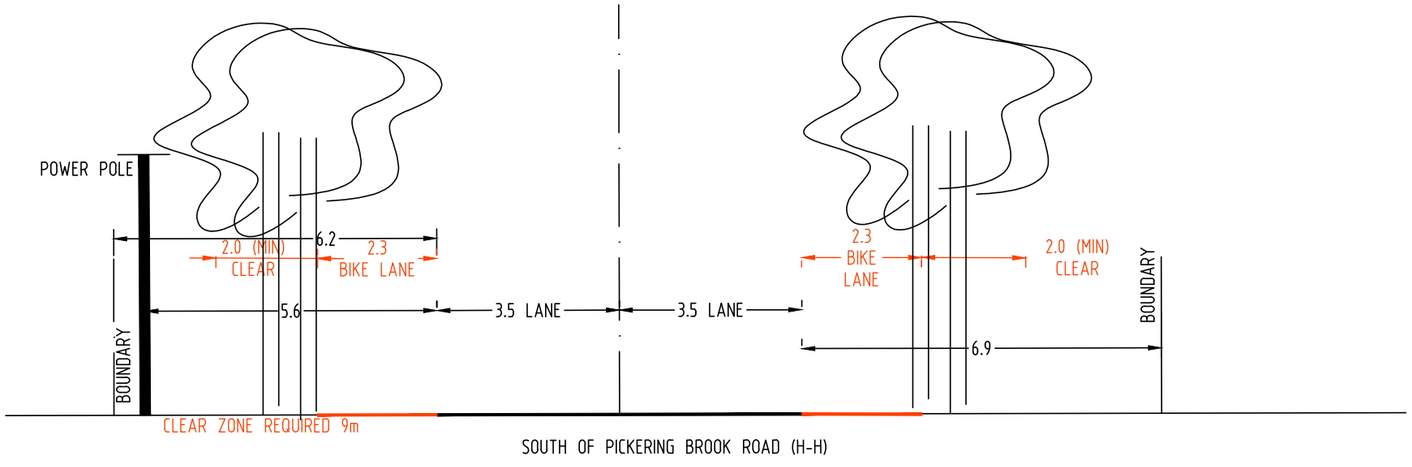
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	TXS2	01





Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	8.06.2020
Title	TYPICAL CROSS SECTIONS	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:100 AT A3

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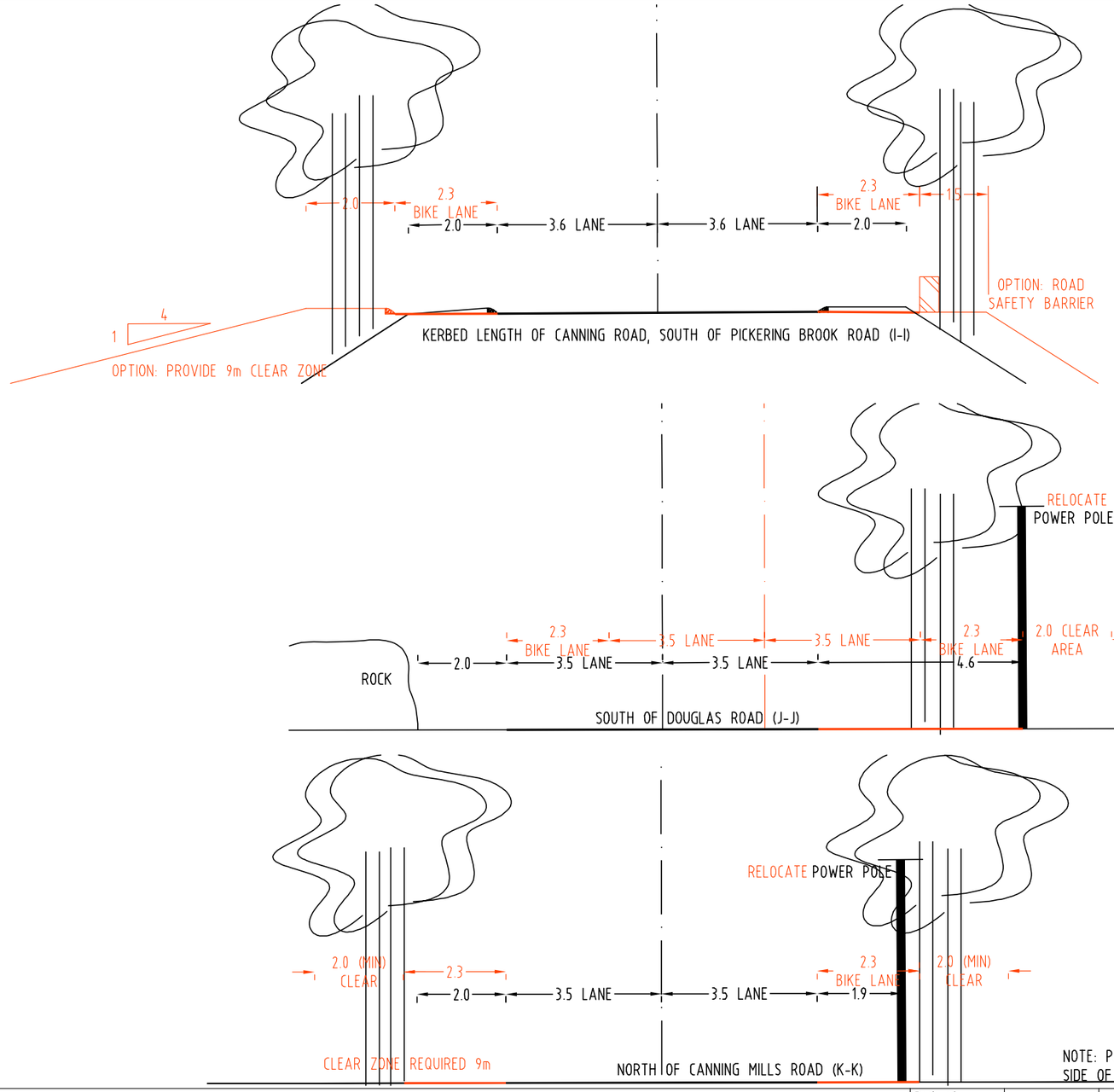
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	TXS3	01



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	8.06.2020
Title	TYPICAL CROSS SECTIONS	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:100 AT A3

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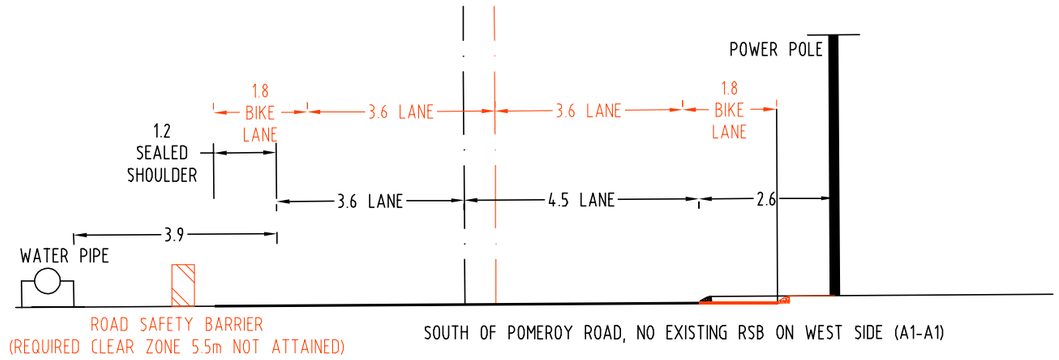
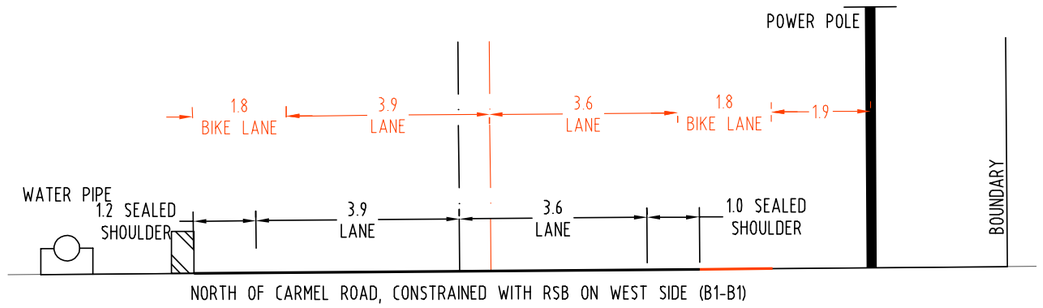
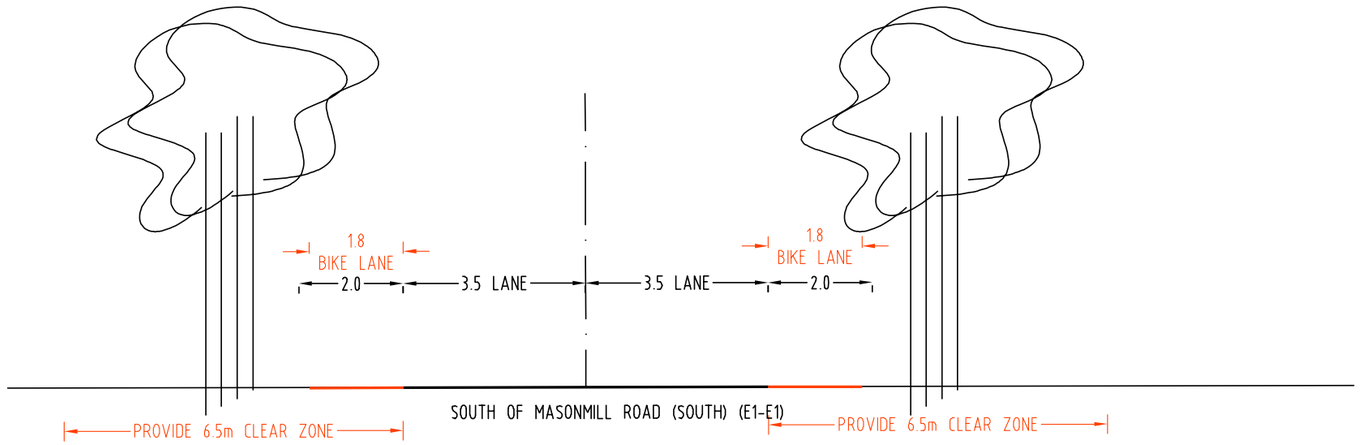
DONALD VEAL CONSULTANTS

Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	TXS4	01







Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	9.06.2020
Title	TYPICAL CROSS SECTIONS	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:100 AT A3

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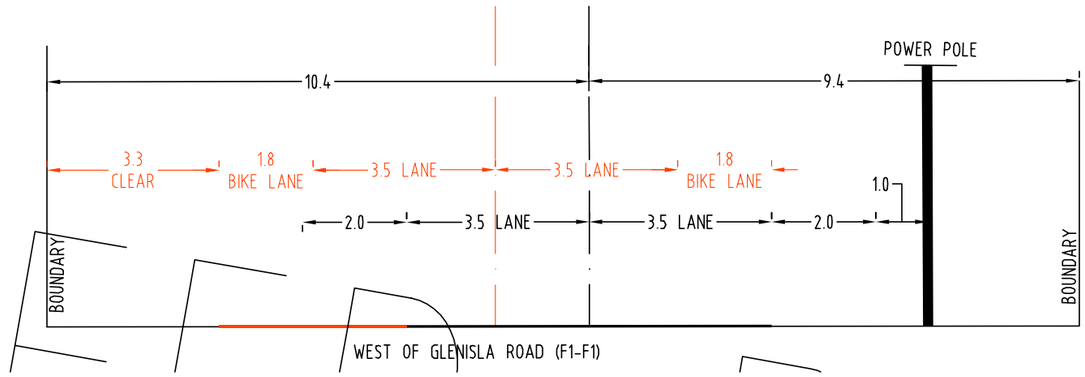
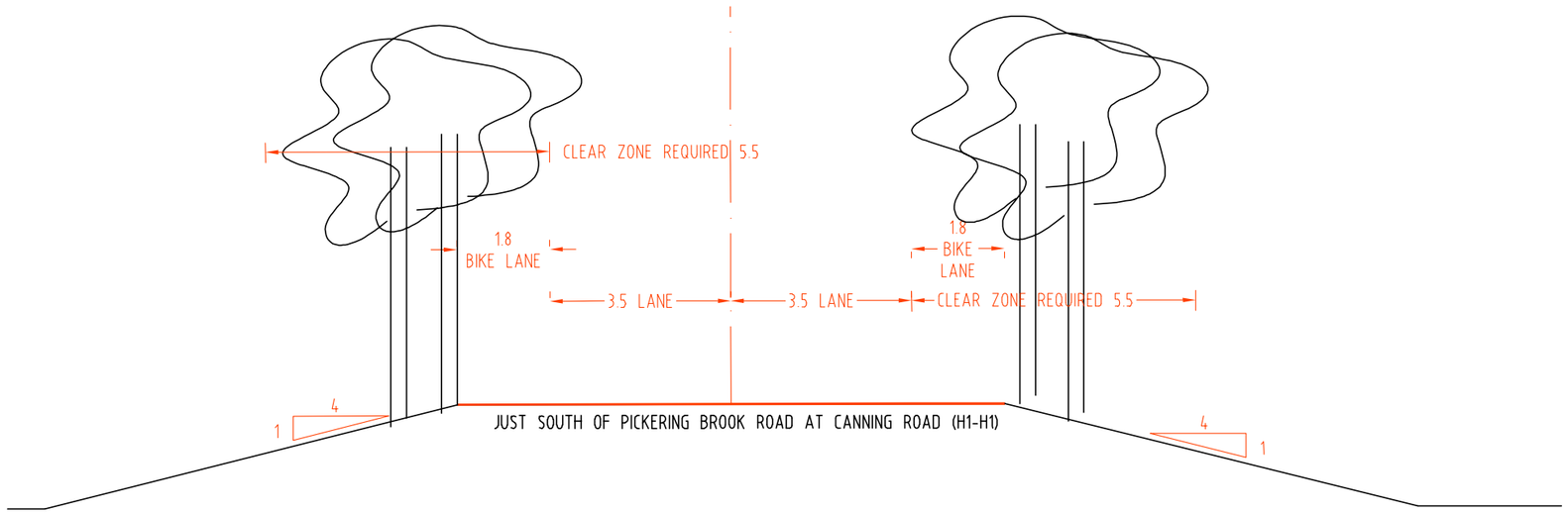
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	TXS5	01





Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	9.06.2020
Title	TYPICAL CROSS SECTIONS	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:100 AT A3

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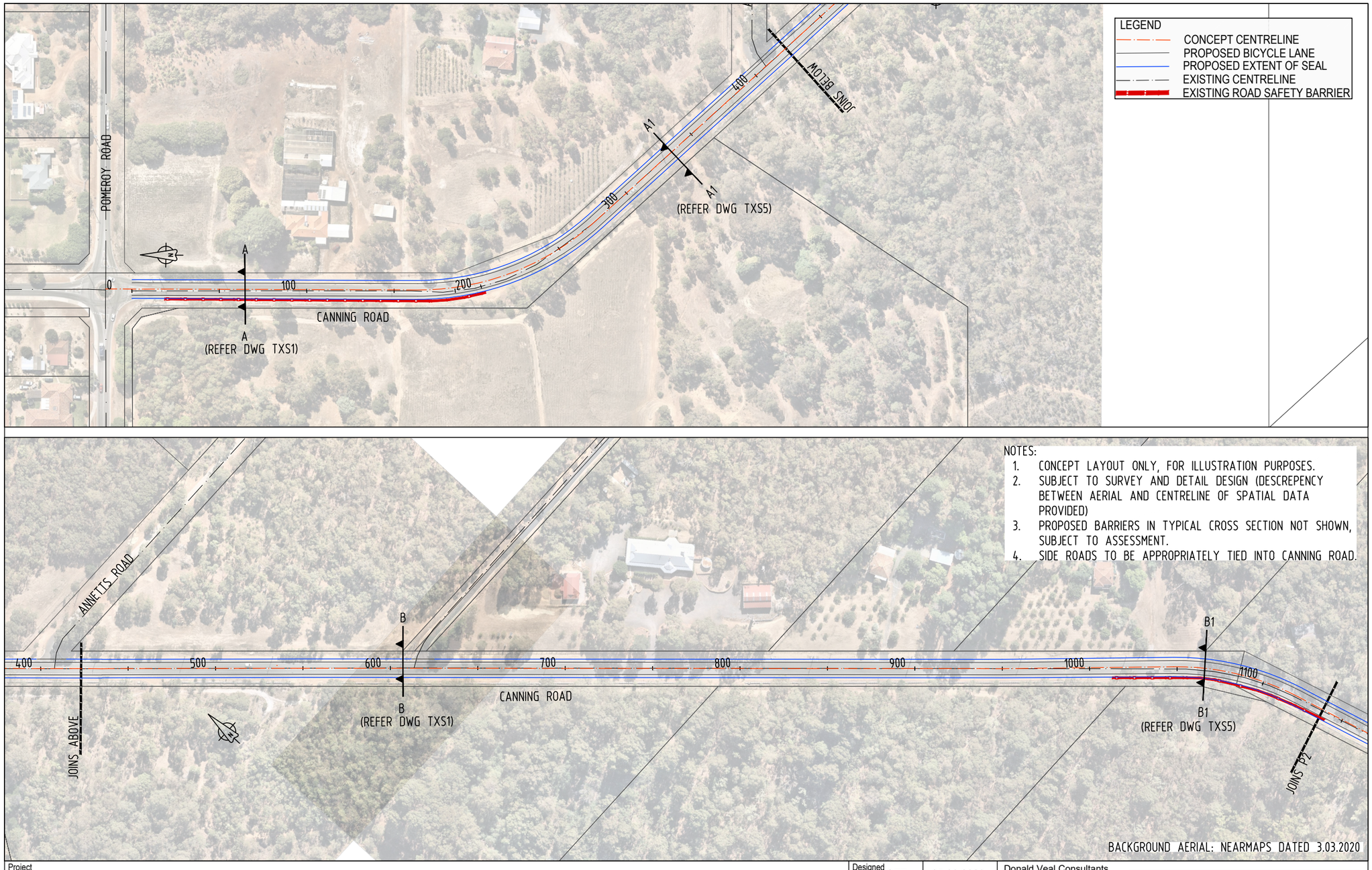
DONALD VEAL CONSULTANTS

Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	TXS6	01

APPENDIX D: CONCEPT PLAN



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	25.08.2020
Title	CONCEPT LAYOUT (CHA 0 - 1150)	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:2000 AT A3

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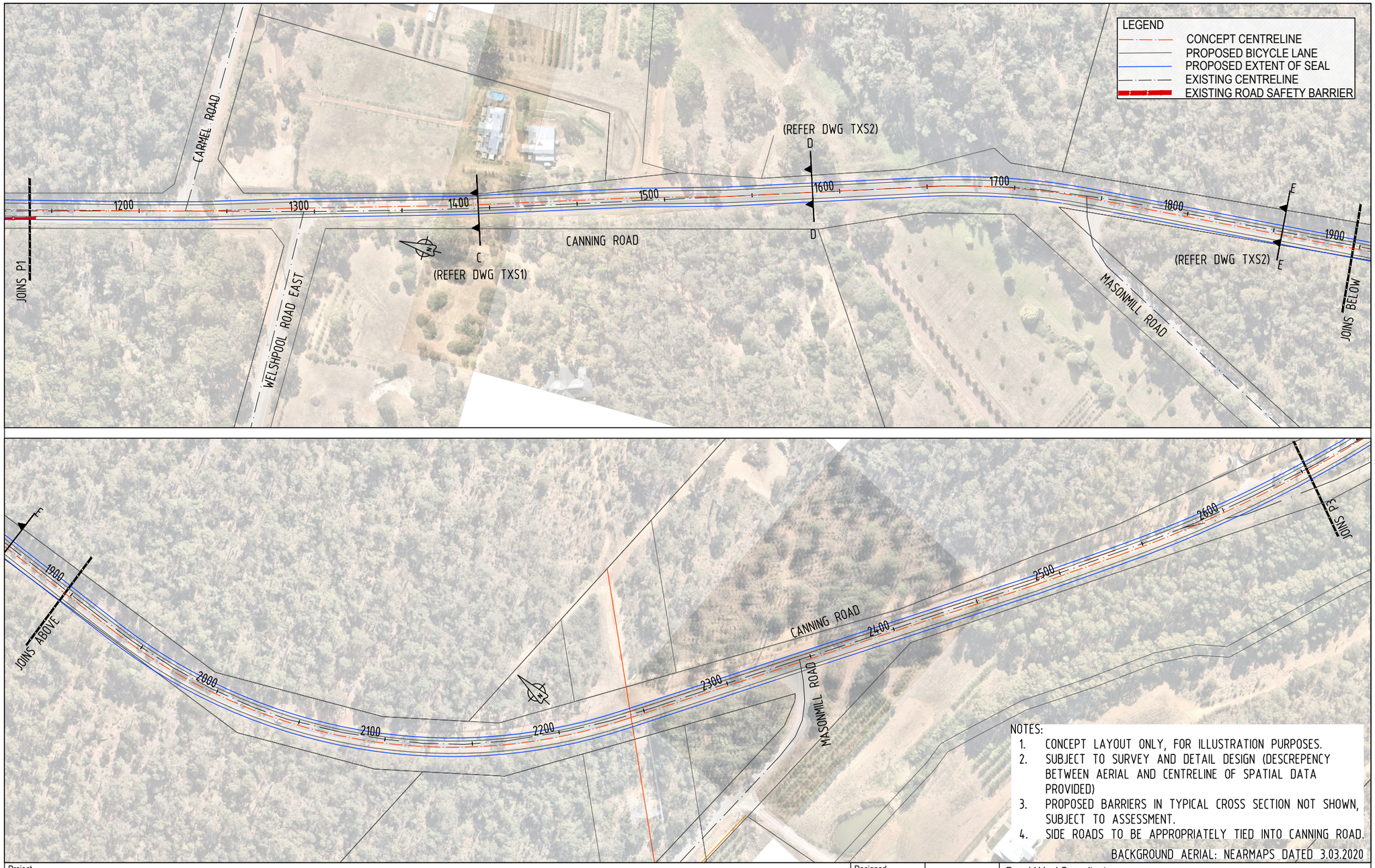
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	P1	



NOTES:

1. CONCEPT LAYOUT ONLY, FOR ILLUSTRATION PURPOSES.
2. SUBJECT TO SURVEY AND DETAIL DESIGN (DESCREPENCY BETWEEN AERIAL AND CENTRELINE OF SPATIAL DATA PROVIDED)
3. PROPOSED BARRIERS IN TYPICAL CROSS SECTION NOT SHOWN, SUBJECT TO ASSESSMENT.
4. SIDE ROADS TO BE APPROPRIATELY TIED INTO CANNING ROAD.

BACKGROUND AERIAL: NEARMAPS DATED 3.03.2020

Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION
Title	CONCEPT LAYOUT (CHA 1150 - 2650)
Client	CITY OF KALAMUNDA

Designed	GTT	25.08.2020
Drawn	GTT	25.08.2020
Checked	SY	25.08.2020
Approved		
Scale	1:2000 AT A3	

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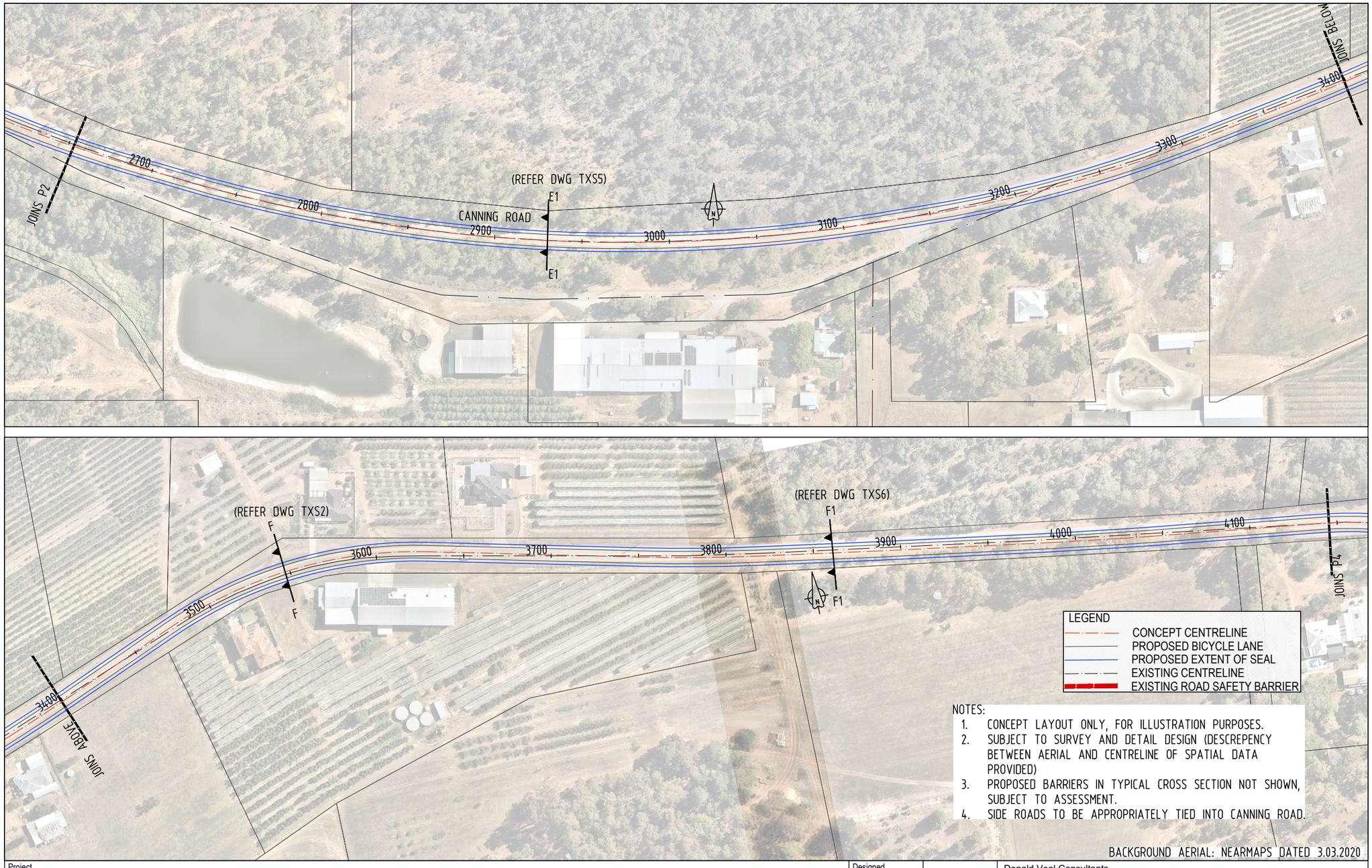
DONALD VEAL CONSULTANTS

Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	P2	



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	
Title	CONCEPT LAYOUT (CHA 2650 - 4150)	
Client	CITY OF KALAMUNDA	
Designed	GTT	25.08.2020
Drawn	GTT	25.08.2020
Checked	SY	25.08.2020
Approved		
Scale	1:2000 AT A3	

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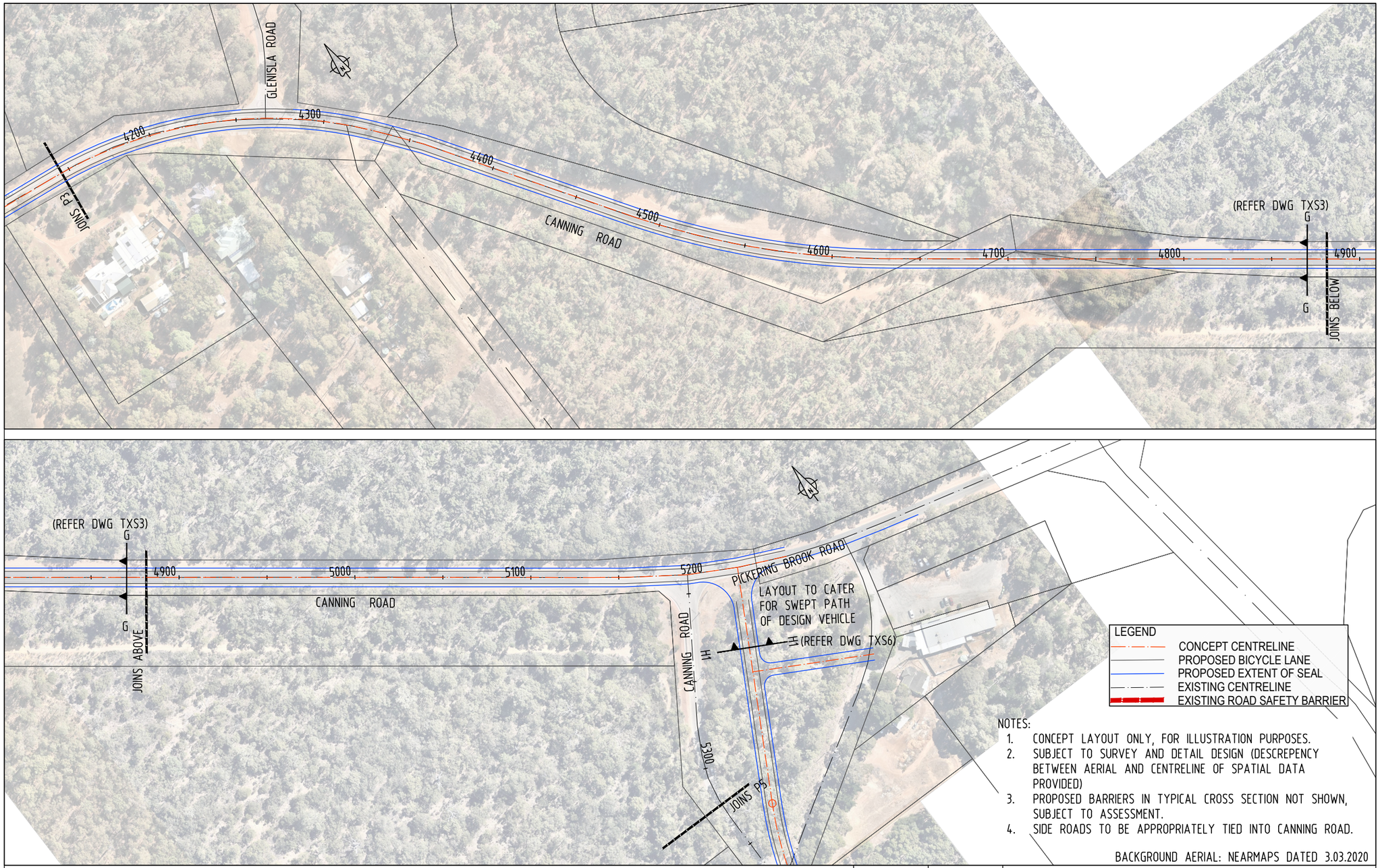
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1 P3		



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	
Title	CONCEPT LAYOUT (CHA 4150 - 5350)	
Client	CITY OF KALAMUNDA	
Designed	GTT	25.08.2020
Drawn	GTT	25.08.2020
Checked	SY	25.08.2020
Approved		
Scale	1:2000 AT A3	

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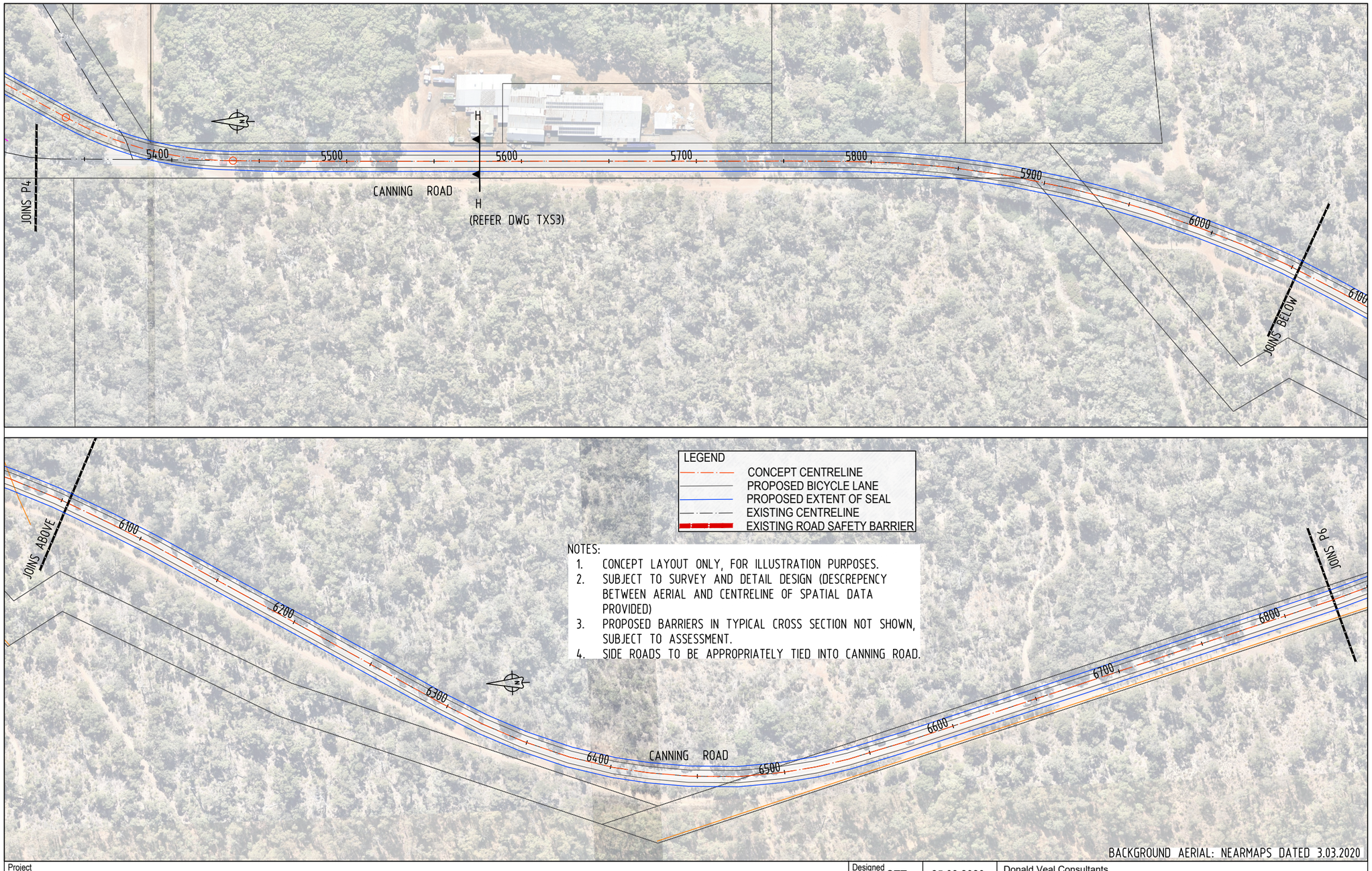
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	P4	



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	25.08.2020
Title	CONCEPT LAYOUT (CHA 5350 - 6850)	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:2000 AT A3

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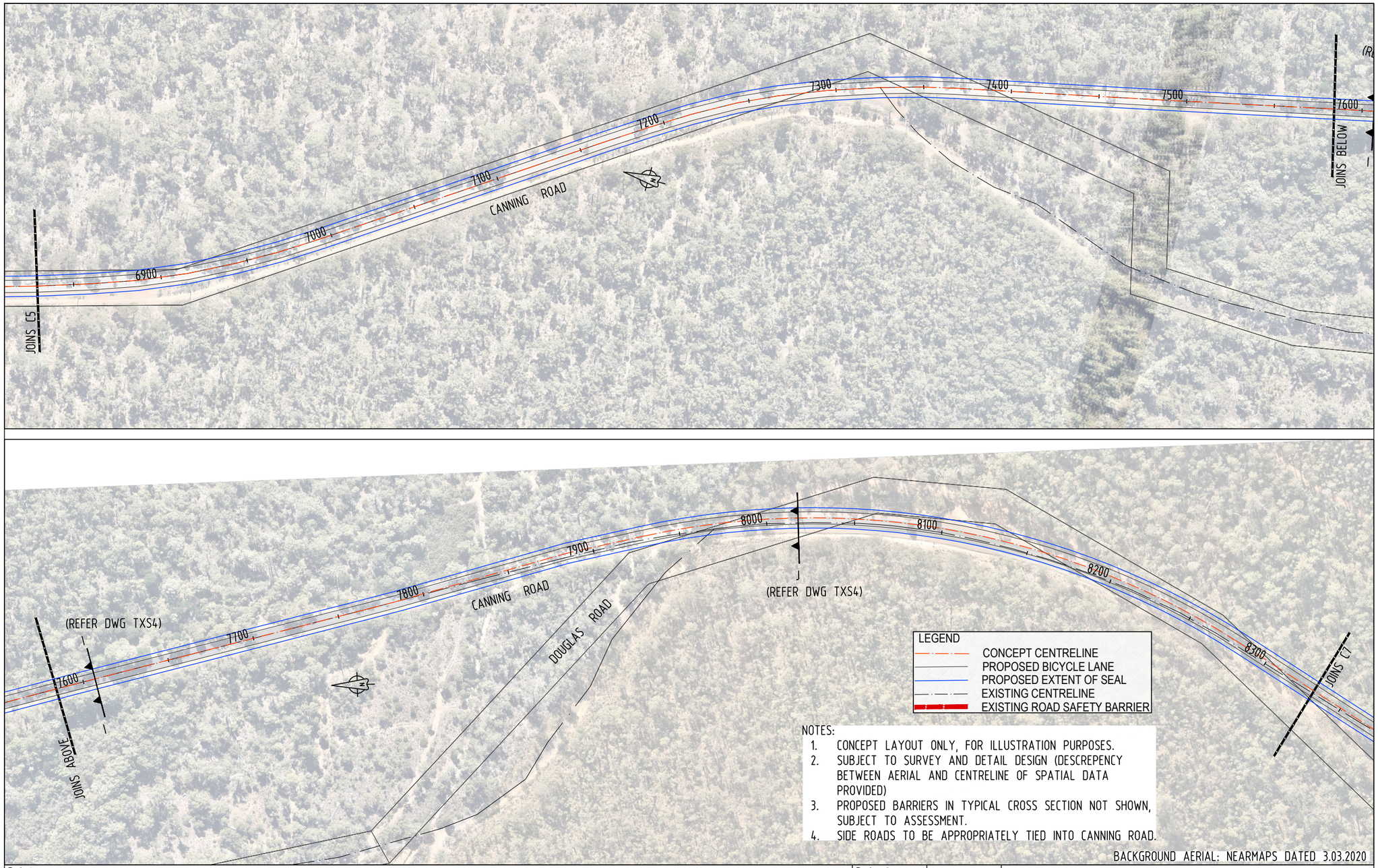
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1	P5	



Project	CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION	Designed GTT	25.08.2020
Title	CONCEPT LAYOUT (CHA 6850 - 8350)	Drawn GTT	25.08.2020
Client	CITY OF KALAMUNDA	Checked SY	25.08.2020
		Approved	
		Scale	1:2000 AT A3

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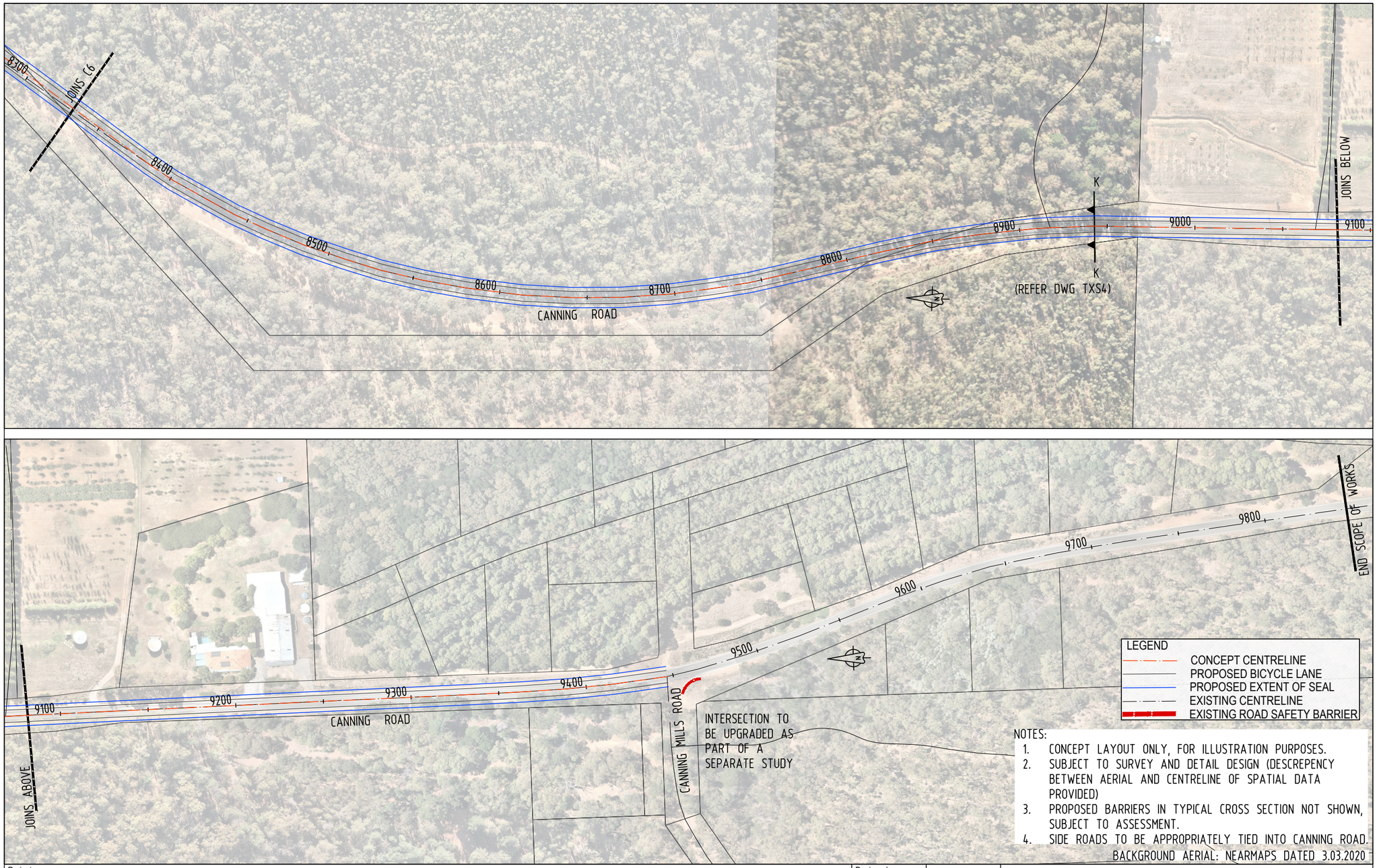
Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1 P6		



Project
CANNING ROAD, POMEROY ROAD TO SLK 14.56, ROAD SAFETY INVESTIGATION

Title
CONCEPT LAYOUT (CHA 8350 - 9850)

Client
CITY OF KALAMUNDA

Designed	GTT	25.08.2020
Drawn	GTT	25.08.2020
Checked	SY	25.08.2020
Approved		
Scale	1:2000 AT A3	

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DONALD VEAL CONSULTANTS

Project Number	Drawing File Name	Drawing Number	Revision
LG362	DVC-LG362 Rev1 P7		