

PLANNING AND ENVIRONMENT ACT 1987
WELLINGTON PLANNING SCHEME

This is the plan referred to in Clause 43.04 - Schedule 11 of Development Plan Overlay
and has been approved by Wellington Shire Council

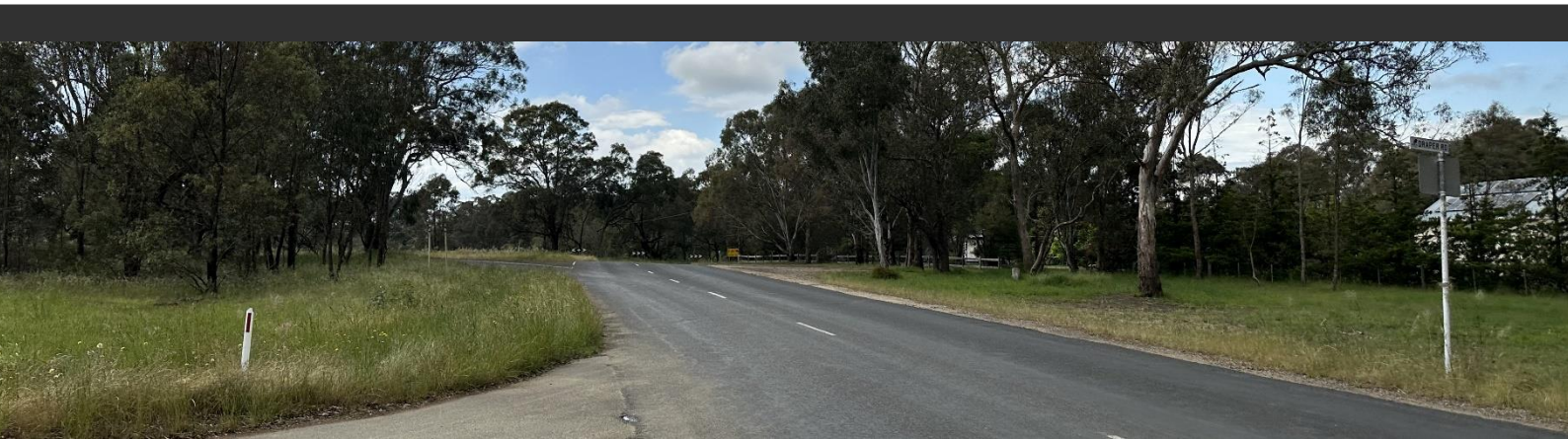
DATE: 25 September 2023

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STRATEGIC PLANNER

PAGE: 1 of 19

Development Plan Overlay 11

Transport Impact Assessment



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14 April 2023

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1 INTRODUCTION

onemilegrid has been requested by ██████████ to undertake a Transport Impact Assessment of the proposed Development Plan prepared in response Development Plan Overlay 11, in Heyfield.

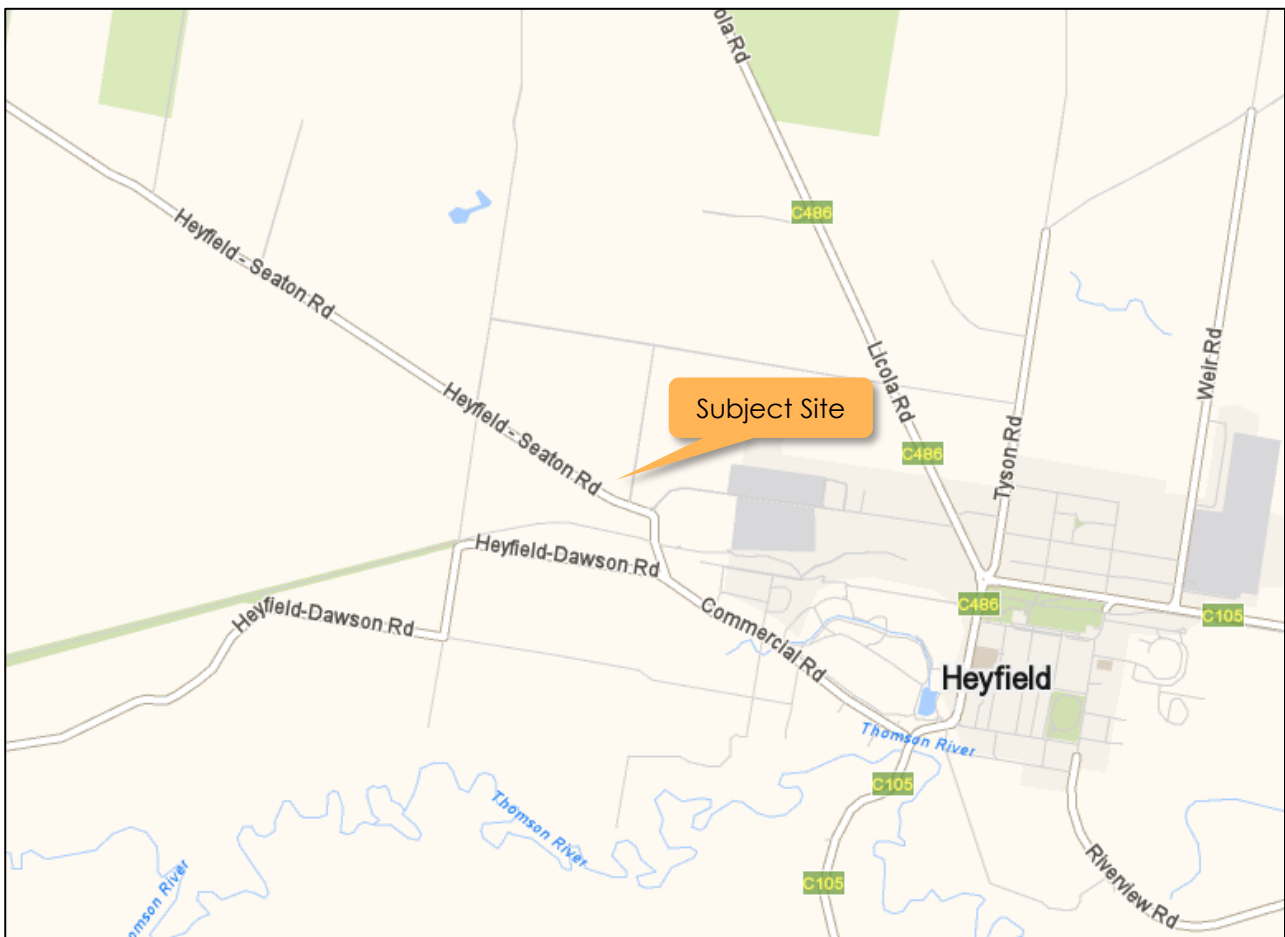
As part of this assessment the subject site has been inspected with due consideration of the development proposal, and relevant background reports have been reviewed.

2 EXISTING CONDITIONS

2.1 Site Location

The Development Plan area (the [subject site](#)) is located on the western side of the Heyfield township, as shown in Figure 1. The site has frontages to Heyfield-Seaton Road to the south, and Draper Road to the east.

Figure 1 Site Location



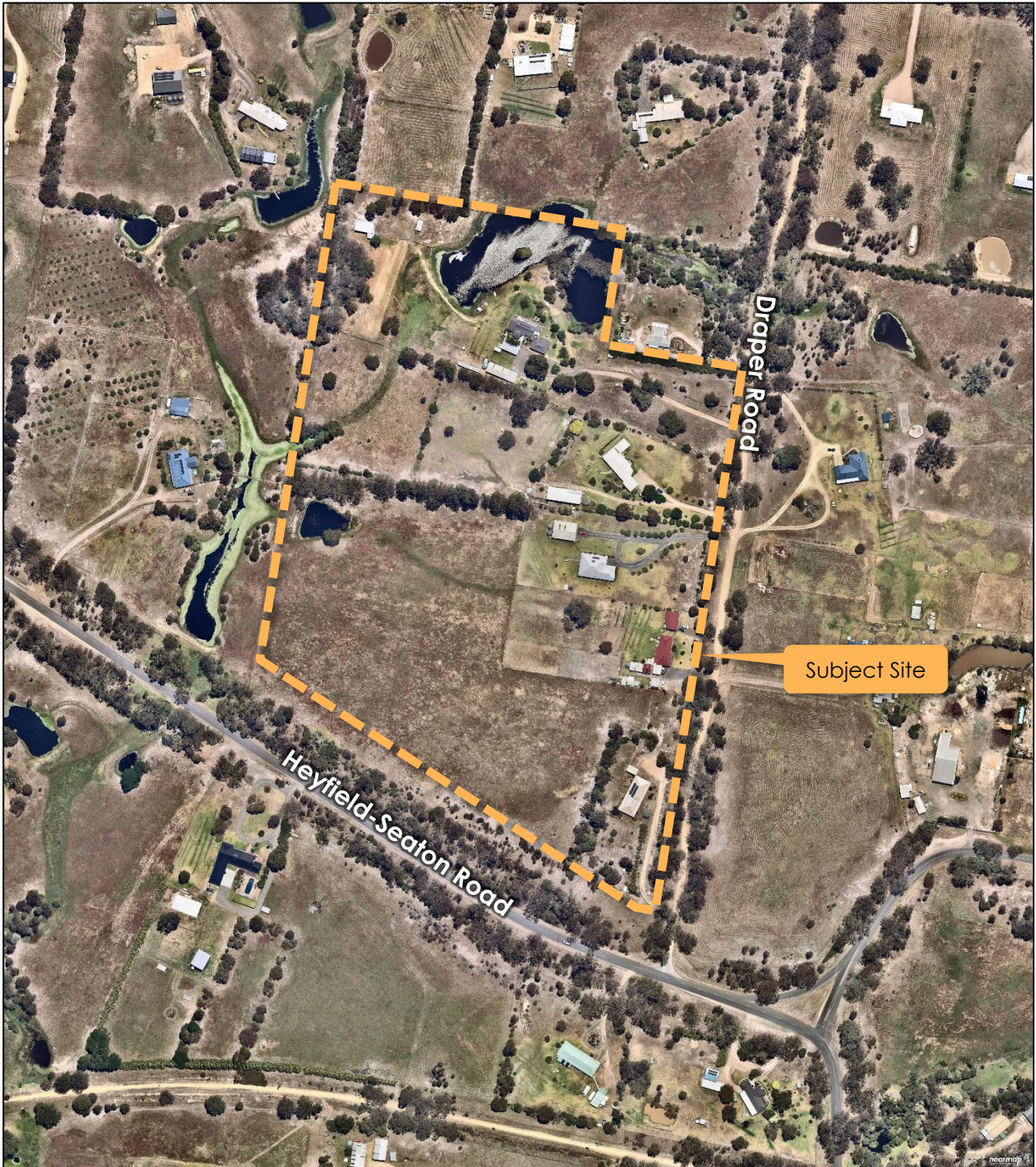
Copyright Whereis

The site is currently largely vacant, with five dwellings fronting Draper Road, and several dams across the properties.

Land use in the immediate vicinity of the site is similarly vacant, with a scattering of dwellings.

An aerial view of the subject site is provided in Figure 2.

Figure 2 Site Context (8 January 2023)

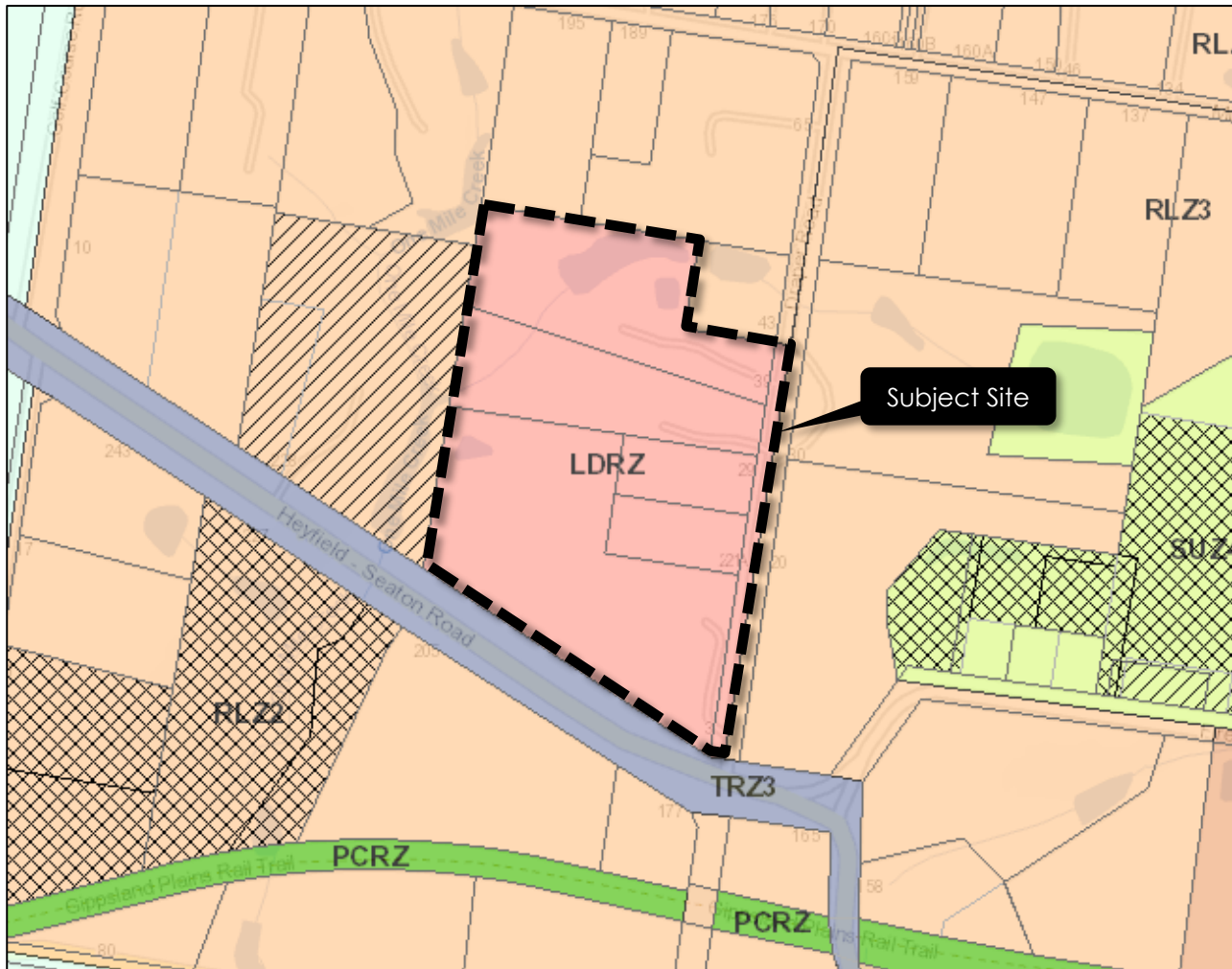


Copyright Nearmap

2.2 Planning Zones and Overlays

It is shown in Figure 3 that the site is located within a Low Density Residential Zone (LDRZ). Additionally, the site abuts Heyfield-Seaton Road, which is within a Transport Zone (TRZ3).

Figure 3 Planning Scheme Zones



A Development Plan overlay (DPO11) applies to the site. Relevant to this report, DPO11 states the following:

A traffic plan must be prepared and show:

- *A sealed road network design that minimises access points onto designated Category 1 or 2 roads; is based on a practical hierarchy of roads including safe intersections and pedestrian and bicycle infrastructure connecting with the existing movement network; and uses existing roads or road reserves when available.*
- *Details on any required upgrades to the road network being road widening, sealing, intersections, access points and other upgrades.*

2.3 Road Network

2.3.1 Heyfield-Seaton Road

Heyfield-Seaton Road is a local road generally aligned east-west, running between Seaton in the west and Heyfield in the east. Heyfield Seaton Road provides a single traffic lane in each direction adjacent to the site with gravel/grassed verges.

A 100km/h speed limit generally applies to Heyfield-Seaton Road in the vicinity of the site, transitioning to a 60km/h speed limit toward the east of the site frontage.

The cross-section of Heyfield-Seaton at the frontage of the site is shown in Figure 4.

Figure 4 Heyfield-Seaton Road, looking west



2.3.2 Draper Road

Draper Road is a local road generally aligned north-south, running between Mustons Lane in the north, and Heyfield-Seaton Road in the south. Draper Road provides an unsealed carriageway north of the Heyfield-Seaton Road intersection along the site frontage.

The cross-section of Draper Road at the frontage of the site is shown in Figure 5.

Figure 5 Draper Road, looking north from the Heyfield-Seaton Road intersection



3 PROPOSED DEVELOPMENT PLAN

3.1 General

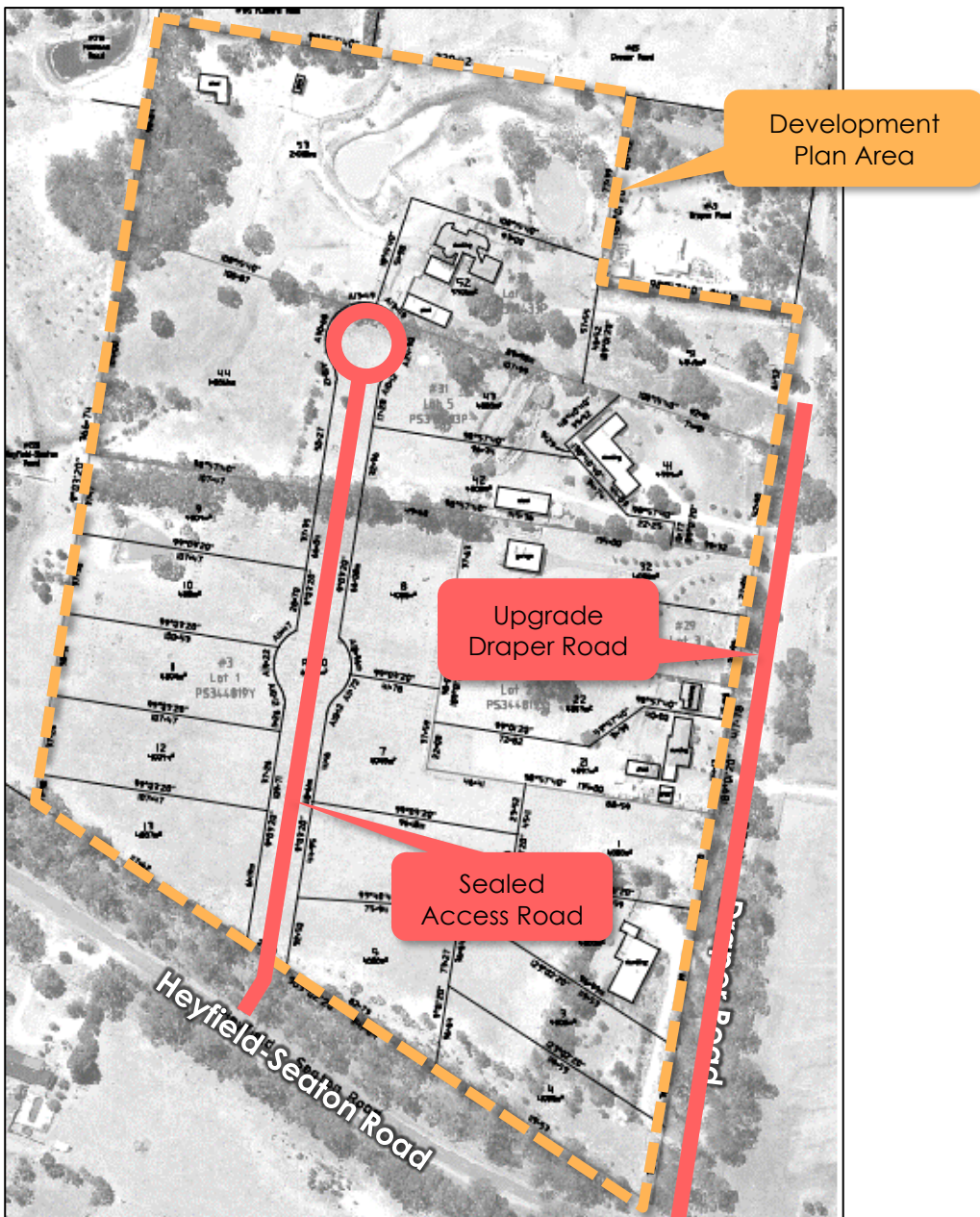
The proposed Development Plan is shown in Figure 1, which comprises 24 residential lots.

Vehicle access to 10 lots is proposed via Draper Road, reflecting an increase of 5 lots from existing conditions. Access to the remaining 14 lots is proposed via an internal road, with a new standard T-intersection proposed with Heyfield-Seaton Road. As part of the Development Plan, it is proposed to upgrade Draper Road along the site frontage to the northernmost crossover.

The internal road is proposed with a road reserve of 20 metres, extending almost 300 metres north from Heyfield-Seaton Road and terminating in a court bowl.

The site layout is shown in Figure 6. It is noted that the point to which Draper Road is shown to be upgraded is indicative, and will depend on crossover locations.

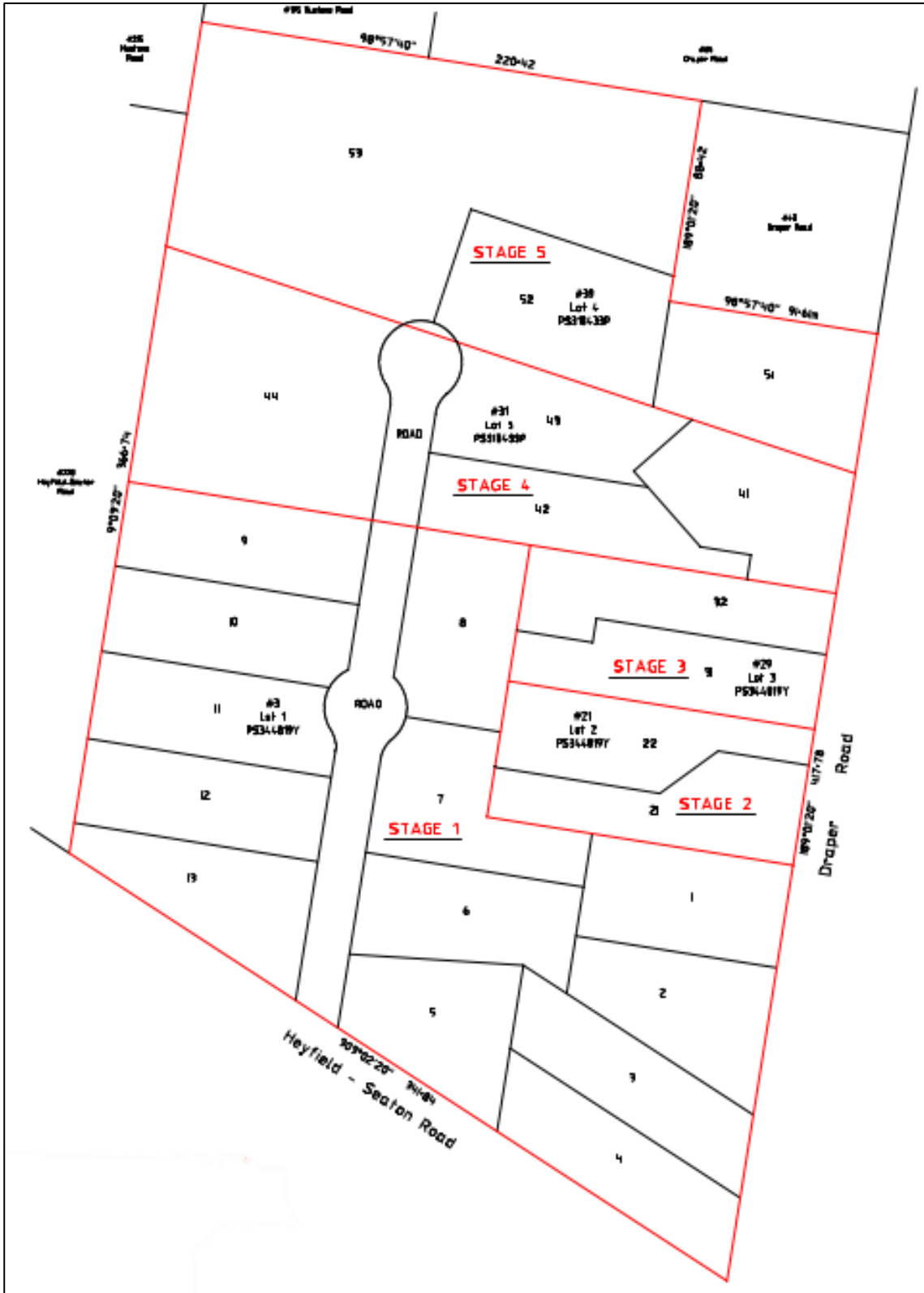
Figure 6 Subdivision Plan



3.2 Interim Access and Staging

The site is proposed to be developed across five Stages, as shown in Figure 7. As part of each Stage, Draper Road will be upgraded to the north-most crossover of that Stage.

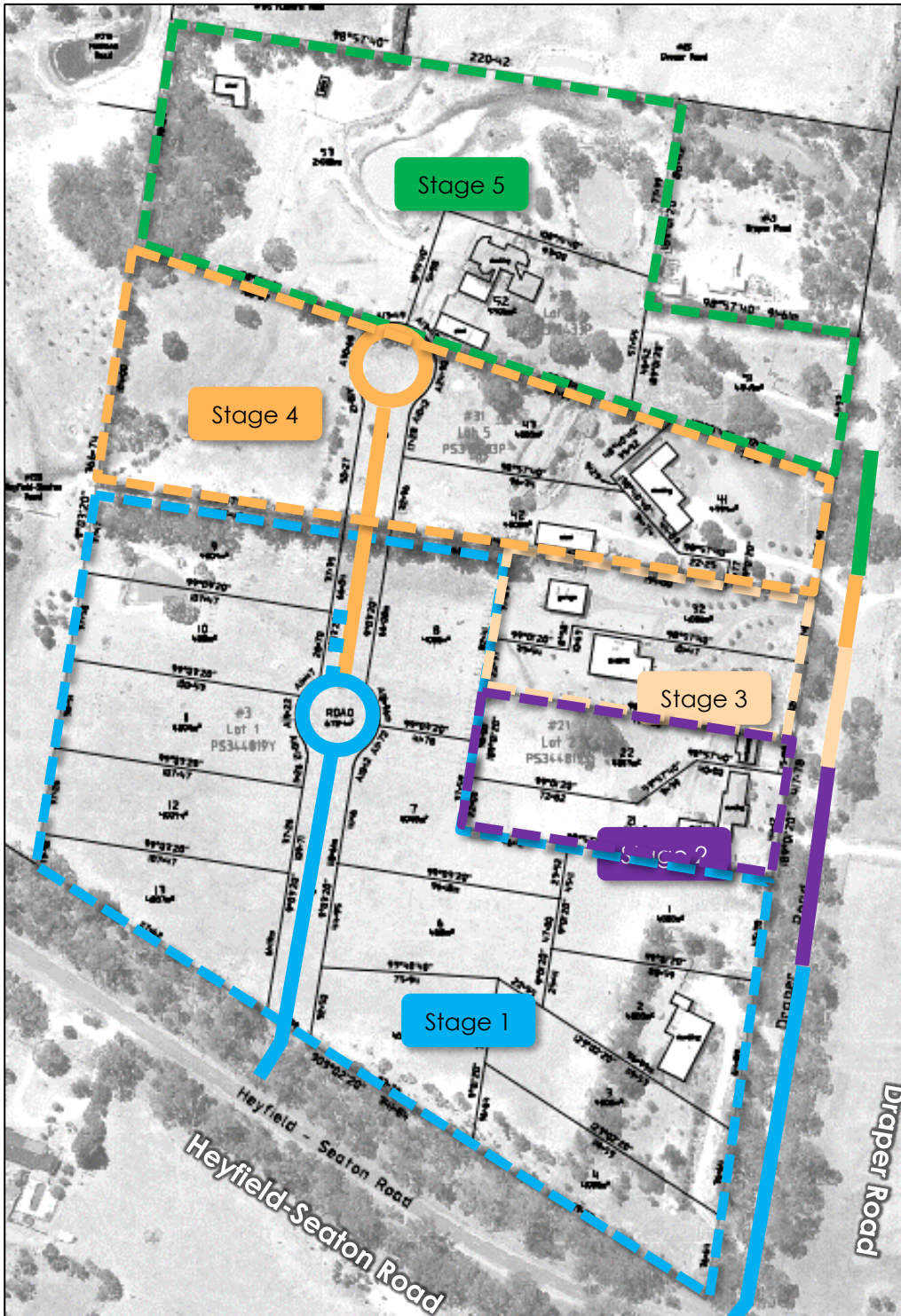
Figure 7 Proposed Staging



The proposed road construction and reconstruction for each stage is of the Development Plan is shown below. For Stage 1, a temporary court bowl is proposed along the new access road, and the rear-most lot (Lot 9) is proposed to be accessed via a short gravel road extending from the court bowl. Once Stage 4 is developed, Lot 9 will be accessed via a standard crossover from the extension of the internal road.

The Interim design is provided in Figure 8. It is reiterated that the point to which Draper Road is shown to be upgraded is indicative, and will depend on crossover locations.

Figure 8 Subdivision Plan – Interim Design



4 RESIDENTIAL SUBDIVISION DESIGN ASSESSMENT

4.1 General

The design of the proposed residential subdivision has been assessed in relation to DPO11, and the Infrastructure Design Manual.

4.2 Schedule 11 to Clause 43.04 Development Plan Overlay

As previously identified, the DPO11 states the following in relation to traffic:

A traffic plan must be prepared and show:

- *A sealed road network design that minimises access points onto designated Category 1 or 2 roads; is based on a practical hierarchy of roads including safe intersections and pedestrian and bicycle infrastructure connecting with the existing movement network; and uses existing roads or road reserves when available.*
- *Details on any required upgrades to the road network being road widening, sealing, intersections, access points and other upgrades.*

The proposed development of the site includes a new road and a single intersection with Heyfield-Seaton Road, which is offset from other existing intersections. The new road will be constructed in accordance with Council standards.

The application includes ten residential lots with access to Draper Road, inclusive of an existing dwelling. It is proposed to upgrade Draper Road along the site frontage up to the northernmost crossover, in accordance with Council standards.

4.3 Infrastructure Design Manual

The Infrastructure Design Manual (IDM) is a document prepared by numerous Victorian rural and regional Councils, including Wellington Shire Council, providing a set of consistent requirements and standards for the design and development of infrastructure.

The manual provides cross-sectional requirements for rural and urban roads, with the relevant requirements to the subject site reproduced in Table 1.

Table 1 IDM Road Cross-Sectional Requirements – Rural Roads

<i>Road Type</i>	<i>Max. Traffic Volumes (veh/day)</i>	<i>Min. Reserve</i>	<i>Min. Seal</i>	<i>Min. Shoulder</i>	<i>Kerbing</i>
Rural Living Access Road	1,000	20m	6.2m	1.5m	Nil
Rural Living Collector Road	6,000	25m	6.2m	1.5m	Nil
Rural Living or Low Density Residential Court Bowls	n/a	32m	9.5m	1.5m	n/a
Low Density Residential Access Road	1,000	20m	6.2m	1.5m	n/a

As outlined above, it is understood that Council have advised that a 20 metre road reserve is their preference for the internal road. This road reserve is in accordance with a Low Density Residential Access Road which is considered most applicable for site. The seal width and shoulder width will be determined during detailed design, and will be in accordance with the minimum requirements detailed above.

The court bowl has been designed with a reserve width of approximately 36 metres, in excess of that required by the IDM for a Low Density Residential Court Bowl. The seal width and shoulder width will be determined during detailed design, and will be in accordance with the minimum requirements detailed above.

The upgrade of Draper Road will be designed in accordance with the IDM for a Rural Living or Low Density Residential Access Road, providing a sealed width of 6.2 metres and shoulders over 1.5 metres.

The proposed cross-sections are therefore considered to be acceptable.

5 TRAFFIC

5.1 Traffic Generation

It is generally accepted that single dwellings on a lot in outer suburban areas may generate traffic at up to 10 vehicle trips per day (with 10% of these movements occurring in the respective peak hours), whilst in areas with good public transport, and for higher density dwellings, lower traffic generation rates are often recorded.

Recent studies undertaken for rural townships have identified lower vehicle generation rates than historically presented within the Infrastructure Design Manual, which suggests a rate of 10 trips per lot per day. This is expected with residents combining destinations within one trip (shopping on the way home from work etc.) due to the distance required to travel for trips and also the increasing number of services now offered online. **onemilegrid** have undertaken studies for residential estates within Drouin which identified daily traffic generation rates of 8 vehicle trips per day per lot.

Considering the size of the lots proposed, and the proximity of the site to the Heyfield town centre, it is anticipated that the proposed dwellings may generate up to 9 vehicle trips per lot per day, including 10% during the peak periods.

Application of the above traffic rates to the proposed development results in the projected daily traffic volumes detailed in Table 2.

Table 2 Projected Daily Traffic Generation

<i>Component</i>	<i>Number of Lots</i>	<i>Daily Traffic Generation</i>	<i>Peak Hour Traffic Generation</i>
Accessed via Internal Road	14	126	13
Accessed via Draper Road	10	90	9
Total	24	216	22

5.2 Traffic Distribution

Considering the location of the site, it is expected that vehicles will generally be travelling via Heyfield-Seaton Road to/from the Heyfield town centre.

For the purposes of this assessment, the following directional splits will be adopted:

- AM peak hour: 75 % outbound, 25 % inbound; and
- PM peak hour: 40 % outbound, 60 % inbound.

The traffic generation is summarised in Table 3 and Figure 9.

Table 3 Projected Peak Hour Traffic Generation

<i>Component</i>	<i>Peak Hour</i>	<i>Inbound</i>	<i>Outbound</i>	<i>Total</i>
Accessed via Internal Road	AM Peak	3	10	13
	PM Peak	8	5	13
Accessed via Draper Road	AM Peak	2	7	9
	PM Peak	5	4	9

5.3 Traffic Impact

5.3.1 Daily Traffic Volumes

The IDM states that an Access Road can accommodate up to 1,000 vehicles per day. The proposed development is expected to generate 126 daily traffic movements along the internal road, and 90 daily traffic movements along Draper Road. This traffic generation is well within the capacities of these roads, and therefore considered acceptable.

5.3.2 Proposed Intersection Capacity

5.3.2.1 General

Utilising the peak hour traffic volume projections above and the design principals of Austroads Guide to Road Design, **onemilegrid** has undertaken a review of the proposed new intersection with Heyfield-Seaton Road and provides the following assessments.

5.3.2.2 Proposed Intersection Alignment

Heyfield-Seaton Road includes a wide road reserve which will allow the new road to the site to intersect with the main road at a perpendicular angle. The intersection alignment ensures that the roads are able to intersect at an angle between 70 and 110 degrees, in accordance with the Infrastructure Design Manual.

This intersection alignment assists with the angle of vehicle turning movements and driver sight lines.

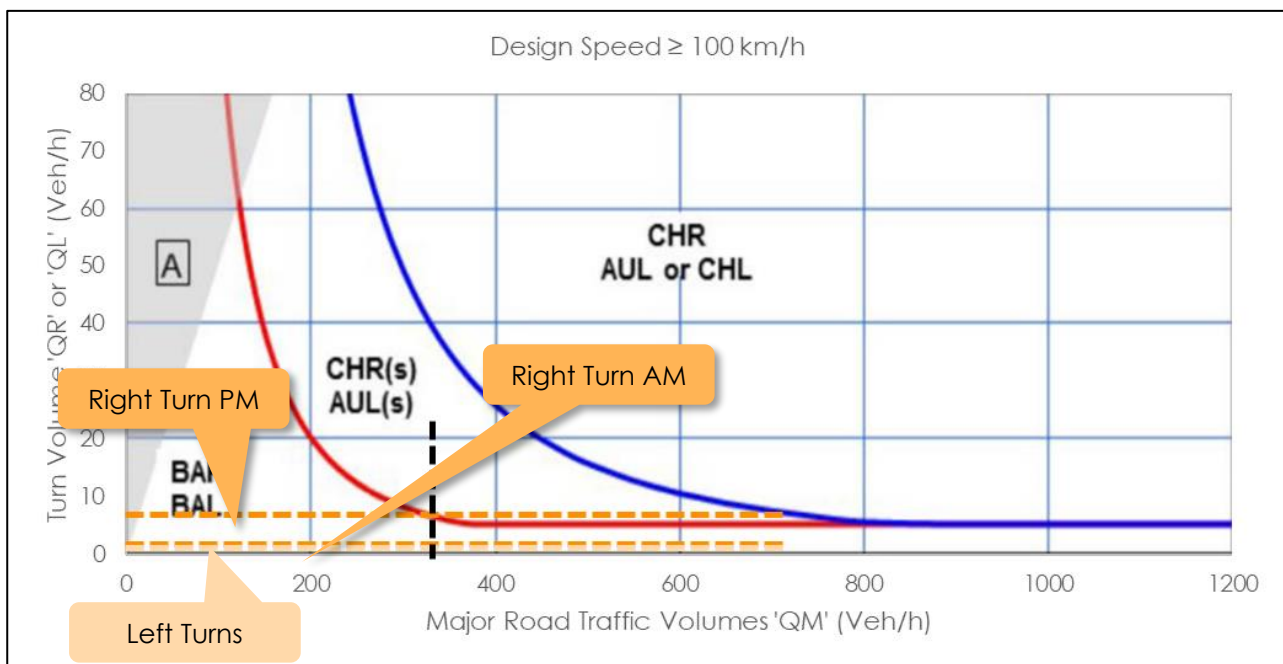
5.3.2.3 Turn Lane Warrants

In determining an appropriate intersection configuration, the anticipated post-development peak hour volumes were assessed against the turn lane treatment warrants specified in the *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings*.

A review of the post-development traffic volumes against the Austroads turn lane warrants suggests that the site does not warrant channelised or auxiliary turn lane treatments such as a short auxiliary left-turn lane or a short channelised right-turn lane. Such turning treatments would not be required below approximately 330 two-way vehicle movements along Heyfield-Seaton Road, as demonstrated in Figure 10.

Other T-intersections in the vicinity also don't include additional turn lane treatments.

Figure 10 Turn Lane Warrants – Design Speed \geq 100km/h



5.3.2.4 Sight Distances

The Austroads Guide to Road Design part 4A: Unsignalised and Signalised Intersections includes requirements for the Safe Intersection Sight Distance (SISD) which is the minimum sight distance which should be provided on the major road at any intersection.

The site access is proposed approximately 80 metres from the speed sign which changes the westbound speed limit along the frontage of the site from 60km/h to 100km/h. As vehicles would only begin speeding up to reach 100km/h past the speed limit sign, a design speed of 80km/h is considered to be the appropriate speed for sight distances to the east.

Based on Table 3.2 of Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections, a SISD of 181 metres is required for a road with a design speed of 80 km/h (east approach), and a SISD of 248 metres is required for a road with a design speed of 100 km/h (west approach).

Sight distance was measured along Heyfield-Seaton Road for the left and right turns into the site and found to be unimpeded to the west, and available to approximately 180 metres to the east, with the roadway straight for approximately the first 120 metres required for sight distance.

Having inspected the site, **onemilegrid** staff found the roadside vegetation unkempt and overgrown. This should be maintained to ensure the required sight distance is kept available.

Based on the above, the available sight distance is considered appropriate for the proposed development.

5.3.2.5 Road Speed Limit

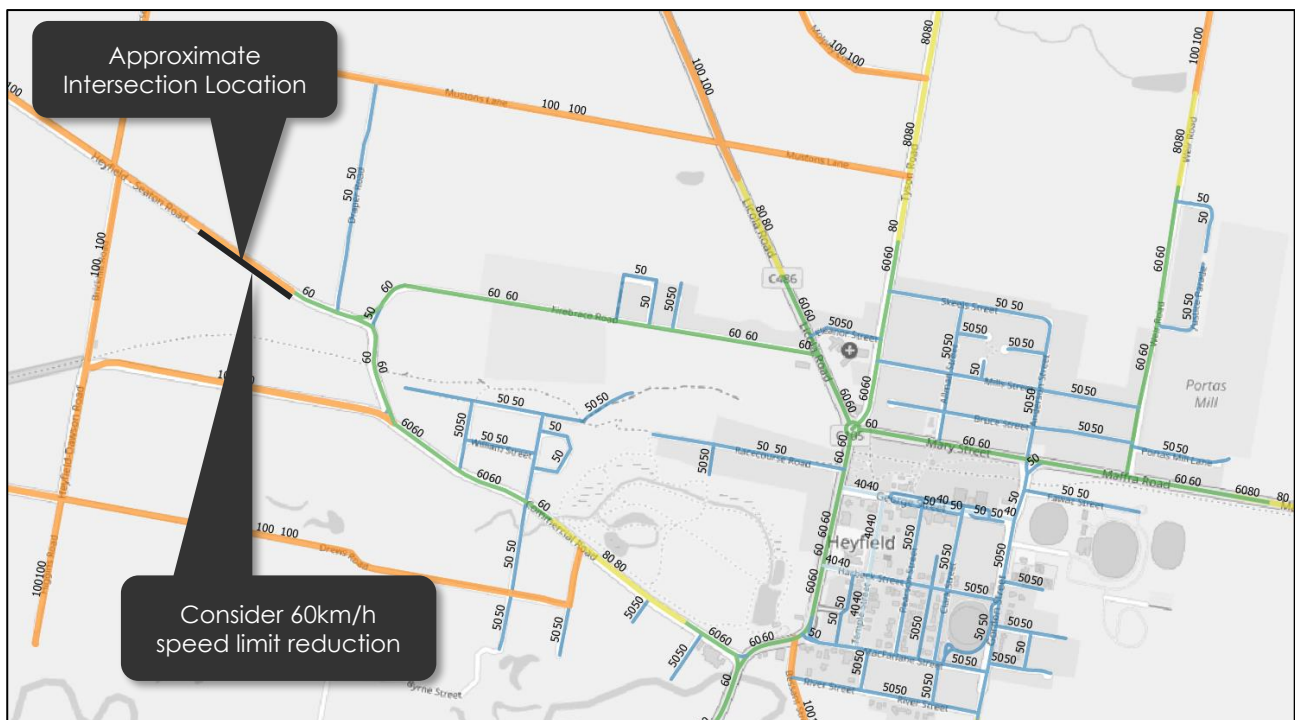
A review of speed limits in the area has been undertaken and detailed in Figure 11, which shows that on most key road approaches to Heyfield that speed limits include an 80km/h section between the 100km/h and 60km/h lengths. This transition speed limit change assists drivers to safely reach the signed speed limit.

It is understood that more recent common practice is to include signage warning drivers there is a 60km/h speed limit ahead to ensure they can decelerate safely.

With the proposed development of the site and extension of the Heyfield township, we note that there will be a merit for reviewing speed limits along Heyfield-Seaton Road. This could include an extension of the 60km/h limit section or as a minimum warning of the approaching 60km/h speed limit.

Considering the approvals required from various authorities, it is recommended that this exercise be undertaken between Council and Department of Transport and Planning (DTP) separate to the Development Plan approval or subsequent development.

Figure 11 Existing Heyfield Speed Limits



5.3.2.6 Proposed Intersection Summary

Based on the preceding assessments, the proposed new intersection with Heyfield-Seaton Road is considered appropriate, noting:

- The new road is able to intersect with Heyfield-Seaton Road at an angle between 70 and 110 degrees;
- The turn lane review suggests that auxiliary or channelised turn lane treatments are not warranted;
- A basic T-intersection treatment is consistent with other intersections in the area;
- Adequate intersection sight distances can be achieved; and
- Consideration may be given to a future review of speed limits along Heyfield-Seaton Road, however these should be undertaken separate to the Development Plan approval or subsequent development.

6 CONCLUSIONS

The proposed Development Plan contemplates the development of a residential subdivision comprising 24 residential lots. Vehicle access to 10 lots is proposed via Draper Road, with access to the remaining 14 lots proposed via an internal road, with a new standard T-intersection proposed with Heyfield-Seaton Road.

Considering the analysis presented above, it is concluded that:

- The subdivision road network has been designed in accordance with the Development Plan Overlay and the IDM; and
- Implementation of the Development Plan is expected to have a negligible impact on the surrounding road network, and is not considered sufficient to warrant any turn treatments at the internal road intersection with Heyfield-Seaton Road.