

26 March 2021

Victorian Planning Authority

Via email: James.Paull@vpa.vic.gov.au

Attention: James Paull

Craigieburn West PSP

Transport Impact Assessment – Addendum 1

Dear James,

onemilegrid has previously prepared a Transport Impact Assessment (ref: 190690TIA002D-F) for the Craigieburn West PSP.

Following the preparation of the above referenced Transport Impact Assessment, the draft Craigieburn West PSP document was prepared and released for public consultation. Of importance, the document provides guidelines in regard to the recommended residential densities within the Craigieburn West PSP.

A revised traffic model has since been prepared to reflect the different residential yields considered in the PSP compared to those previously assessed in the Transport Impact Assessment report.

Recommended revisions to the road hierarchy have also been devised and are discussed in this document, which is to be read in conjunction with and as an addendum to the previously prepared Transport Impact Assessment report.

Revised Traffic Model

Residential Lot Yield

Table 1 provides a comparison of the residential lot yields assessed under the previously prepared report, and the revised lot yields adopted for this updated assessment. It should be noted that there have also been minor updates to what has been considered as 'developable area' between the earlier and amended models.

Table 1 Residential Yield

	<i>Previous Assessment</i>	<i>Amended Assessment</i>
Lot Yield Adopted	600 m ² per lot	Standard density residential – 18.5 dwellings / net developable hectare Medium density residential (within walkable catchment) – 26.5 dwellings / net developable hectare
Total Lots	6,153	8,230

The residential densities adopted in this updated assessment are in accordance with the densities provided within the draft Craigieburn West PSP document and results in an average of 20 dwellings / net developable hectare. The revised modelling assesses a net developable area (NDA) of 414 hectares, with a summary of the residential component expected to generate traffic provided in Table 2. A map showing the locations of these precincts is provided as Figure 14 of the previously prepared Transport Impact Assessment (ref: 190690TIA002D-F).

Table 2 Proposed Residential Uses

<i>Precinct</i>	<i>Residential Type</i>	<i>Area</i>
1	Standard Density	10 ha (187 dwellings)
2	Standard Density	57.5 ha (1,063 dwellings)
3	Standard Density	52.9 ha (978 dwellings)
4	Standard Density	24.6 ha (456 dwellings)
	Medium Density	14.2 ha (377 dwellings)
5	Standard Density	11.6 ha (215 dwellings)
	Medium Density	28 ha (743 dwellings)
6	Standard Density	14.1 ha (260 dwellings)
	Medium Density	29.4 ha (780 dwellings)
7	Standard Density	58.4 ha (1,080 dwellings)
8	Standard Density	41.7 ha (771 dwellings)
9	Standard Density	52.2 ha (965 dwellings)
10	Standard Density	19.4 ha (359 dwellings)
Total Dwellings		~8,234 lots (6,334 standard density / 1,900 medium density)

Traffic Generation

The updated model assesses a traffic generation rate of 9 vehicle movements per day for each standard density lot, as was the case within the Transport Impact Assessment. Medium density lots, particularly in walkable areas close to amenities, generate lower traffic volumes than standard density lots. As such a traffic generation rate of 7 movements per day has been adopted for each medium density lot.

Application of these traffic generation rates results in a total traffic generation of 70,310 vehicle movements per day, with 10% (7,031 vehicle movements) expected to occur during both the AM and PM peak hours.

Adopting the same directional splits as per the Transport Impact Assessment results in the AM and PM peak traffic volumes summarised in Table 3 below.

Table 3 Anticipated Peak Hour Traffic Generation

<i>Period</i>	<i>Outbound</i>	<i>Inbound</i>	<i>Two-Way</i>
AM Peak Hour	4,921	2,109	7,030
PM Peak Hour	2,812	4,218	7,030

Generated and Resultant Traffic Volumes

The updated generated and resultant daily traffic volumes are attached to this letter.

These volumes are based on the traffic distributions presented in Section 4.7 of the Transport Impact Assessment report, and include traffic growth from the surrounding areas as discussed in Section 4.4 of the Transport Impact Assessment Report.

Updated Road Hierarchy

Noting the updated traffic volumes, it is recommended that the road hierarchy is updated to replicate that shown in Figure 1.

A mid-block capacity comparison between the previously proposed road network and the recommended road

is provided in Table 4 with the anticipated ultimate daily traffic volumes. Corresponding street names are shown on the enclosed traffic volume diagrams.

Figure 1 Updated Road Hierarchy

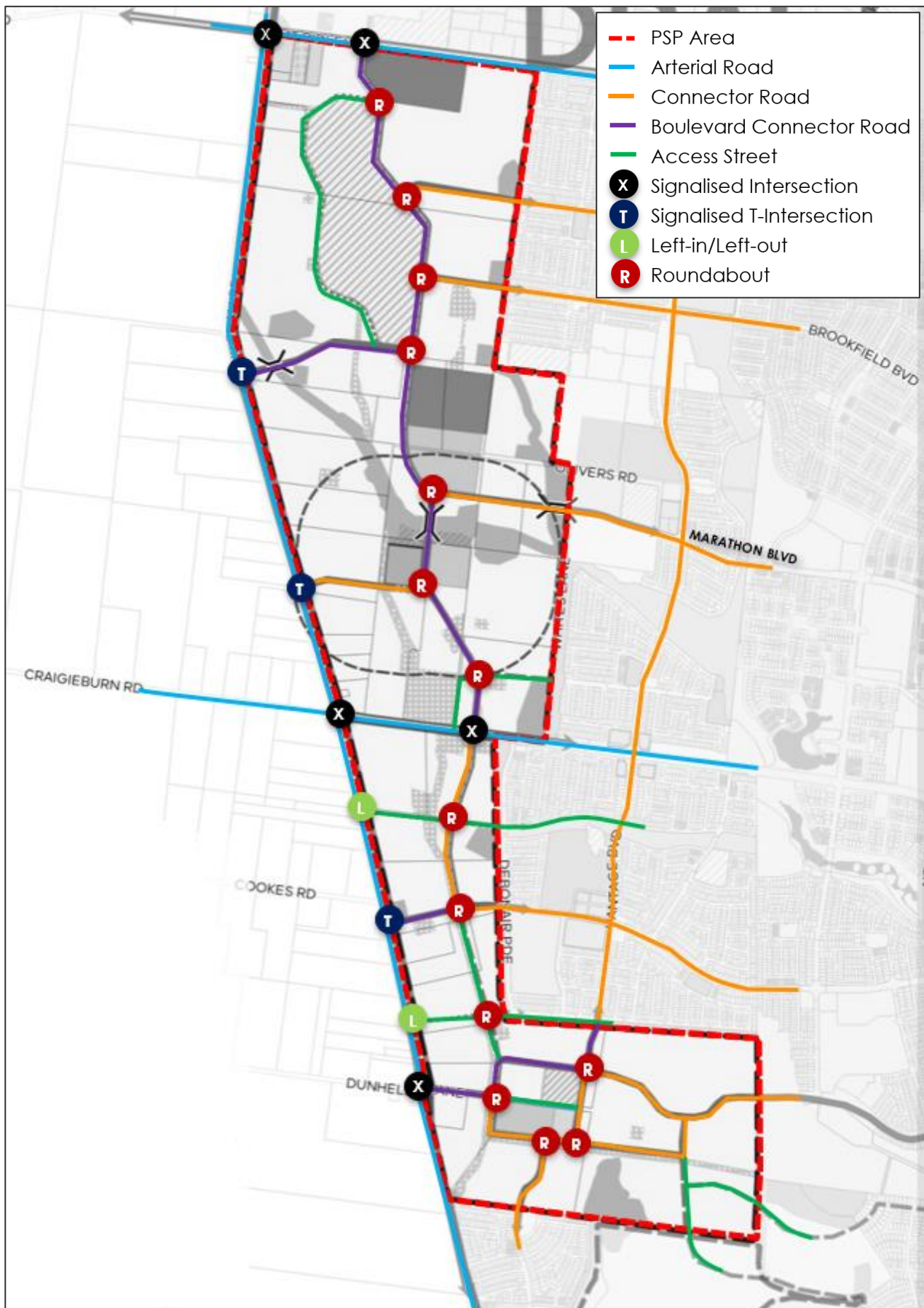


Table 4 Mid-Block Capacity Assessment

Road	Previous Road Classification	New Road Classification	Theoretical Traffic Capacity (vpd) – New Classification	Anticipated Ultimate Traffic Volumes (Two-Way) – Updated Model	Within Theoretical Capacity? – Updated Model & New Classification
Mickleham Road – North of Craigieburn Road	Arterial	Arterial	>30,000	41,300	Yes
Mickleham Road – South of Craigieburn Road	Arterial	Arterial	>30,000	53,500	Yes
Mt Ridley Road	Arterial	Arterial	>30,000	16,300	Yes
Craigieburn Road	Arterial	Arterial	>30,000	35,300	Yes
Marathon Boulevard	Connector Street	Connector Street	3,000-7,000	7,800	No
Grand Boulevard	Connector Street	Connector Street	3,000-7,000	4,400	Yes
Brookfield Boulevard	Connector Street	Connector Street	3,000-7,000	4,500	Yes
Elevation Boulevard – West of N-S Connector Boulevard 1	Connector Street	Connector Boulevard	7,000-12,000	9,300	Yes
Elevation Boulevard – East of N-S Connector Boulevard 1	Connector Street	Connector Street	3,000-7,000	8,300	No
Dunhelen Lane	Connector Boulevard	Connector Boulevard	7,000-12,000	12,200	No
Vantage Boulevard – South of Fairways Boulevard	Connector Street	Connector Street	3,000-7,000	7,400	No
Vantage Boulevard – North of Fairways Boulevard	Connector Street	Connector Boulevard	7,000-12,000	12,000	Yes
Fairways Boulevard – West of Vantage Boulevard	Connector Street	Connector Boulevard	7,000-12,000	8,200	Yes
Fairways Boulevard – East of Vantage Boulevard	Connector Street	Connector Street	3,000-7,000	6,000	Yes
North-South Connector Boulevard 1 – North of Craigieburn Road	Connector Boulevard	Connector Boulevard	7,000-12,000	12,200	No
North-South Connector Boulevard 1 – South of Craigieburn Road	Connector Boulevard	Connector Street	3,000-7,000	5,000	Yes
North-South Connector Boulevard 2 – North of Dunhelen Lane	Connector Boulevard	Connector Boulevard	7,000-12,000	9,400	Yes
North-South Connector Boulevard 2 – South of Dunhelen Lane	Connector Boulevard	Connector Road	3,000-7,000	3,600	Yes
East-West Connector Road 1	Connector Street	Connector Boulevard	7,000-12,000	8,900	Yes
East-West Connector Road 2	Connector Street	Connector Street	3,000-7,000	6,600	Yes
East-West Connector Road 3 – West of Horizon Boulevard	Connector Street	Connector Street	3,000-7,000	3,000	Yes
East-West Connector Road 3 – Btw Horizon Boulevard & Vantage Boulevard	Connector Street	Connector Street	3,000-7,000	8,300	No
East-West Connector Road 3 – East of Horizon Boulevard	Connector Street	Connector Street	3,000-7,000	3,800	Yes
Gallantry Boulevard	Access Street – Level 2	Access Street – Level 2	2,000-3,000	2,300	Yes
Navigation Road	Access Street – Level 2	Access Street – Level 2	2,000-3,000	3,400	No
Candlebark Drive	Access Street – Level 2	Access Street – Level 2	2,000-3,000	3,200	No
Horizon Boulevard	Connector Street	Connector Street	3,000-7,000	7,000	Yes

As shown above, the majority of roads are expected to operate within their theoretical capacity except for several short sections of road.

In regard to Marathon Boulevard, Dunhelen Lane, Vantage Boulevard (south of Fairways Boulevard), North-South Connector Boulevard 1, Navigation Road and Horizon Boulevard, these roads are all anticipated to operate at a maximum of 11% over their theoretical capacity. This is considered to be within an acceptable range, given that the inclusion of lower order access streets within the network (which have not been modelled) is expected to reduce the actual traffic volumes on the modelled road network, and considering typical margins of error for large scale modelling such as that undertaken as part of this study, and from previous modelling undertaken by others.

Furthermore, Elevation Boulevard (east of North-South Connector Boulevard 1) and East-West Connector Road 3 (Between Horizon Boulevard & Vantage Boulevard) are both operating at approximately 19% above their theoretical capacity, these sections of roads are approximately 150 metres long and it is not considered appropriate to provide an upgraded cross-section for these sections of road. Again, these roads are anticipated to carry lower volumes once the lower order access road network is designed and delivered.

Conclusions

Considering the updated traffic model and road hierarchy presented above, and the analysis presented in the report, it is concluded that:

- The Craigieburn West PSP has a total area of approximately 565 ha and abuts the Lindum Vale (Mt Ridley West) PSP to the north, Craigieburn (R2) PSP to the east, and Greenvale North (R1) PSP to the south;
- A draft Place Based Plan has been prepared for the area which contemplates developing the area for predominately standard-density residential development, as well as providing a Local Town Centre, schools, community facilities and local parks;
- Based on densities of 18.5 dwellings per net developable hectare for standard density lots and 26.5 dwellings per net developable hectare for medium density lots, with an average of 20 dwellings per net developable hectare, approximately 8,230 lots may be provided within the PSP area;
- The PSP area will primarily be accessed via the existing arterial road network that runs adjacent and through the site (Craigieburn Road, Mickleham Road and Mt Ridley Road). Secondary access opportunities will be provided via the extension of existing roads from the adjacent PSPs which will run through the proposed PSP area;
- The Lindum Vale PSP, which abuts the northern boundary, has had a traffic model prepared for interim (2031) and ultimate (2046) conditions, whilst the Craigieburn R2 PSP, which abuts the eastern boundary, has had a traffic model prepared for what can be considered interim conditions;
- A traffic model has been prepared for the Craigieburn West PSP where the future base conditions were based on the abovementioned traffic modelling as well as external growth along the arterial and connector roads within the vicinity;
- A traffic generation rate of 9 vehicle trips per day per lot (with 10% of trips occurring during the AM and PM peak hour) was adopted for the standard density residential component. Whilst a traffic generation rate of 7 vehicle movements per dwelling was adopted for the medium density residential component. Application of these rates results in the PSP area generating 70,310 vehicle trips per day inclusive of 7,031 vehicle trips per hour during the AM and PM peaks;
- It has been assumed that the AM peak hour will consist of 70% outbound movements and 30% inbound movements. Whilst the PM peak hour will consist of 40% outbound movements and 60% inbound movements;

- The trip purpose traffic distribution has been based on the Victorian Integrated Survey of Travel and Activity (VISTA) which specifies different percentages for work, shopping, education, recreation, and other purposes. Furthermore, the directional distribution was based on existing and future uses within the vicinity;
- The mid-block capacity assessment shows that all roads will operate within or near their theoretical capacity, except for Elevation Boulevard (east of North-South Connector Boulevard 1) and East-West Connector Road 3 (Between Horizon Boulevard & Vantage Boulevard). Nevertheless, considering these are short sections of road, and that actual traffic volumes are expected to reduce as a result of the inclusion of lower order access streets, this is considered appropriate.

Please do not hesitate to contact the undersigned, or Stuart Valentine on (03) 9982 9765 or at stuart.valentine@onemilegrid.com.au, should you wish to discuss the above.

Yours sincerely



Ross Hill

Director - Senior Engineer

onemilegrid

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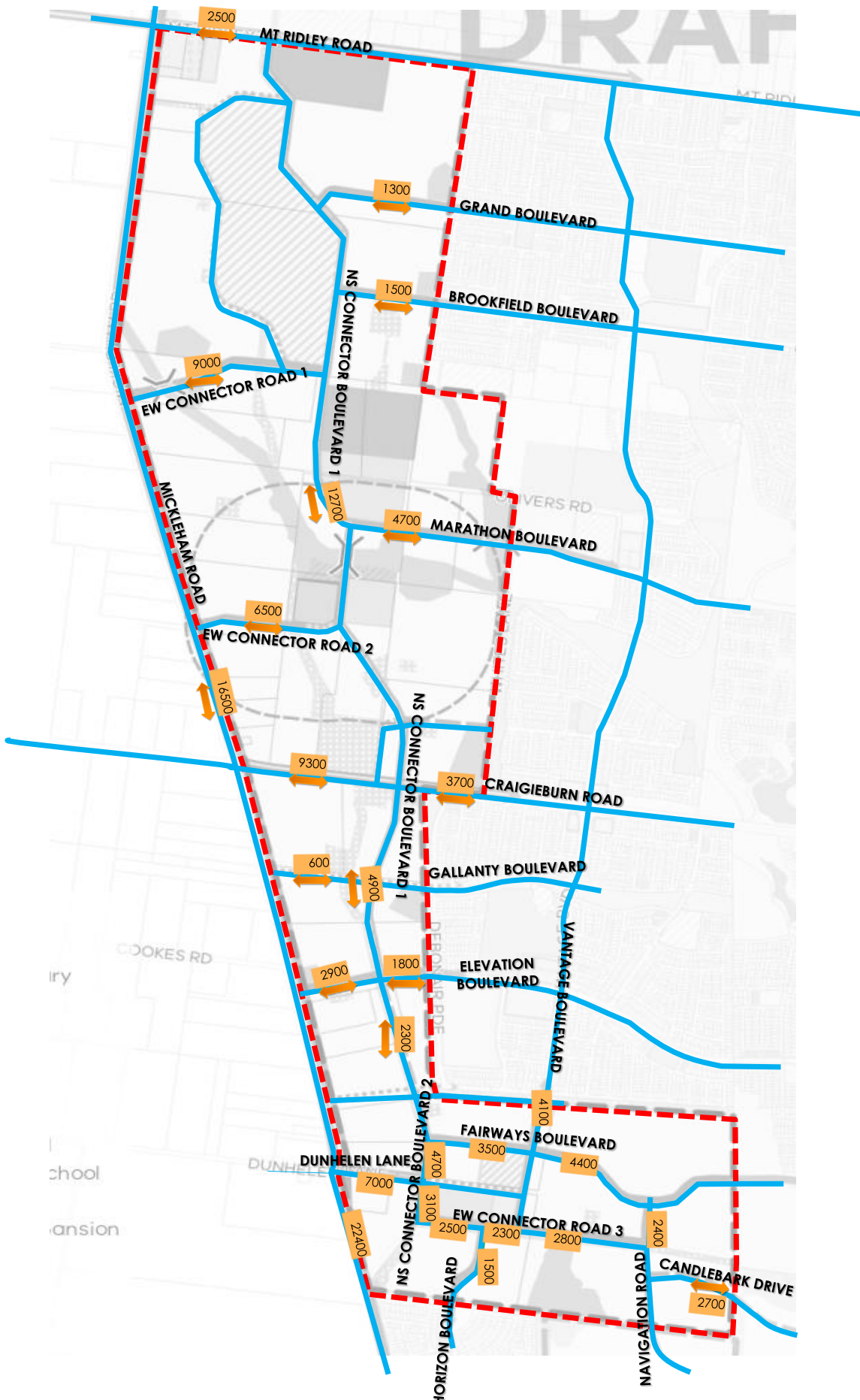
d: (03) 9982 9725

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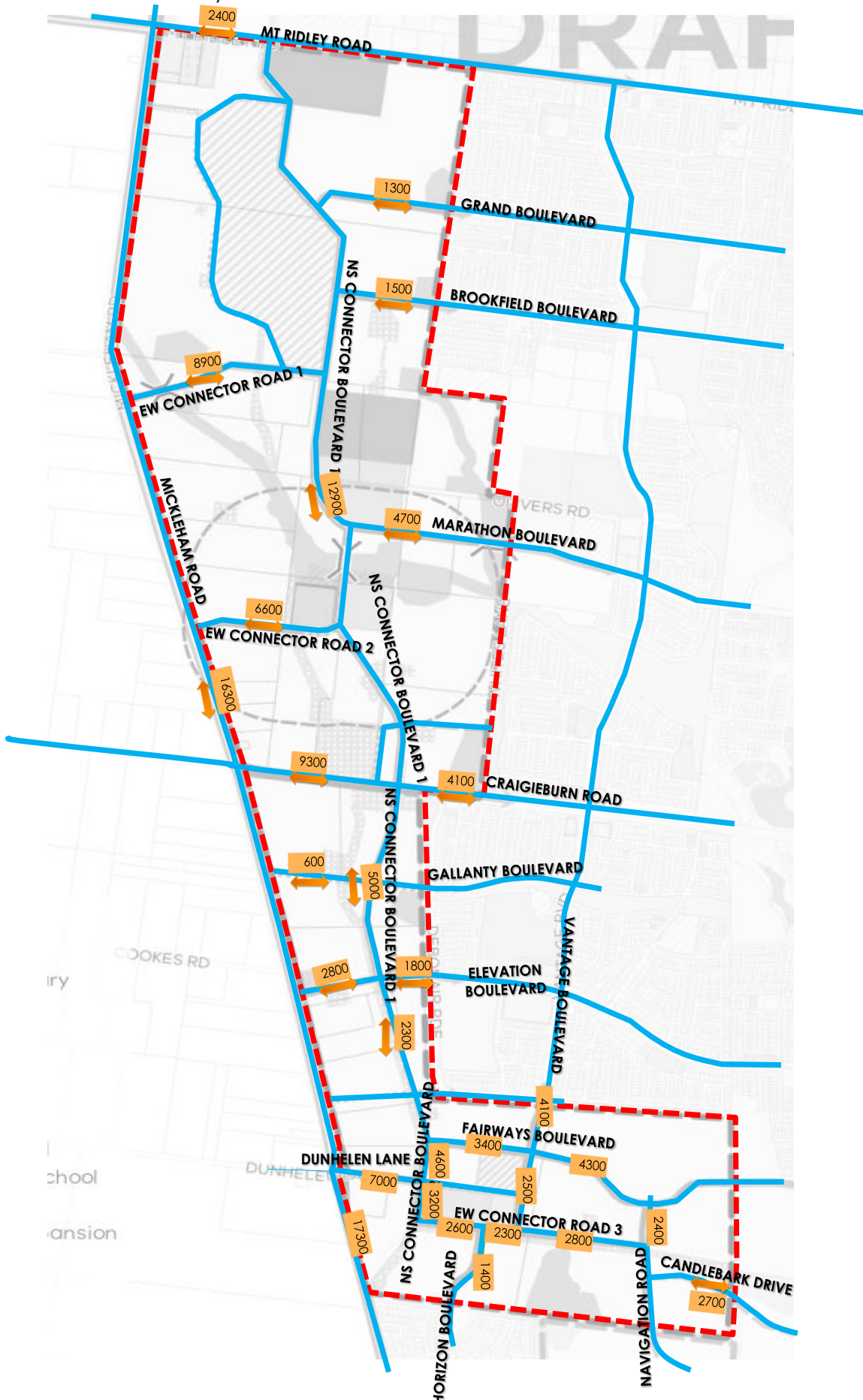
P/R: Ross Hill/Stuart Valentine

att: Generated and Resulted Daily Traffic Volumes

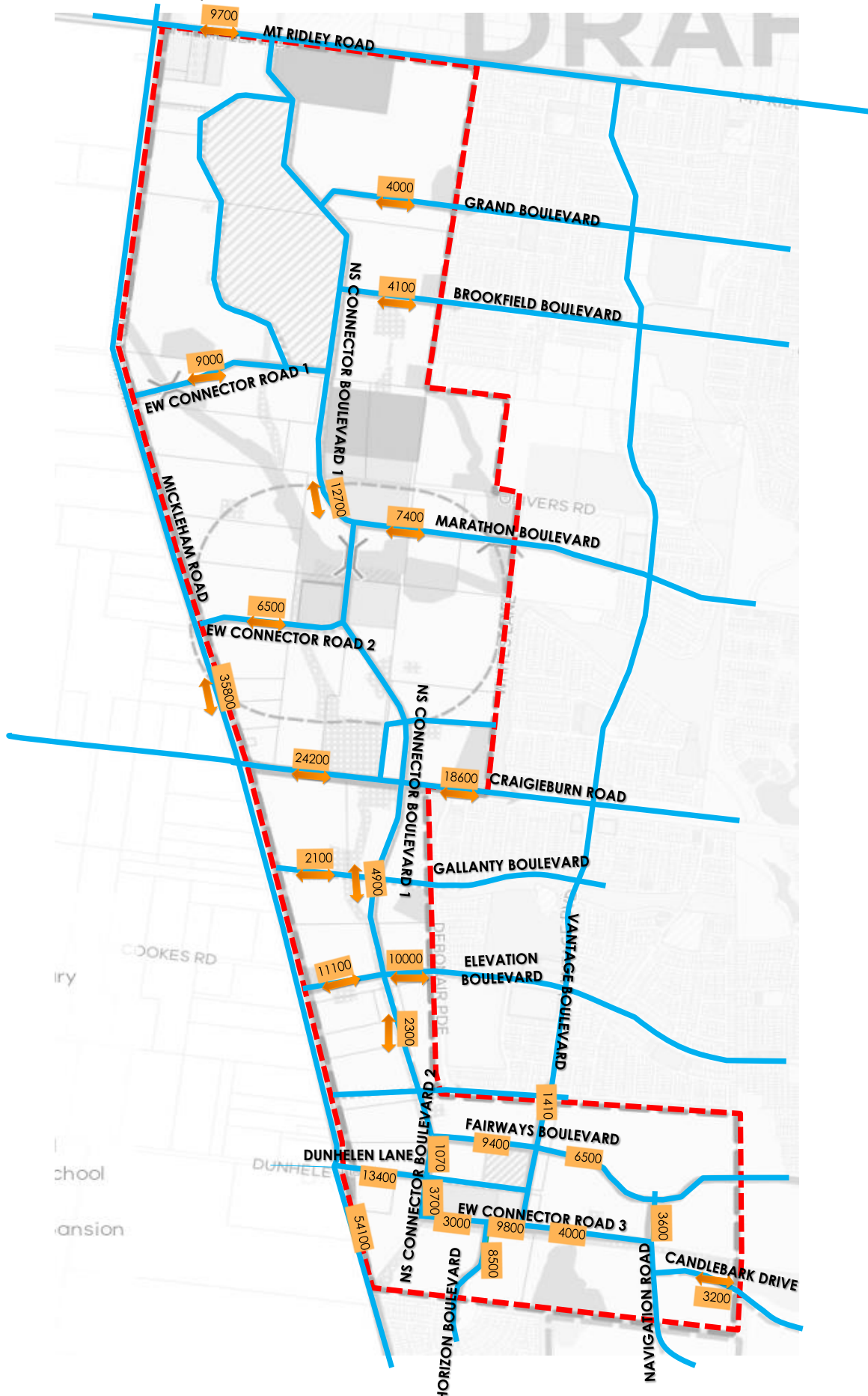
Generated Daily Volumes – Interim



Generated Daily Volumes – Ultimate



Resultant Daily Volumes – Interim



Resultant Daily Volumes – Ultimate

