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Lot 9000 (500) Katharine Street – Robinson Grove Estate, Bellevue

Transport Impact Assessment

PREPARED FOR:
Satterley Property Group

October 2025

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1 Introduction and Background

This Transport Impact Assessment (TIA) has been prepared by Transcore on behalf of Satterley Property Group with respect to the proposed Phase 2 of Robinson Grove Estate residential structure plan located at Lot 9000 (500) Katharine Street, Bellevue in the Shire of Mundaring.

The subject site (Phase 2 of the structure plan) consists of two separate areas and abuts the Phase 1 boundary, which is currently under construction, to the west. The larger area is bounded by Wilkins Street to the north, Katharine Street to the east, the foreshore reserve to the south, and the Phase 1 boundary to the west. The smaller area is configured as an extension leg of the south-western portion of Phase 1 and covers the remaining developable area between the Phase 1 boundary and the Parks and Recreation Reserve boundary to the further south. **Figure 1** shows the location of the subject site.

The location of the subject site in its regional context within the Local Planning Scheme is illustrated in **Figure 2**. The subject site is zoned as “Development Zone” in the Local Planning Scheme and “Urban” in MRS. **Figure 3** and **Figure 4** show the locations of the subject site in the context of Shire of Mundaring Local Planning Scheme No. 4.

In accordance with the WAPC’s *“Transport Impact Assessment Guidelines, Volume 4 – Individual Developments (2016)”*, a Transport Impact Assessment is required for developments that generate more than 100 vehicles per hour. Accordingly, a *Transport Impact Assessment* is warranted in this case. Therefore, this TIA will estimate the trip generation and distribution of the Phase 2 structure plan and will assess the impact of the proposed development traffic on the surrounding road networks. For the purpose of traffic modelling and analysis, the traffic generation from the Phase 1 of Robinson Grove Estate will also incorporate into the assessment.

The key issue that will be addressed in this report include the traffic generation of the Phase 2 structure plan, the resultant traffic pattern on the surrounding road network and capacity analysis of the intersections of Henkin Street with Wilkins Street and Clayton Street.

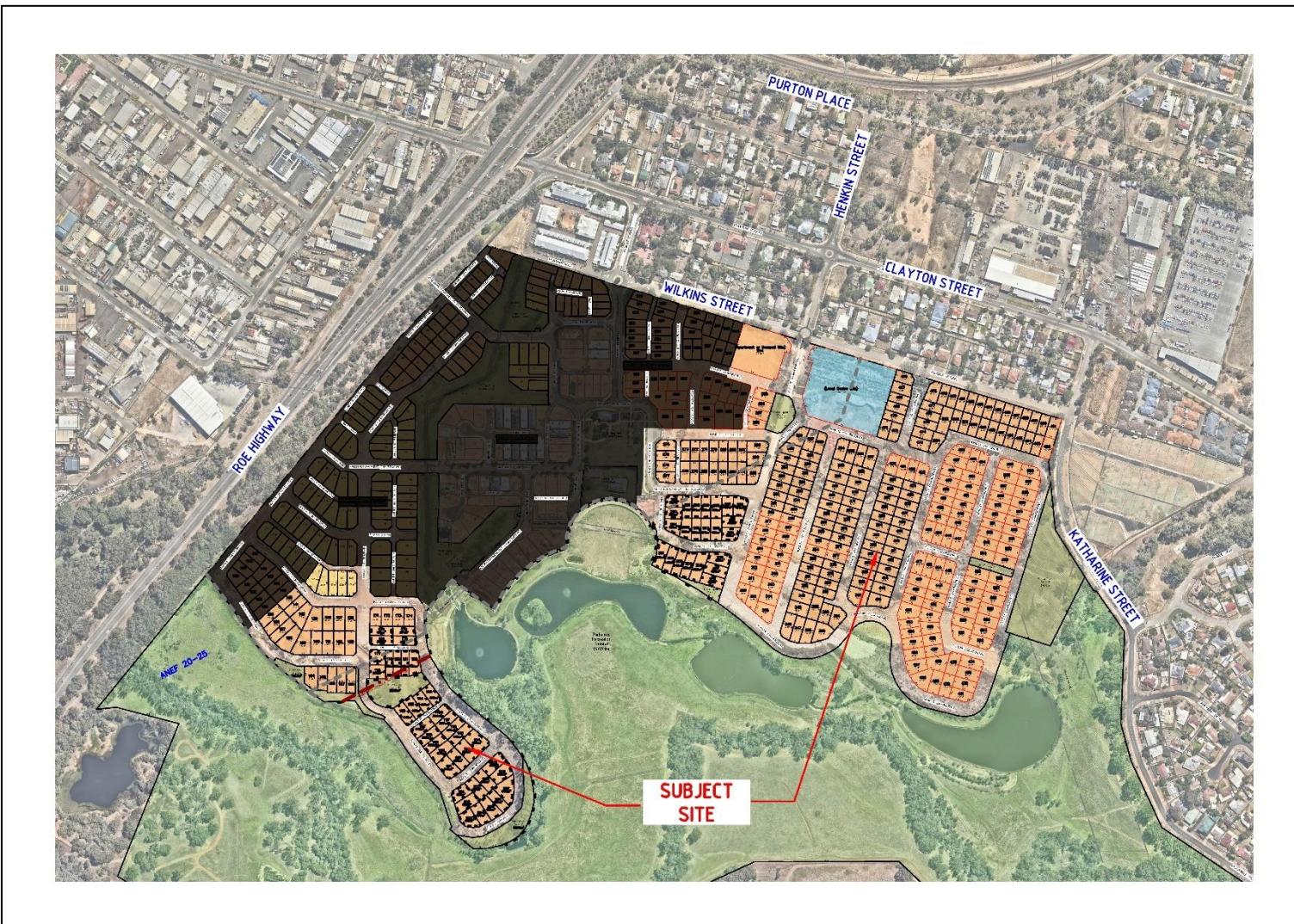


Figure 1: Location of the subject site

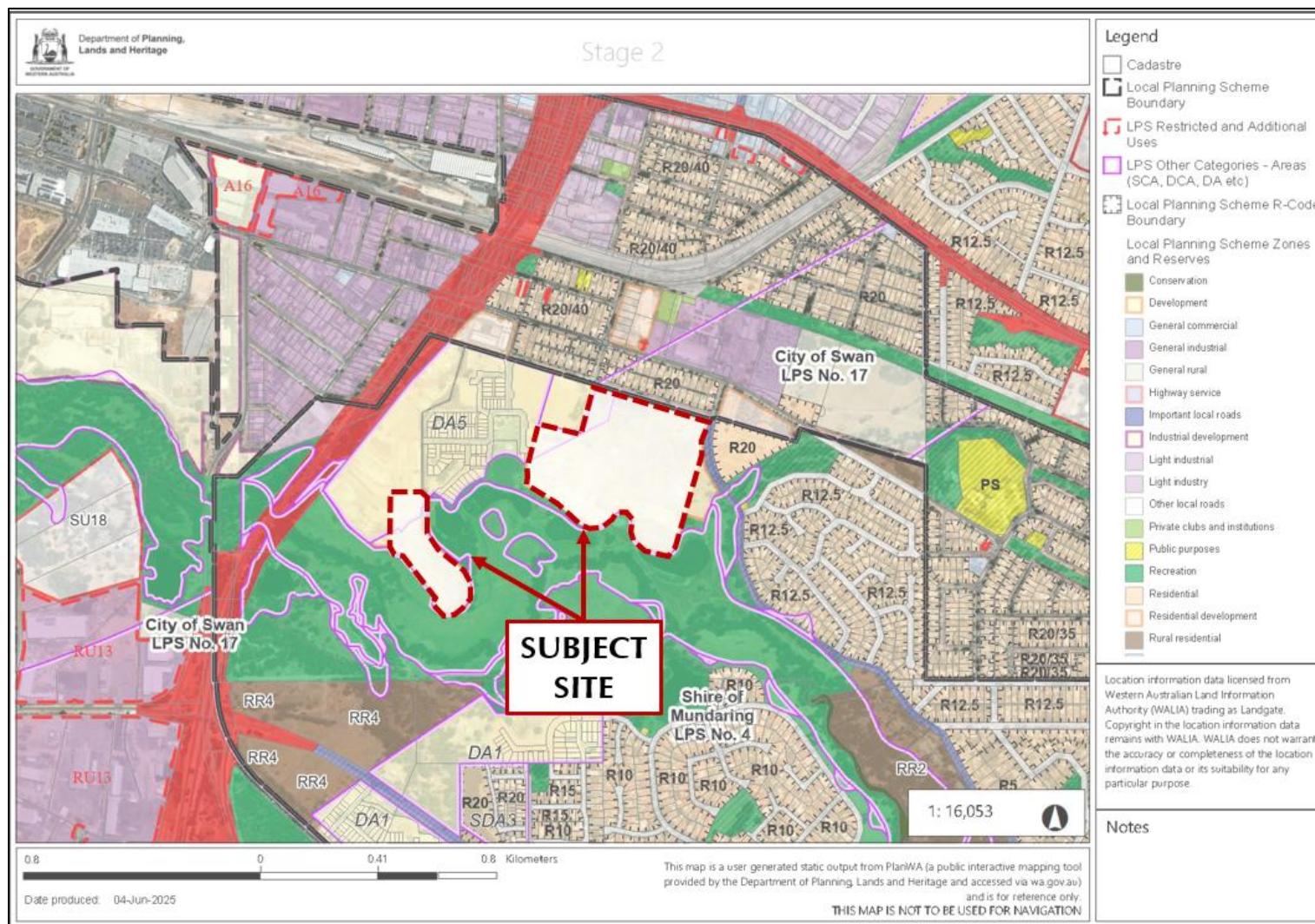


Figure 2. Subject site location under Local Planning Schemes (LPS) map (source: DPLH)

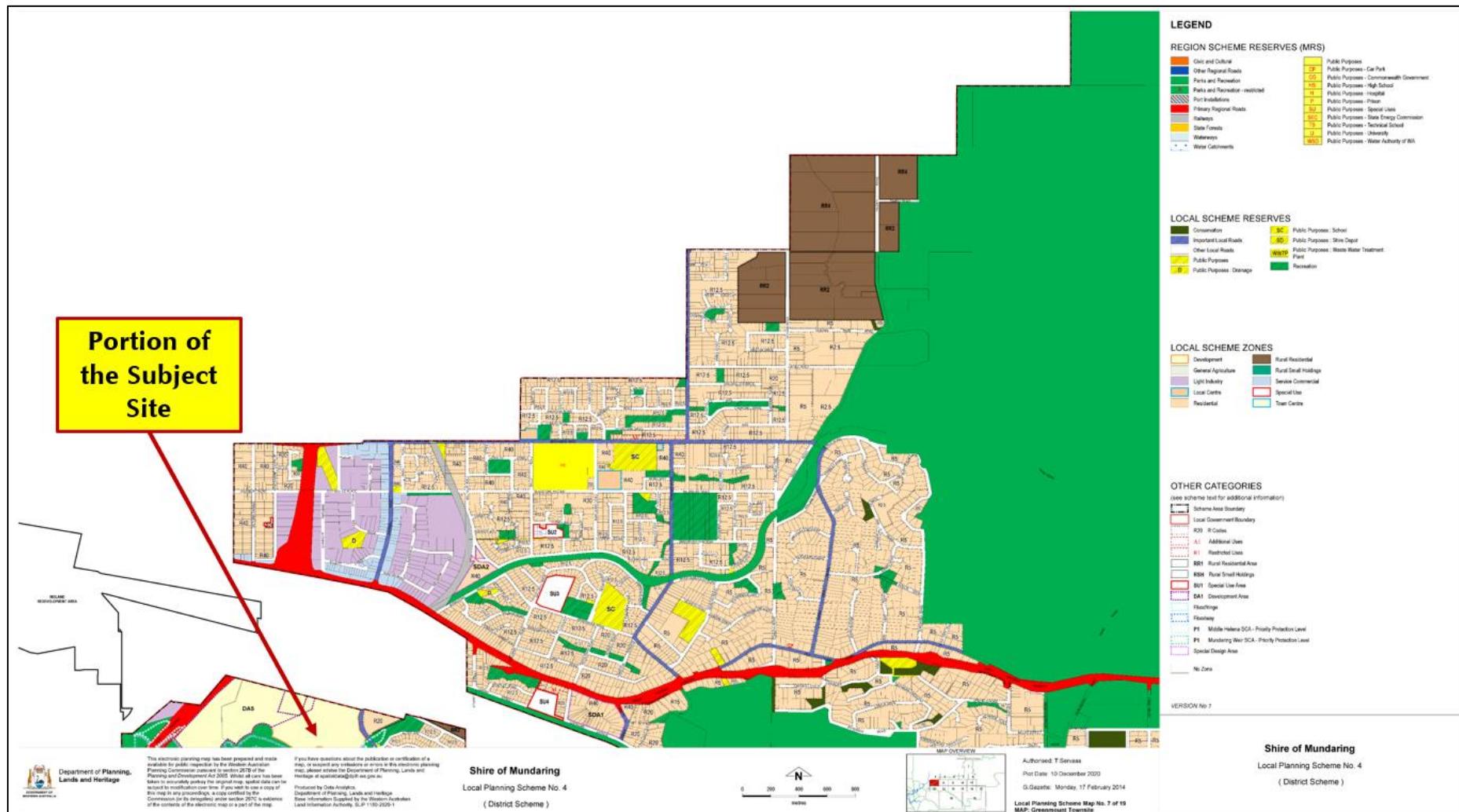


Figure 3. Location of the subject site in LPS No. 2: North (source: Shire of Mundaring)

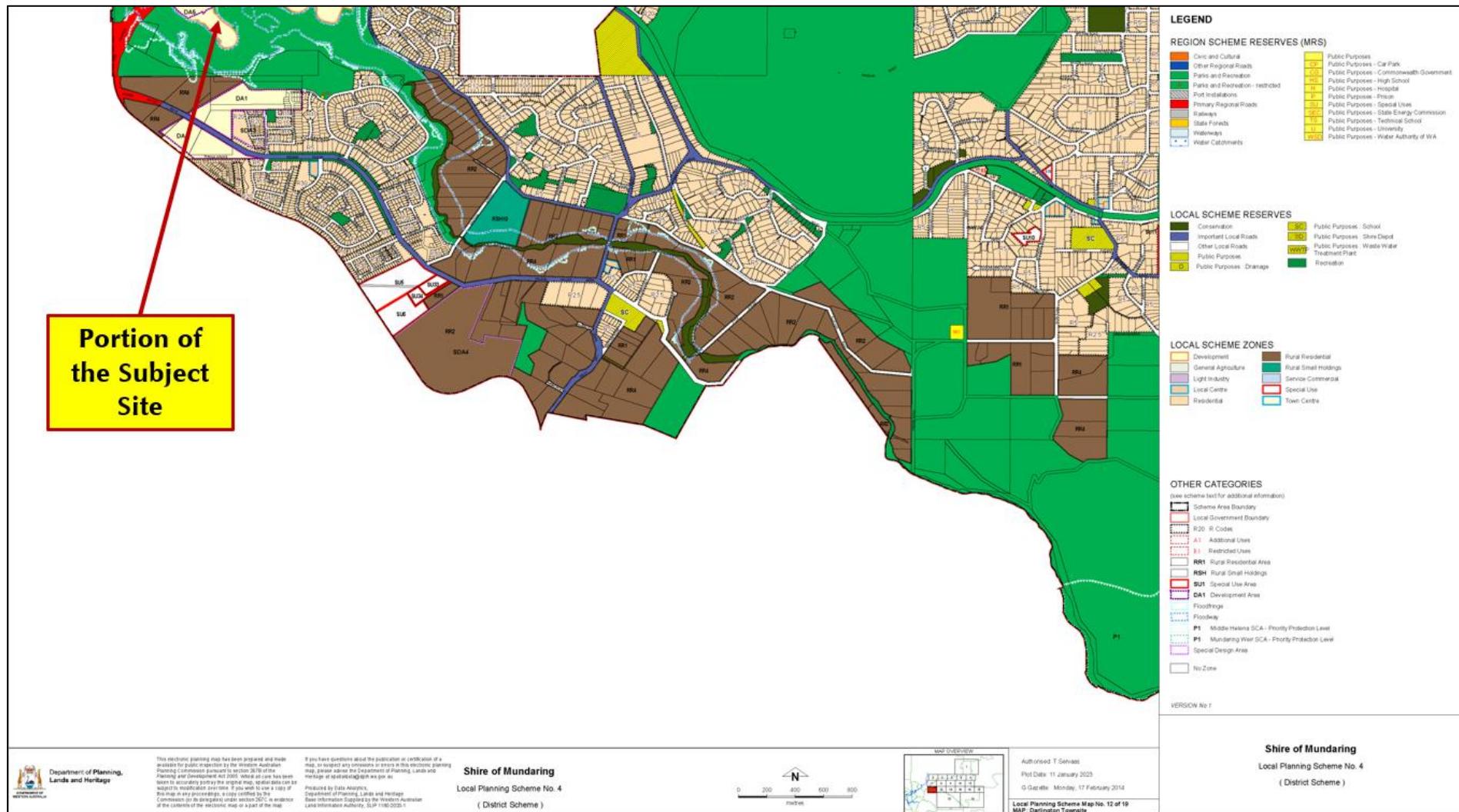


Figure 4: Location of the subject site in LPS No. 2: South (source: Shire of Mundaring)

2 Proposed Structure Plan

The proposed Phase 2 structure plan of Robinson Grove Estate comprises the following elements:

- Total residential lot yield of 345 residential lots, staging will proceed from west to east, continuing from Phase 1;
- One local retail/commercial centre lot with a total of 1.016 ha at the southeast corner of the proposed roundabout intersection of Wilkins Street/ Henkin Street/ New Road, and;
- One apartment or grouped site with a total area of 3,941m² at the southwest corner of the proposed roundabout intersection of Wilkins Street/ Henkin Street/ New Road.

The lot summary of the proposed Phase 2 of the structure plan is detailed in **Table 1**. It is also understood that the local centre layout warrants further concept design investigation.

Table 1. Lot areas schedule

Size	Average Size	No. of Lots
320m ² - 449m ²	377m ²	272
450m ² - 499m ²	465m ²	54
500m ² - 549m ²	526m ²	10
550m ² - 599m ²	567m ²	3
600m ² - 699m ²	629m ²	6
Total Number of Lots		345

The layout of the proposed structure plan, prepared by Taylor Burrel Barnett Town Planning & Design is shown in **Appendix A**.

3 Existing Situation

3.1 Existing Land Use

The subject site was previously gazetted as Rural and is now zoned as "Urban". The Phase 2 of the structure plan consists of two separate areas. The larger area of the Phase 2 structure plan is bounded by Wilkins Street to the north, Katharine Street to the east, the foreshore reserve to the south, and the Phase 1 boundary to the west. The smaller area is configured as an extension leg of the south-western portion of Phase 1 and covers the remaining developable area between the Phase 1 boundary and the Parks and Recreation Reserve boundary to the further south.

The subject site is currently vacant land, and there are currently ongoing residential developments from Phase 1 to the west and established residential properties to the north and east of the subject site, as shown in [Figure 1](#).

There are several schools situated in the locality, including Clayton View Primary School and Swan View Senior High School. Further, Curtin University Midland Campus and St John of God Midland Hospital are also located approximately 2.2km from the subject site. Additionally, Midland Gate Shopping Centre and Centrepoint Midland Shopping Centre are also located within 3.0km from the subject site.

3.2 Existing Road Network

Clayton Street, in the vicinity of the subject site is constructed as approximately 7.0m wide, two-lane divided road. Pedestrian footpaths and designated cycle lanes are available on both sides of the road. Refer to [Figure 5](#) for more details.

Clayton Street is classified as a *Distributor B* in the *Main Roads WA Functional Road Hierarchy* and operates under the posted speed limit of 60km/h in this area. Traffic count data obtained from Main Roads WA indicates that Clayton Street (west of Katharine Street) carried 7,033 vehicles per day (vpd) in 2023/24. The morning and afternoon peaks were recorded between 8:00am to 9:00am and 3:00pm to 4:00pm with a total of 558vph and 556vph respectively.



Figure 5. Eastbound view along Clayton Street

Wilkins Street, in the immediate vicinity of the subject site is constructed as approximately 7.5m wide, single-carriageway, two-lane undivided road, with pedestrian footpath on the northern side of the road. Refer to **Figure 6** for more details. Wilkins Street is classified as an Access Road in the *Main Roads WA Functional Road Hierarchy* and operates under the default speed limit of 50km/h.



Figure 6: Eastbound view along Wilkins Street

Katharine Street, in the vicinity of the subject site, is constructed as approximately 7.5m wide, single carriageway, two-lane divided road. Pedestrian footpath is available on eastern side of the road in the vicinity. Katharine Street is classified as a *Distributor B Road* in the *Main Roads WA Functional Road Hierarchy* and operates under the speed limit of 60km/h in the vicinity of the subject site. Refer to **Figure 7** for more details.



Figure 7: Southbound view along Katharine Street

Henkin Street, in the immediate vicinity of the subject site, is also constructed as a single carriageway, two-lane undivided road with a pedestrian footpath on eastern side of the road. Please refer to **Figure 8** for more details. Henkin Street is also classified as a *Local Road* in the *Main Roads WA Functional Road Hierarchy* and operates under the default speed limit of 50km/h in the vicinity of the subject site. Henkin Street is a short road that connects Purton Place to its northern end and Wilkins Street to its southern end.



Figure 8. Southbound view along Henkin Street

Please refer to **Figure 9** for the road hierarchy of the surrounding road network, extracted from Main Roads WA.

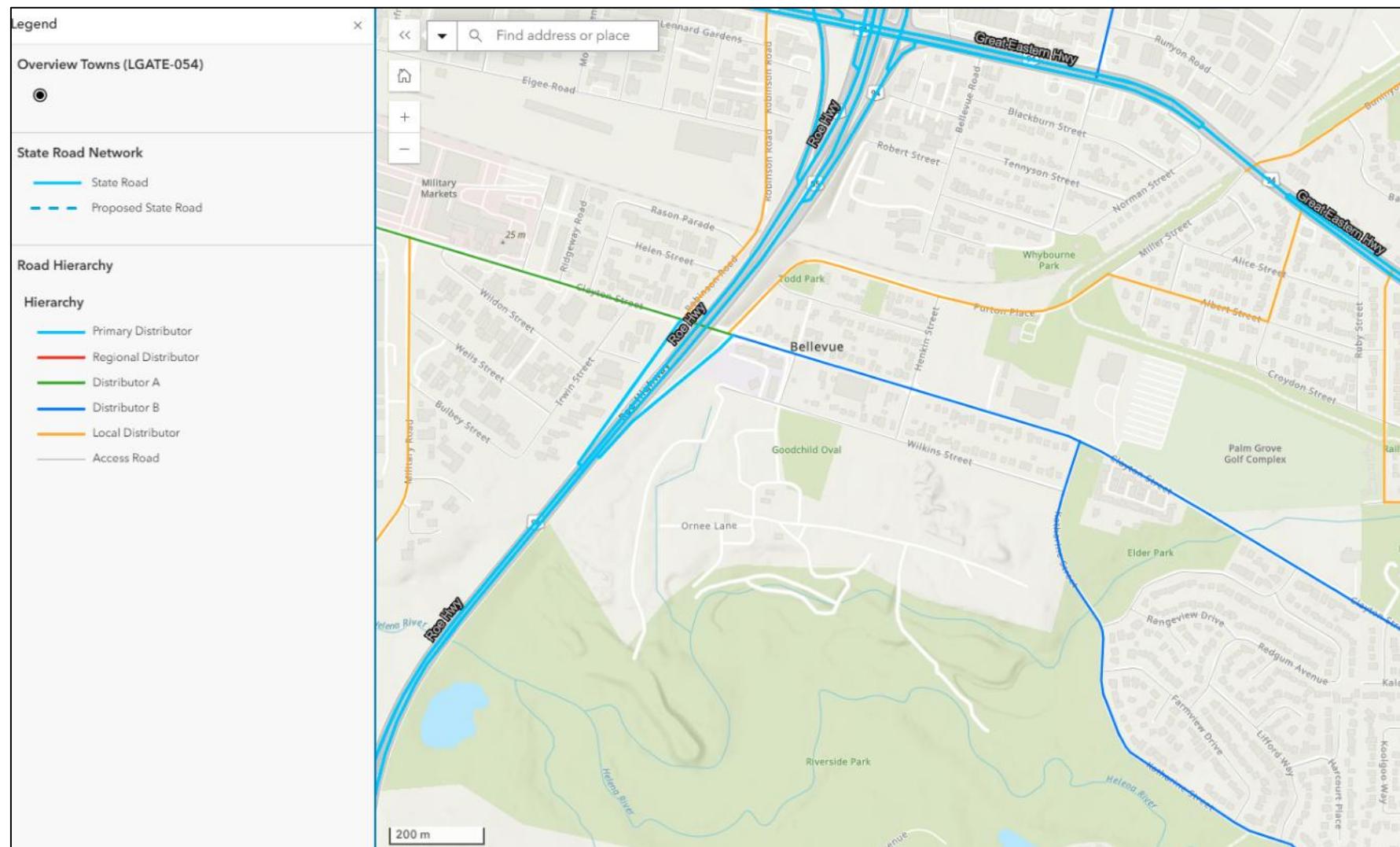


Figure 9. Existing road network hierarchy map (source: Main Roads WA)

3.3 Existing Traffic Volume on Roads

Transcore undertook peak hour video traffic surveys at the existing intersections of Henkin Street with Calyton Street and Wilkins Street, and the results are shown in **Figure 10**.

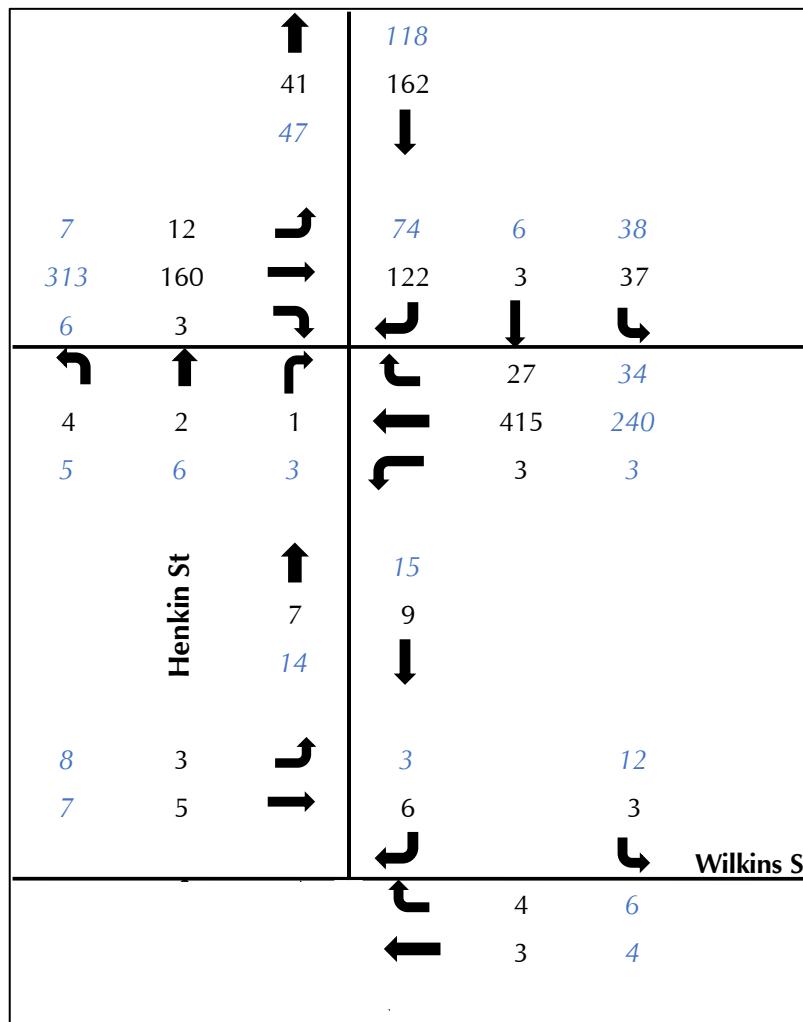


Figure 10: Existing peak hour traffic flows at intersections of Henkin Street with Clayton Street and Wilkins Street - AM/ PM

3.4 Crash Records

Information available on the Main Roads WA website indicates that zero crashes were recorded on Wilkins Street, fronting the subject site.

Further areas in the locality were investigated, and it is noted that a total of six crashes including both midblock and intersection crashes were reported along Clayton Street between Rason Parade and Katharine Street within the last five-year period, ending in December 2024. The details of the crashes in the locality are illustrated in **Figure 11**.

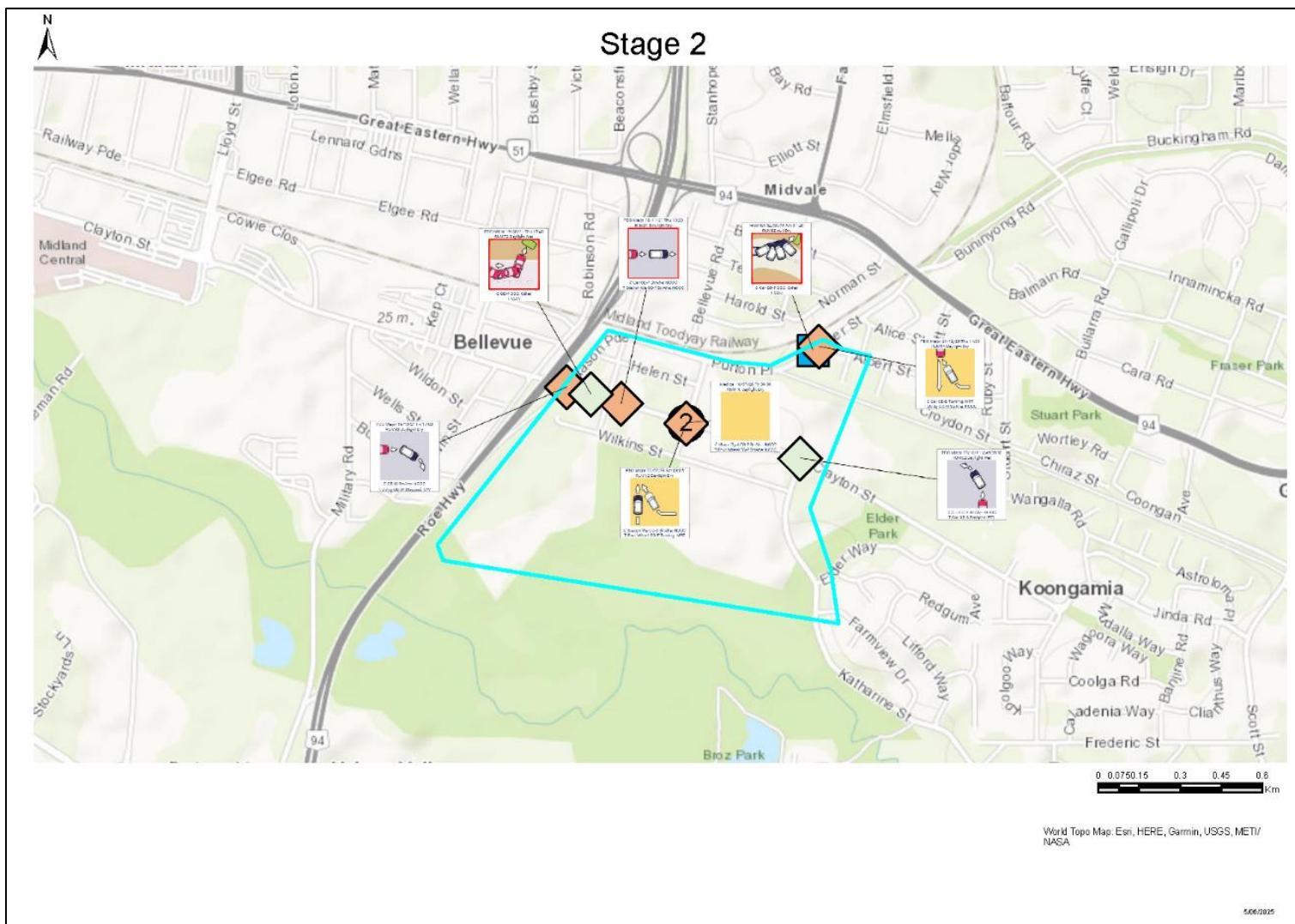


Figure 11. Crash map in the locality of the subject site

3.5 Public Transport Access

The closest existing Transperth bus route to the subject site is route 322 which provides connection to Midland Train Station and travels along Clayton Street, as shown in **Figure 12**. The nearest bus stop is available on Clayton Street, approximately 150m from the subject site (measured from the intersection of Wilkins Street and Henkin Street).

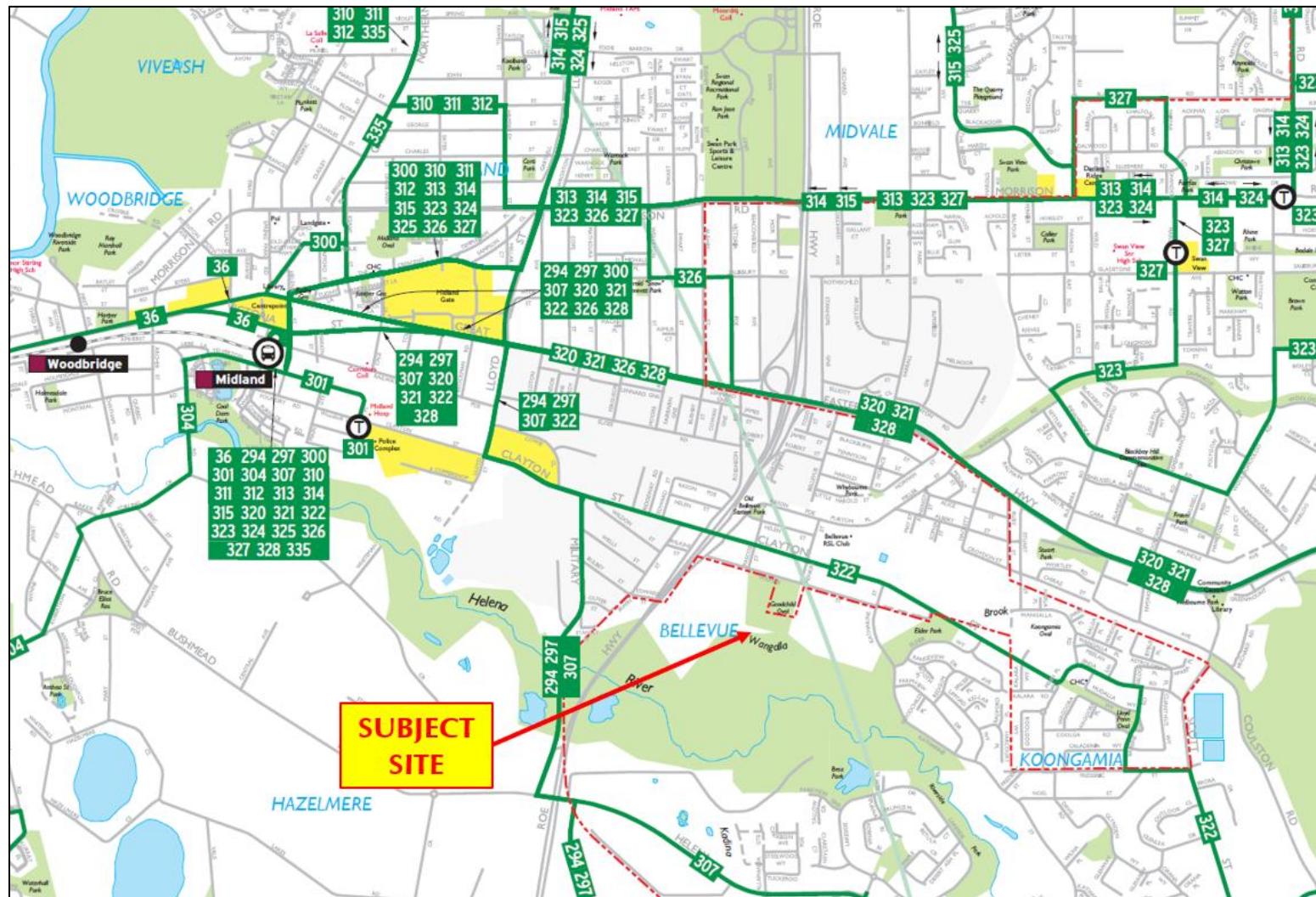


Figure 12. Existing bus route in the locality

3.6 Pedestrian and Cyclist Facilities

Pedestrian access to the subject site is available via the existing external footpaths on the Wilkins Street, Henkin Street and Clayton Street. Further, pedestrian crossing facilities with tactiles and pram ramps are also provided at the roundabout intersection of Clayton Street and Henkin Street.

According to the current Department of Transport's *Swan and Stirling Comprehensive Bike Map*, the existing bike path network within the locality of the subject site is classified as "Good Road Riding Network" on Wilkins Street and Pascoe Street, "Perth Bicycle Network (PBN) with continuous signed routes" on Katharine Street and "Bicycle Lanes or Sealed Shoulder Either Side" along Clayton Street. The Perth Bicycle Network Map in the locality of the subject site is illustrated in **Figure 13**, and it shows the cyclist connectivity in the vicinity of the subject site.

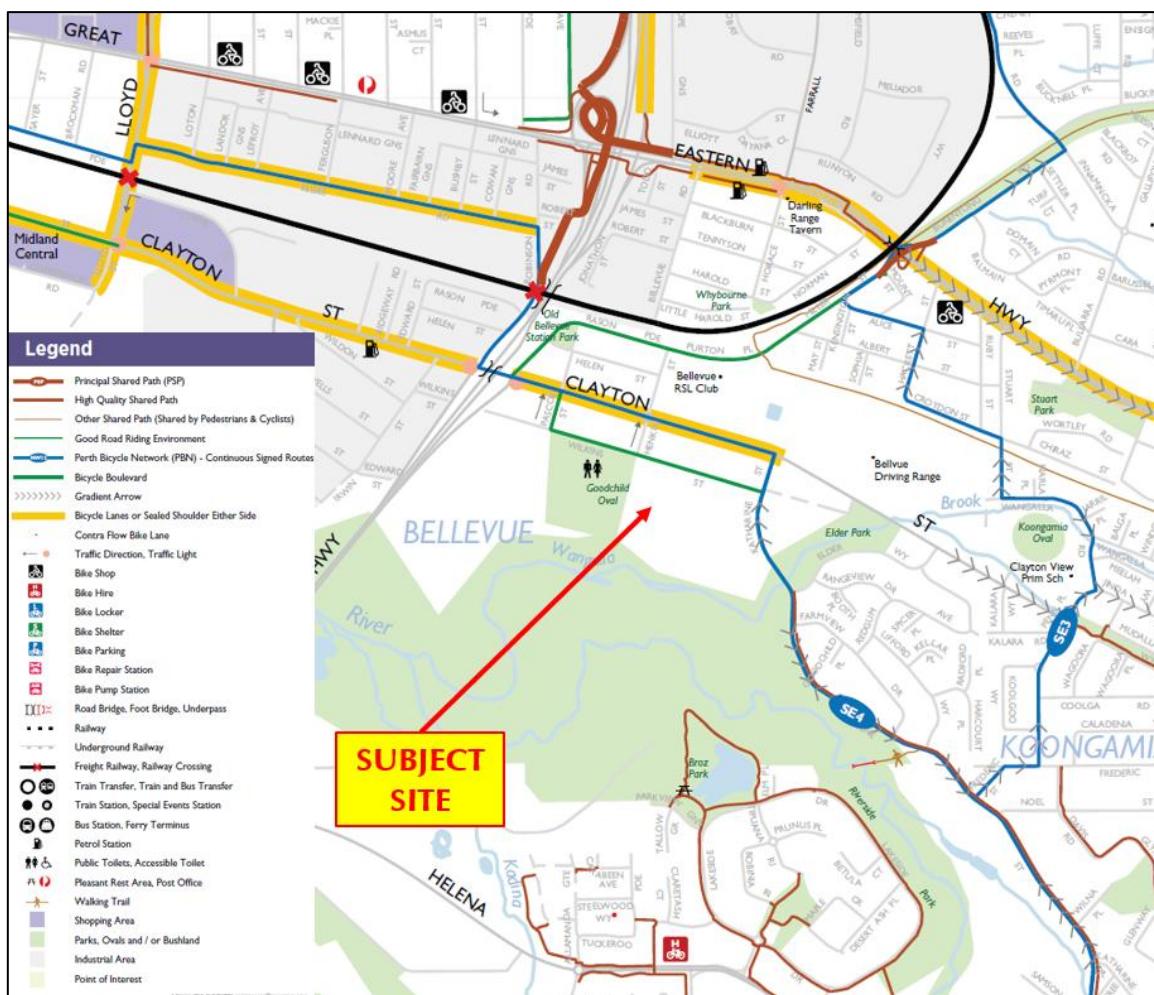


Figure 13. Bike map in the locality from Swan and Stirling Comprehensive Bike Map (source: Department of Transport)

4 Changes to Surrounding Transport Networks

As part of the development proposal, two new intersections are planned along Wilkins Street to facilitate essential access for the proposed Phase 2 Structure Plan. A key component of this upgrade includes the construction of a new roundabout at the intersection of Wilkins Street and Henkin Street. This roundabout is intended to improve traffic circulation and enhance safety at this major access location for the subject site (Phase 2). These infrastructure improvements are vital to supporting the anticipated increase in traffic volumes associated with the expanded development area and to ensuring effective integration with the existing road network.

In addition, it is understood that a new road, referred to as "Park Road," is proposed to the south of the subject site. This road is expected to connect Katharine Street with the proposed Helena River Parkway Road/Helena Valley Drive, providing access to future parks and recreational areas located on the southern side of the Helena River.

Based on the traffic assessment undertaken as part of this report, which accounts for traffic generated by both the subject site (Phase 2) and the earlier Phase 1 development, the majority of Phase 1 traffic is expected to access the external road network (Clayton Street) via Pascoe Street, while Phase 2 traffic will primarily utilise Henkin Street via Wilkins Street to access Clayton Street. This distribution has been modelled to assess the performance of key intersections, including the existing roundabout intersection at Clayton Street/Henkin Street and the proposed upgraded roundabout intersection at Henkin Street/Wilkins Street. The assessment indicates that both intersections will operate satisfactorily with the projected traffic volumes, confirming that the road network can adequately accommodate the demands of the proposed structure plan.

As a result, while the proposed Park Road would contribute to network connectivity, particularly by offering an additional emergency access route and improving overall linkage between the structure plan area and Helena Valley Road, its absence does not significantly affect traffic distribution or the performance of the surrounding road network. Therefore, Park Road is not considered essential from a traffic operations perspective. However, its inclusion remains desirable in terms of enhancing connectivity and resilience within the transport network.

Furthermore, it is acknowledged that input from the Shire is required to determine their position on the necessity of a connecting road between Katharine Street and the proposed Helena River Parkway Road/Helena Valley Drive. Their guidance will be important in confirming the broader planning objectives and any requirements for future infrastructure provision in this area.

5 Proposed Internal Transport Network

5.1 Road Hierarchy

Based on the estimated traffic projections discussed in [Section 7.2](#) of this report, all internal roads of the subject structure plan would carry less than 3,000vpd and therefore, all internal roads can be classified as Access Street and Neighbourhood Connector roads, in accordance with relevant road hierarchy guidelines.

The access to the proposed Phase 2 structure plan area is provided via two Neighbourhood Connector B entry roads from north to south, both of which connect to Wilkins Street. This includes a new access directly aligned with Henkin Street to the north upgrading the existing 'T' intersection to a roundabout intersection, and another proposed access further east with a new 'T' intersection. The western area includes a Neighbourhood Connector B Road that connects from the Phase 1 structure plan area.

The upgraded roundabout intersection is proposed to configure as a single lane roundabout to act as a traffic management and calming measure for both Wilkins Street and Henkin Street. Therefore, it is anticipated that this new roundabout intersection will reduce the likelihood of crashes and improve the road safety within the area.

Further, one Neighbourhood Connector B Road will run internally from east to west, connecting with the Phase 1 development. The remaining internal road network comprises local roads classified as Access Street type D. Additionally, five 6.0m wide laneways are also proposed to facilitate access to the rear-loaded lots.

Proposed road reserves will range from 15.0m to 19.0m width for Neighbourhood Connector B Road and 13.0m to 15.0m width for Access Street type D throughout the site. Typical cross sections of Neighbourhood Connector B Road and Access Street type D are shown in [Figure 14](#) and [Figure 15](#), respectively. Therefore, the proposed internal road network of the proposed structure plan will facilitate efficient and balanced distribution of traffic within the structure plan area.

It is recommended that the classification of Road 18, which directly connects to the new roundabout at the intersection of Wilkins Street and Henkin Street, should be changed to Neighbourhood Connector A status. This road is located between the proposed apartment or grouped housing site and the proposed local centre lot. The upgrade is intended to support the anticipated traffic and parking demands associated with the local centre.

A Neighbourhood Connector A road is designed to accommodate daily traffic volumes of up to 7,000 vehicles and typically requires a street reserve width of 27.6 metres. It is typically designed to entail central median, cycle lanes and indented on-street parking bays. The proposed road reserve width for Road 18 is 41.4 metres,

which is suitable for the proposed classification and the required typical cross section. Please see **Figure 16** for more information.

The proposed Phase 2 structure plan will be seamlessly integrated with the existing and Phase 1 development to the west, north, and east, promoting a cohesive urban layout. The internal road network has been designed to accommodate appropriate service vehicles, ensuring functionality for daily operations and emergency access. Waste collection services will follow the standard practice used for residential developments across the Shire of Mundaring. This involves residents wheeling their bins to the verge for collection on designated days.

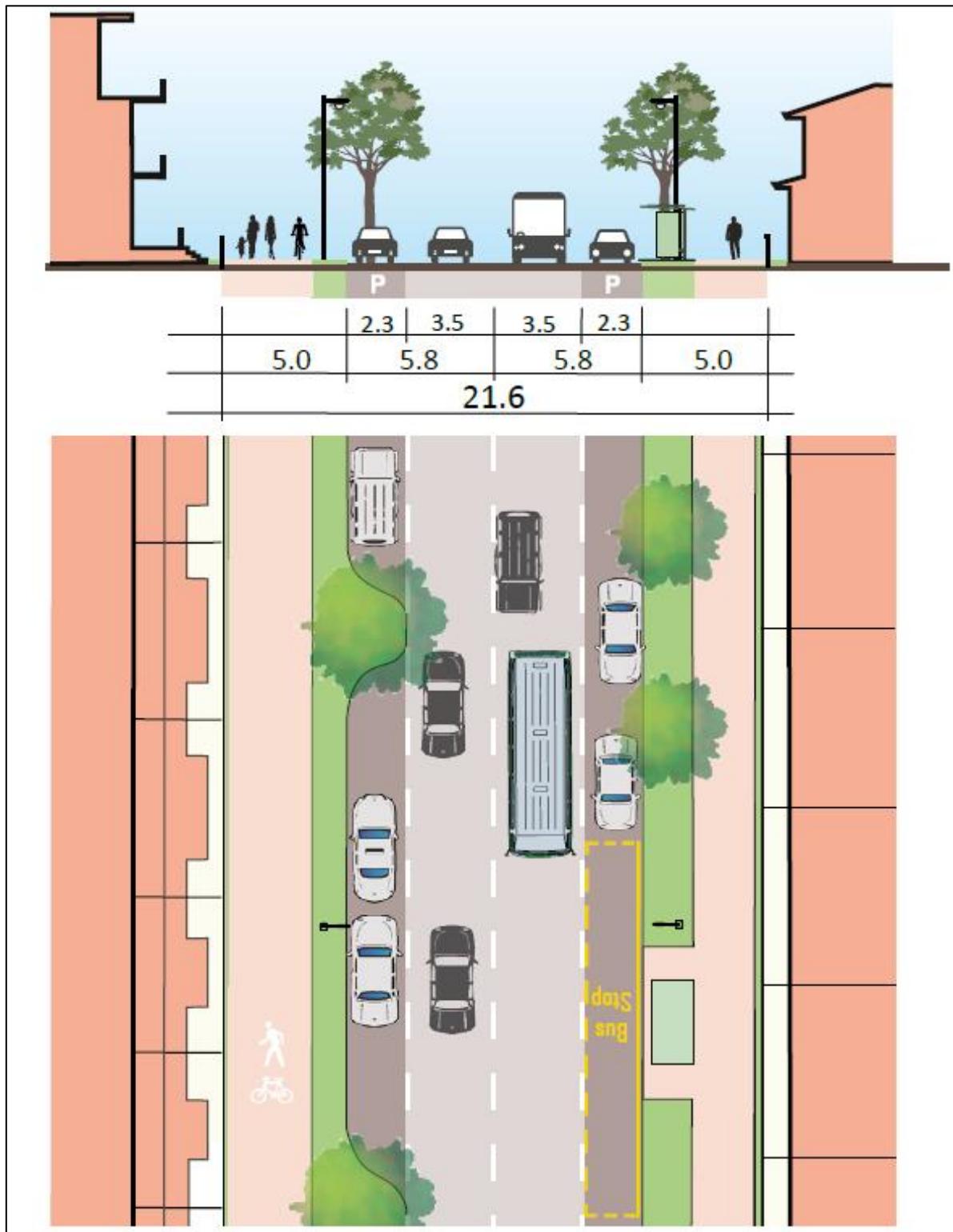


Figure 14. Typical cross section of Neighbourhood Connector B Road (source: Liveable Neighbourhoods 2015)

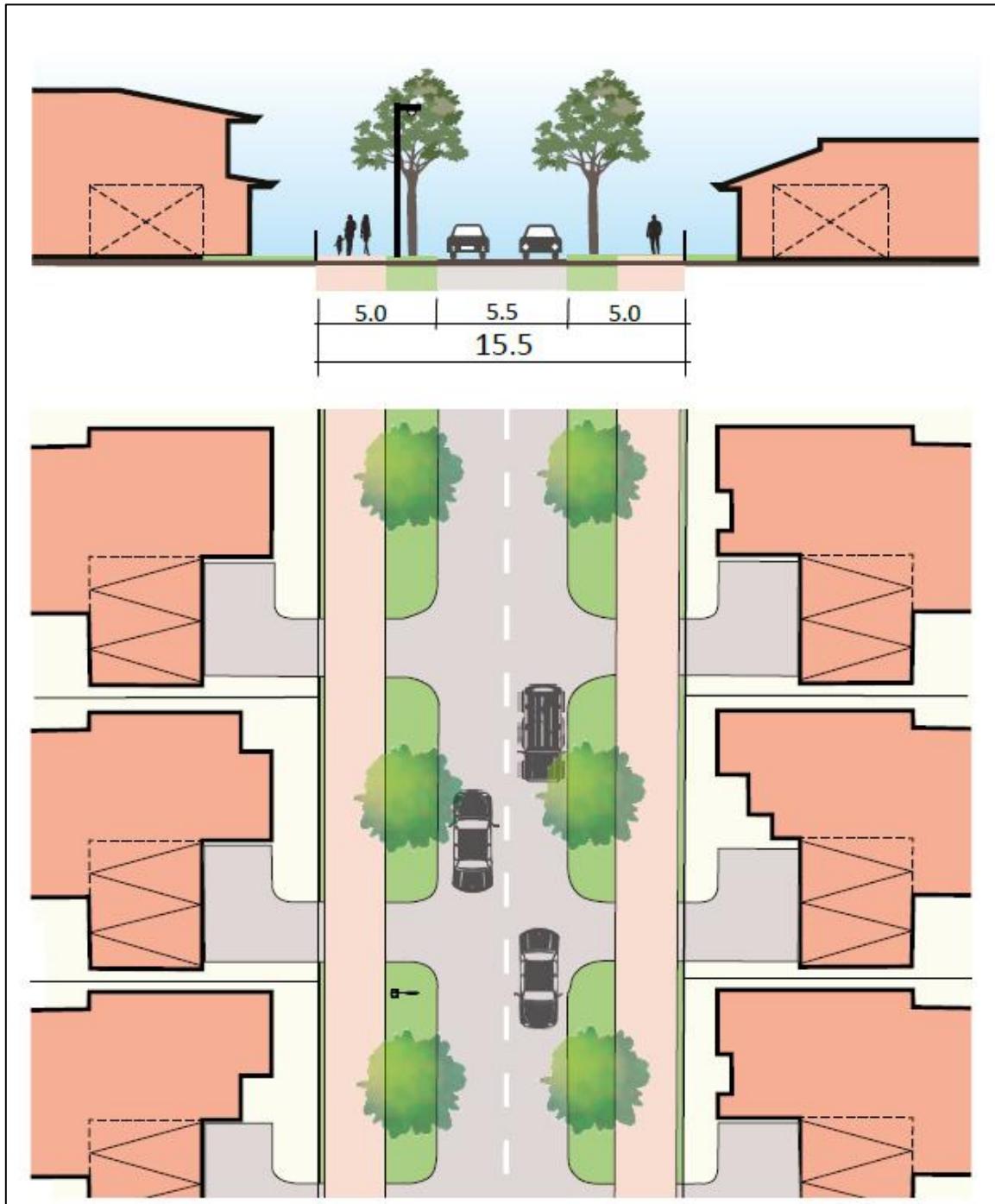


Figure 15. Typical cross section of Access Street D (source: Liveable Neighbourhoods 2015)

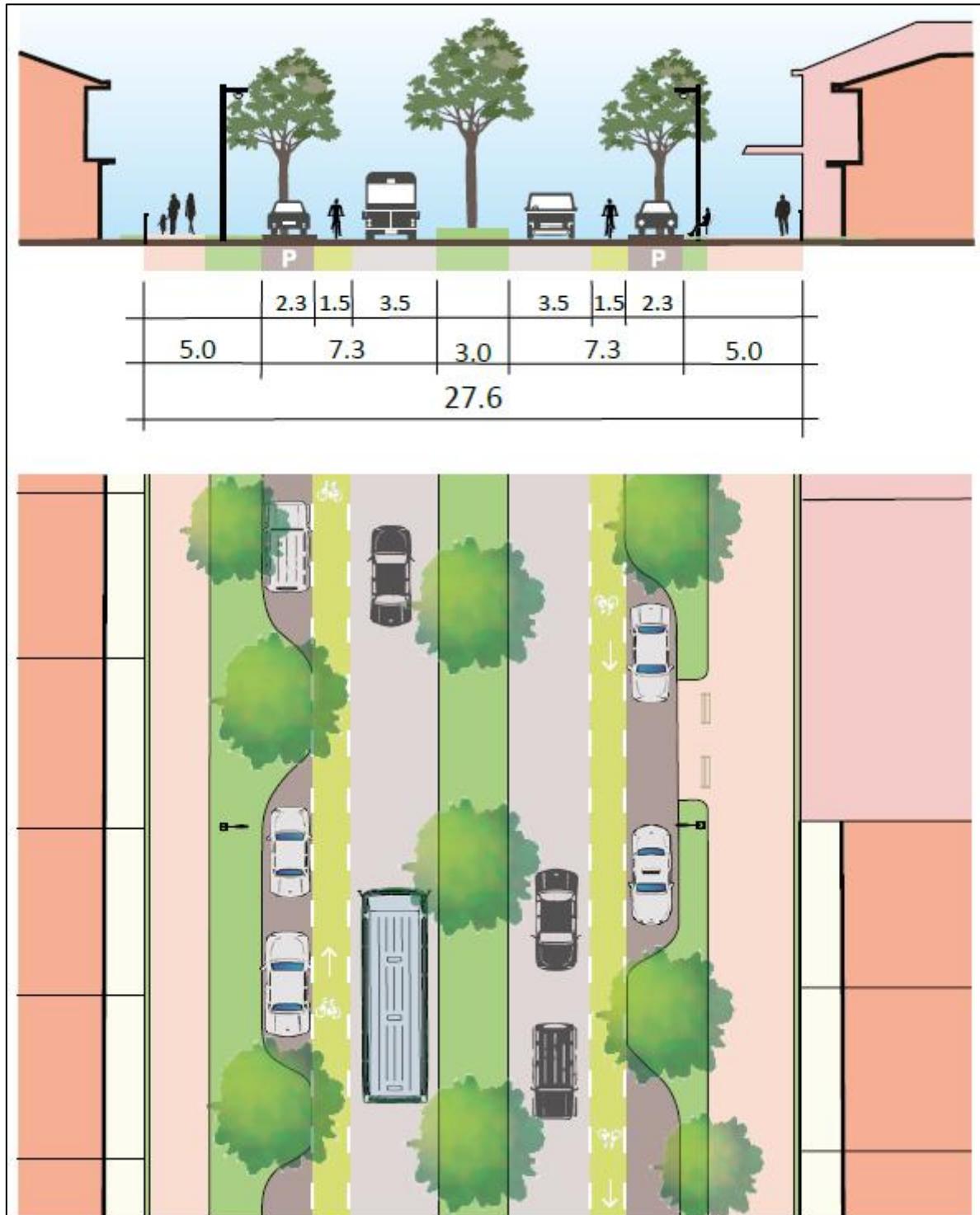


Figure 16. Typical cross section of Neighbourhood Connector A Road (source: Liveable Neighbourhoods 2015)

6 Integration with Surrounding Area

The proposed Phase 2 Structure Plan is consistent with the approved Phase 1 Structure Plan of the Robinson Grove Estate, ensuring continuity in planning and design across the estate. Additionally, the land use proposed under Phase 2 remains fully compliant with the current zoning of the site as outlined in the local planning scheme, reinforcing the proposal's strategic alignment with local planning objectives.

The road network and pedestrian paths outlined in the Phase 2 Structure Plan have been designed to seamlessly connect with the existing road infrastructure on all sides of the development. This integrated approach promotes strong connectivity within the estate and ensures convenient and efficient access for future residents.

7 Traffic Assessment

7.1 Assessment Period

The traffic assessment undertaken for the subject site is based on full development of all land uses within the subject site and the surrounding Phase 1 structure plan of Robinson Grove Estate. The analysis is not specific to a particular year but represents full development of this locality.

7.2 Trip Generation

7.2.1 Existing Traffic Generation

The subject site is presently vacant and does not generate any traffic.

7.2.2 Proposed Development Traffic Generation

The proposed Phase 2 structure plan will yield 345 new residential dwellings, along with a potential local centre encompassing an area of 1.0161ha and an apartment or grouped site with an area of 3,941m².

The traffic generation rate used for the proposed subdivision is 8.0 vehicular trips per day (vpd) per dwelling, which corresponds to peak hour trip generation rates of 0.8 vehicular trips per hour per dwelling as recommended in the Western Australian Planning Commission (WAPC) *Transport Impact Assessment Guidelines* (2016).

Accordingly, it is calculated that the daily and peak hours traffic generation for the proposed Phase 2 structure plan are:

Residential Lots

- Daily vehicle trips: $345 \times 8 = 2,760$ vpd.
- Weekday AM peak hour trips: $345 \times 0.8 = 276$ vph.
- Weekday PM peak hour trips: $345 \times 0.8 = 276$ vph.

Apartment or Grouped Site

The lot allocated for the proposed apartment or grouped site is designated as R40 and accordingly, it is estimated that the total area for this lot is equivalent to a total of 15 R40 lots [$(3,941\text{m}^2 / 10,000) \times 40 = 15.7$].

- Daily vehicle trips: $15 \times 8 = 120$ vpd.
- Weekday AM peak hour trips: $15 \times 0.8 = 12$ vph.
- Weekday PM peak hour trips: $15 \times 0.8 = 12$ vph.

Shopping Plaza (ITE – 821) – 1,000 Sq. Ft. GFA

- Weekday daily: $94.49 \text{ vpd per 1000sqft GFA} / 0.929 = 101.71 \text{ vpd/ 100m}^2 \text{ GFA}$;
- Weekday AM peak hour: $3.53 \text{ vph per 1000sqft GFA} / 0.929 = 3.8 \text{ vph/ 100m}^2 \text{ GFA}$; and,
- Weekday PM peak hour: $9.03 \text{ vph per 1000sqft GFA} / 0.929 = 9.72 \text{ vph/ 100m}^2 \text{ GFA}$.

Based on the preliminary concept design for the proposed local centre developed by TBB Planning, it is understood that the total GFA currently proposed for this lot is $4,155 \text{ m}^2$. Therefore, the total GFA of $4,155 \text{ m}^2$ is used to calculate the traffic generated by the proposed local centre lot.

Further, it is important to note that a significant portion of trips to the local centre will consist of cross-traffic between the residential areas within the proposed structure plan and the local centre itself, as the centre is primarily intended to serve this locality. Accordingly, a cross-traffic rate of 50% has been assumed and applied to the local centre. Accordingly, it is estimated that the traffic generations for the proposed local centre are:

- Weekday daily: $[101.71 \times (4,155)/100 \text{ (GFA)}] \times 50\% = 2,113 \text{ vpd}$;
- Weekday AM peak hour: $[3.8 \times (4,155/100 \text{ (GFA)})] \times 50\% = 79 \text{ vph}$; and,
- Weekday PM peak hour: $[9.72 \times (4,155/100 \text{ (GFA)})] \times 50\% = 202 \text{ vph}$.

It is therefore estimated that the proposed Phase 2 (considering 50% cross-trade for the local centre) would generate approximately **4,993** vehicular trips per typical weekday, with about **367** trips during the typical weekday AM and about **490** trips during the typical weekday PM peak hours. These totals include both inbound and outbound vehicle movements.

The traffic distribution detailed in **Table 2** was based on the following directional split assumptions (based on ITE guidelines) for peak hour periods:

- Morning (AM) peak split estimated as 25%/75% and 62%/38% (inbound/outbound trips) for residential lots and local centre respectively; and,
- Afternoon (PM) peak split estimated as 62.5%/37.5% and 48%/52% for (inbound/outbound trips) for residential lots and local centre respectively.

Table 2. Directional splits for peak hours (proposed Phase 2)

Phase 2	Direction	AM Peak	PM Peak
Residential Lots (including grouped housing lot)	<i>Inbound</i>	72	180
	<i>Outbound</i>	216	108
Local Centre	<i>Inbound</i>	49	97
	<i>Outbound</i>	30	105
Total		367	490

For the purpose of a robust traffic modelling and analysis, the traffic generation from the Phase 1 of Robinson Grove Estate has been incorporated into the assessment. Accordingly, the total traffic generated from Robinson Grove Estate including both Phase 1 which is currently under construction, and Phase 2 (the proposed structure plan) are detailed in **Table 3**.

Table 3. Estimated total trips of Robinson Grove Estate structure plan

Land Uses	Lots/ Area	Cross-Trade	Daily	AM		PM	
				In	Out	In	Out
Phase 2 (large area)	278	-	2,224	56	167	139	83
Phase 2 (grouped housing)	15	-	120	3	9	8	5
Phase 2 (local centre)	4,155m ²	50%	2,113	49	30	97	105
Phase 2 (small area)	67	-	536	13	40	34	20
Phase 2 (Total)	-	-	4,993	121	246	277	213
Phase 1	264	-	2,112	53	158	132	79

7.3 Trip Distribution

The distribution of trips has been estimated based on the surrounding residential areas and the attractions for the proposed structure plan. The total combined trip distribution from both Phase 1 and Phase 2 is summarised in **Table 4**. Further, traffic distributions from Phase 1 and 2 are summarised in **Table 5** and **Table 6**, respectively and presented in **Figure 17** and **Figure 18**. The combined Phase 1 and Phase 2 traffic volumes are presented in **Figure 19**.

Table 4: Total Traffic distribution (Combined Phases 1 and 2 of residential lots)

Approach/ Departure Route	Total
Clayton St west	80%
Clayton St east	15%
Katharine St south	5%

Table 5. Phase 1 Traffic distribution

Approach/ Departure Route	Phase 1
Clayton St west via Pascoe St	70%
Clayton St west via Henkin St	10%
Clayton St east via Henkin St	15%
Katharine St south via Wilkins St	5%
Total	100%

Table 6: Phase 2 Traffic distribution (Subject site)

Approach/ Departure Route	Phase 2 – small area	Phase 2 – large area + grouped housing	Phase 2 – local centre
Clayton St west via Pascoe St	80%	-	-
Clayton St west via Henkin St	-	80%	10%
Clayton St east via Henkin St	15%	15%	20%
Henkin St north	-	-	50%
Katharine St south via Wilkins St	5%	5%	20%
Total	100%	100%	100%

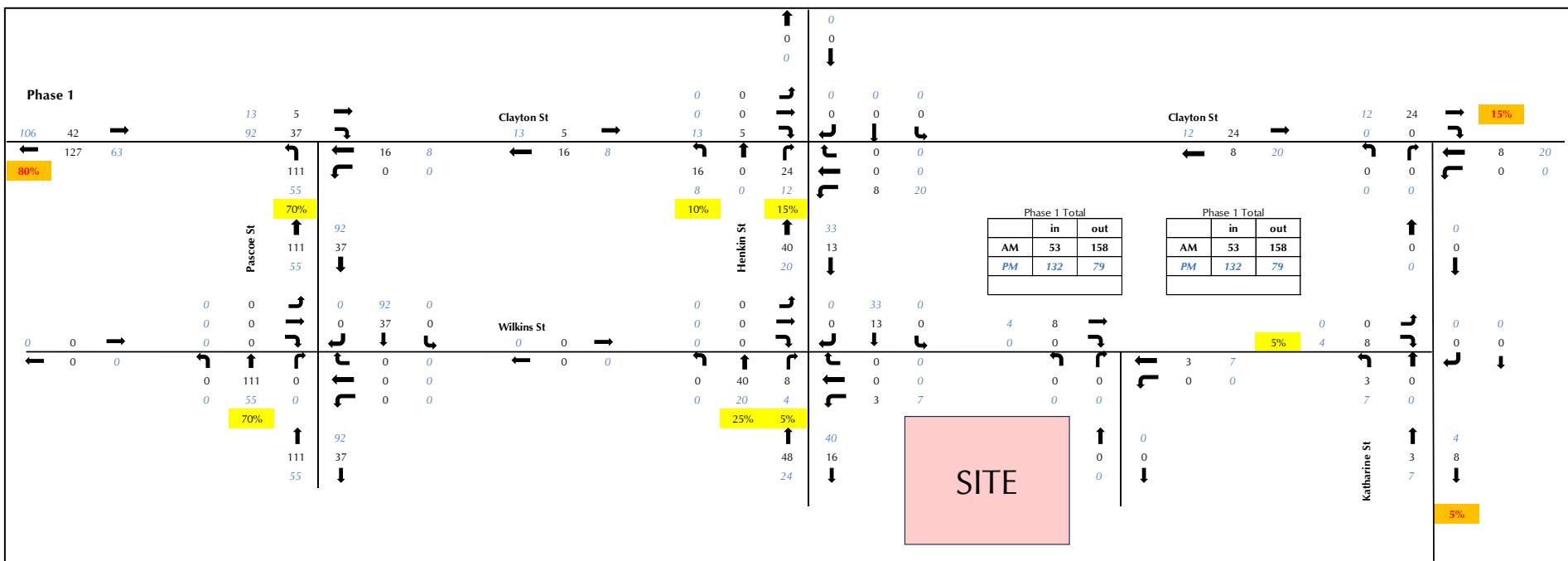


Figure 17: Phase 1 development traffic (AM/ PM peak hours)

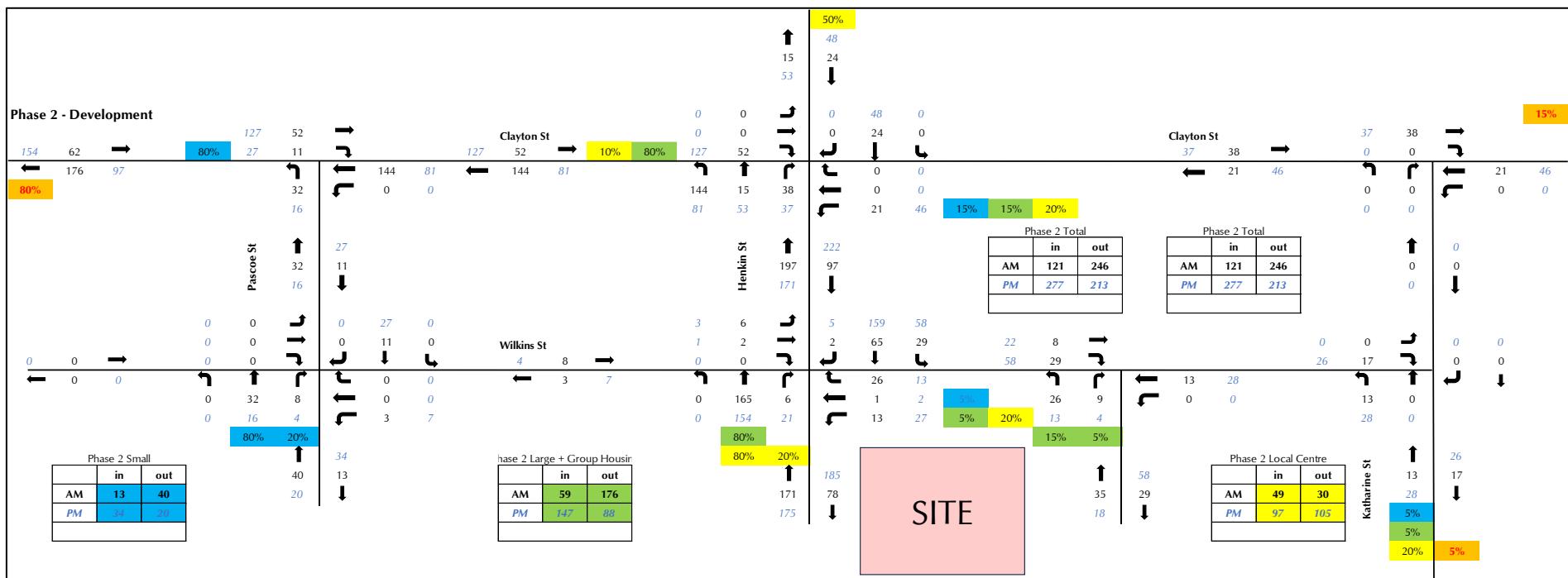


Figure 18: Proposed development - Phase 2 traffic (AM/ PM peak hours)

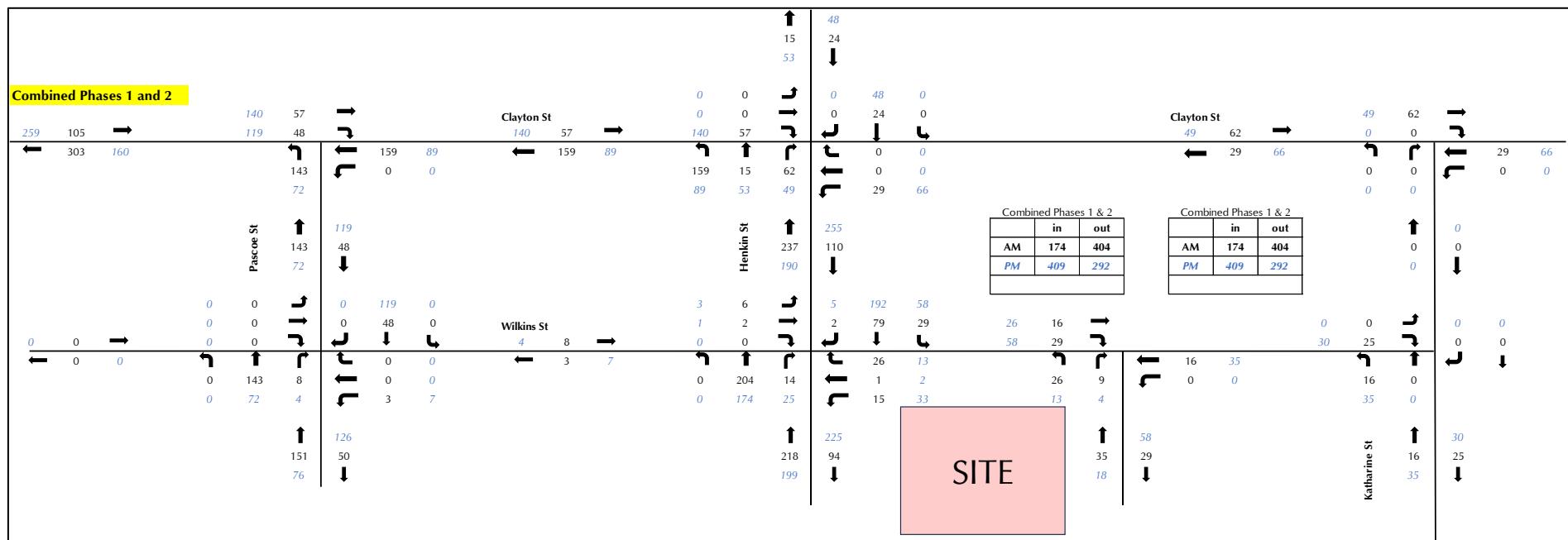


Figure 19: Combined Phase 1 and Phase 2 development traffic (AM/ PM peak hours)

7.4 Future Total Traffic Flow

The traffic surveys conducted by Transcore in June 2025 at the roundabout intersection of Clayton Street/ Henkin Street and the priority controlled 'T' intersection of Henkin Street/ Wilkins Street are considered representatives of existing (base) traffic flows.

The projected traffic flow generated by the subject site (Phase 2 of the structure plan) has been combined with the traffic flow from Phase 1 and this combined traffic flow has been added to the base traffic flow to determine the future total traffic flows, following full development of the entire structure plan. The resultant full development total traffic flows (the combined base with Phase 1 and the proposed development Phase 2 traffic volumes) are presented in **Figure 20**.

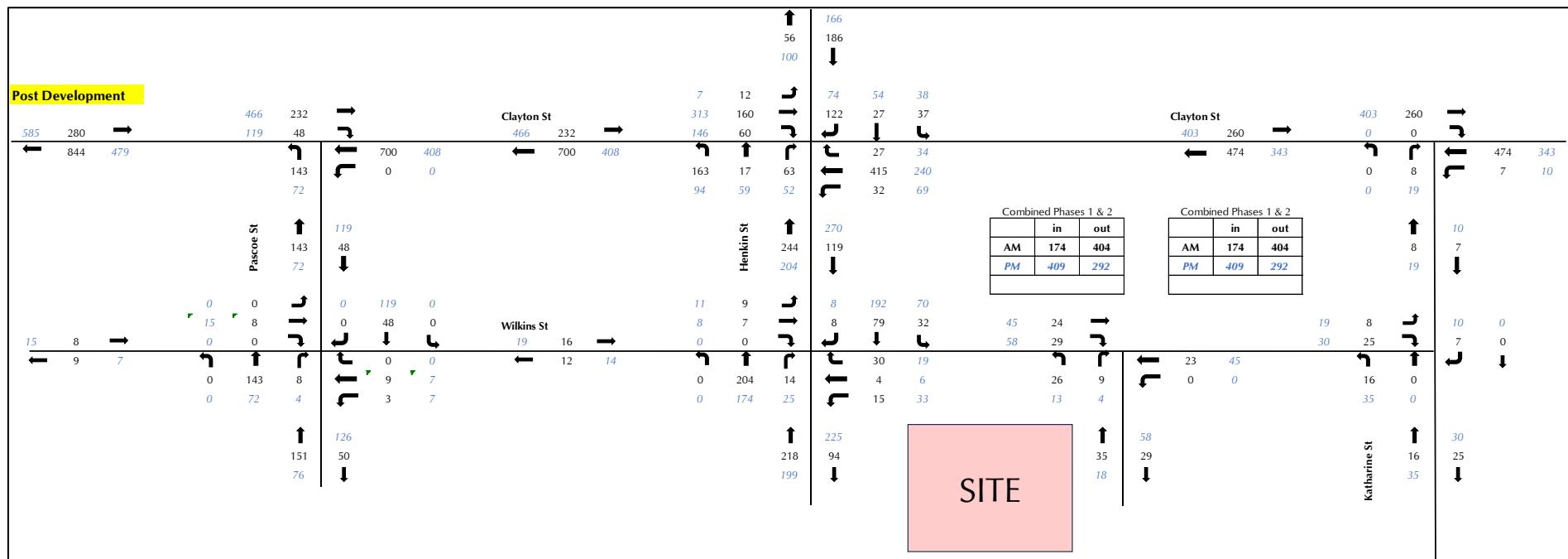


Figure 20: Base traffic + Phase 1 + Phase 2 (proposed development) traffic (AM/ PM peak hours)

7.5 Analysis of Local Intersections & Crossovers

SIDRA 10.0 network intersection analysis has been undertaken for Clayton Street/Henkin Street roundabout intersection and Henkin Street/ Wilkins Street roundabout intersection in order to assess their operations in the existing and post development scenario for weekday AM and PM peak hours.

SIDRA is an intersection modelling tool commonly used by traffic engineers for all types of intersections. SIDRA outputs are presented in the form of Degree of Saturation, Level of Service, Average Delay and 95% Queue. These characteristics are defined as follows:

- **Degree of Saturation** is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The Degree of Saturation ranges from close to zero for infrequent traffic flow up to one for saturated flow or capacity.
- **Level of Service** is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. In general, there are 6 levels of service, designated from A to F, with Level of Service A representing the best operating condition (i.e. free flow) and Level of Service F the worst (i.e. forced or breakdown flow).
- **Average Delay** is the average of all travel time delays for vehicles through the intersection.
- **95% Queue** is the queue length below which 95% of all observed queue lengths fall.

The layout of the existing intersections is illustrated in [Figure 21](#) and the layout of the modelled network for the post development scenarios is illustrated in [Figure 22](#).

The SIDRA analysis has been undertaken in accordance with current MRWA operational modelling guidelines including separate input of different classes of heavy vehicles and the parameters specified by MRWA for those vehicle classes.

The results of the SIDRA analysis are presented in [Appendix B](#).



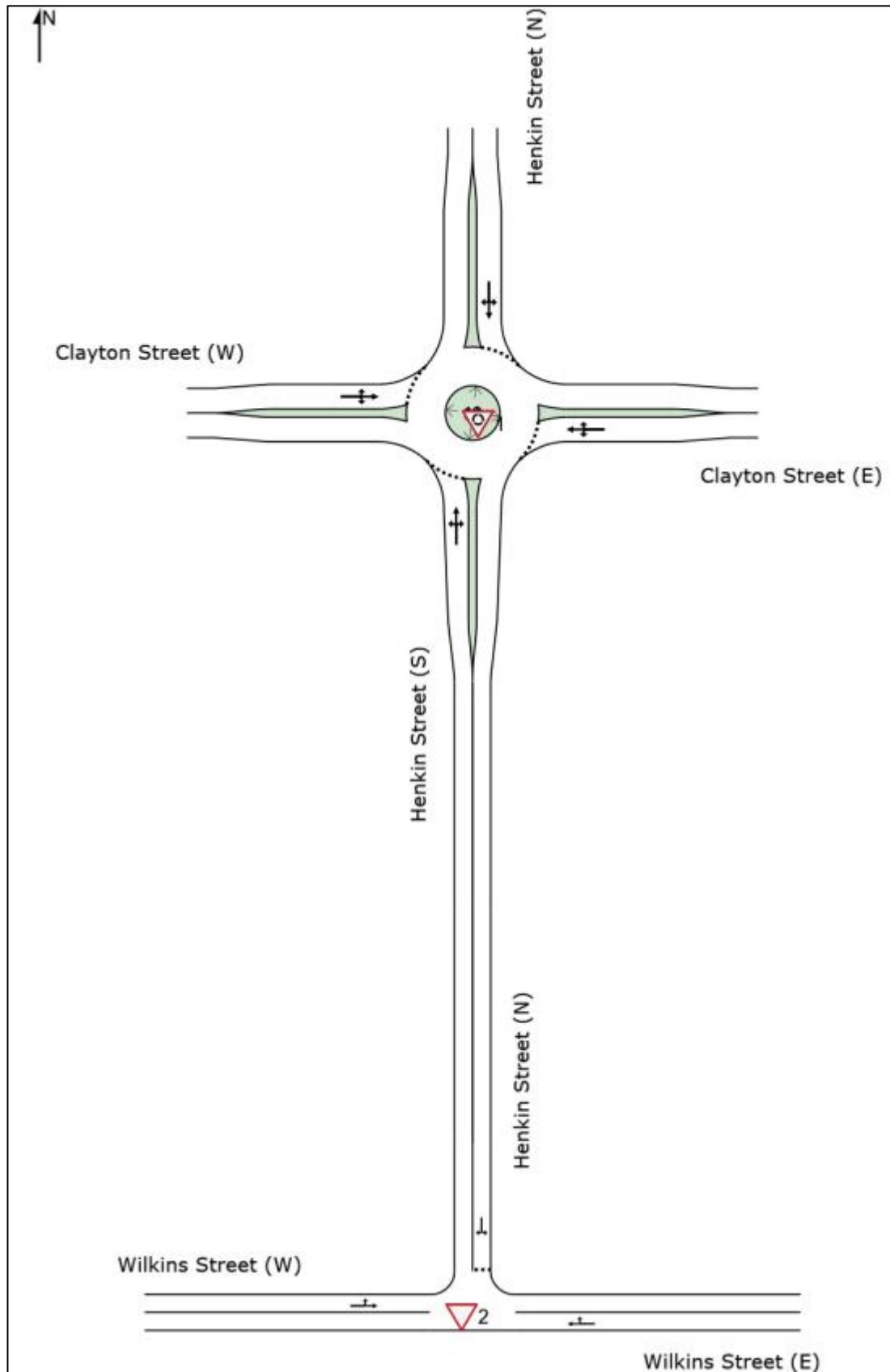


Figure 21: SIDRA network layout – Existing scenario (intersections of Clayton Street/ Henkin Street and Henkin Street/ Wilkins Street)

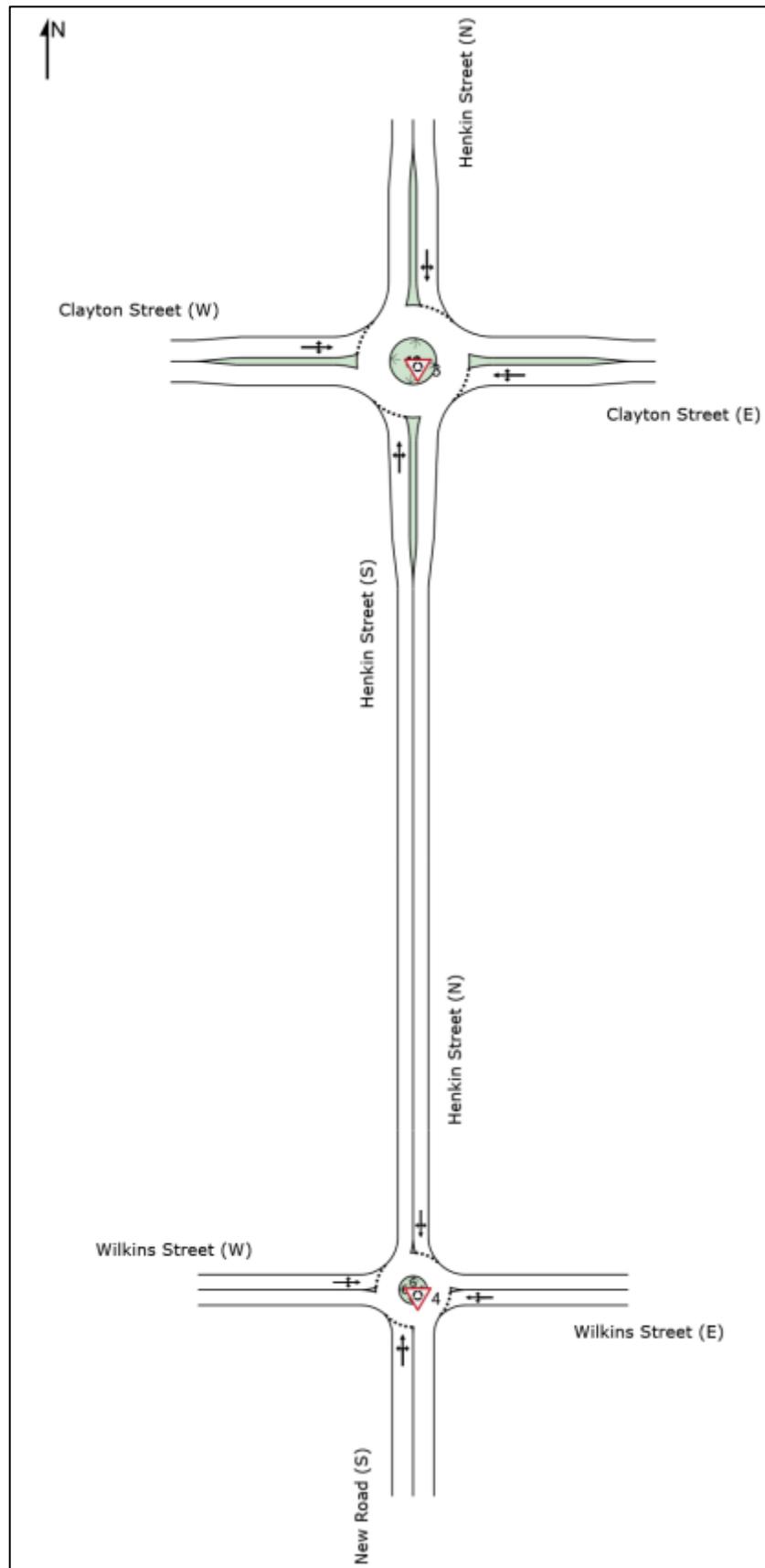


Figure 22: SIDRA network layout – Post development scenario (intersections of Clayton Street/ Henkin Street and Henkin Street/ Wilkins Street)

Clayton Street/ Henkin Street roundabout intersection

Existing scenario

The SIDRA analysis indicates that the current roundabout intersection is operating with a very good Level of Service (LOS) A. During the AM peak hour with a queue of approximately three vehicles is observed on Clayton Street westbound. In the PM peak hour, queue lengths remain low, with around two vehicles on both the westbound and eastbound approaches of Clayton Street.

Post Development scenario

The SIDRA modelling for the post-development scenario demonstrates that the additional traffic generated by the proposed structure plan will not significantly impact the overall performance of the roundabout. The intersection is reported to maintain its current good Levels of Service, except the right turn movement from Henkin Street northbound to Clayton Street eastbound during the AM peak hour, reported to increase from current LoS A to B, which still indicates a good level of service.

Vehicle queue lengths are anticipated to experience marginal increases in post-development scenario. It is reported that the queues increase to two vehicles on Henkin Street northbound and three vehicles on Clayton Street westbound during the AM peak hour. Similarly, in the PM peak hour, queue lengths on Clayton Street may reach up to three vehicles in eastbound direction. These minor increases are considered negligible and are not expected to adversely affect the operation of the local road network.

Henkin Street/ Wilkins Street intersection

Existing scenario

The SIDRA results for the existing 'T' intersection of Henkin Street and Wilkins Street show that this intersection is currently operating with Level of Service A with no queues on all three approaches during both peak periods.

Post Development scenario

With the upgraded 4-leg roundabout intersection, accommodating the additional traffic from the subject site, the SIDRA results indicate that this upgraded roundabout intersection will also operate with level of service A for all four approaches during both the AM and PM peak hours, with minimal queues and considerably low average delays.

Therefore, it is considered that the traffic operations of the existing and proposed external structure plan intersections are acceptable and can satisfactorily accommodate the structure plan traffic.



7.6 Impact on Surrounding Roads and Neighbouring Areas

The WAPC Transport Impact Assessment Guidelines (2016) provides the following guidance on the assessment of traffic impacts:

"As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis."

The SIDRA network intersection analysis undertaken confirms that Clayton Street and the roundabout intersection of Clayton Street and Henkin Street would perform with satisfactory traffic operations with the structure plan traffic.

7.7 Traffic Noise

The WAPC's State Planning Policy 5.4: *Road and Rail Transport Noise and Freight Considerations in Land Use Planning* requires assessment of noise impact on noise-sensitive developments when a road carries more than 20,000vpd in an urban area or 5,000vpd in a rural area.

The traffic generation of the proposed structure plan will not increase the traffic flows on any surrounding roads to anywhere near the abovementioned traffic thresholds, so no noise impacts on surrounding areas are anticipated.

7.8 Road Safety

No particular road safety issues have been identified in relation to the proposed development.



8 Public Transport Access

The existing bus services in this area have been noted in **Section 3.5** of this report and will provide a satisfactory level of public transport accessibility to the site.



9 Pedestrian and Cyclist Access

The existing pedestrian and cyclist facilities in this area have been noted in **Section 3.6** of this report.

As outlined in **Section 3.5** of this report, the nearest bus stop is available on Clayton Street, approximately 150m from the subject site (measured from the intersection of Wilkins Street and Henkin Street). To ensure connectivity with the existing nearest bus stops, footpaths should be provided on both sides of the Neighbourhood Connector roads within the internal road network to access the nearest bus stop. Additionally, it is recommended that all other internal access roads include pedestrian footpaths on at least one side of the roads.



10 Conclusions

This Transport Impact Assessment (TIA) has been prepared by Transcore on behalf of Satterley Property Group with respect to the proposed Phase 2 of Robinson Grove Estate residential structure plan located at Lot 9000 (500) Katharine Street, Bellevue in the Shire of Mundaring. The subject site is currently vacant land, and there are currently ongoing residential developments from Phase 1 to the west of the subject site.

The subject site (Phase 2 of the structure plan) consists of two separate areas and abuts the Phase 1 boundary to the west. The smaller area is configured as an extension leg of the south-western portion of Phase 1 and covers the remaining developable area between the Phase 1 boundary and the Parks. The proposed Phase 2 structure plan comprises total residential lot yield of 345 residential lots, one apartment or grouped housing site and one local retail/commercial centre lot.

As part of the Phase 2 Structure Plan, two new intersections are planned along Wilkins Street to facilitate access for the Phase 2. A key component of this upgrade includes the construction of a 4-leg new roundabout at the intersection of Wilkins Street and Henkin Street. This roundabout is intended to improve traffic circulation and enhance safety at this major access location for the subject site.

The proposed Phase 2 Structure Plan will be seamlessly integrated with the existing land uses and Phase 1 development to the west, north, and east, promoting a cohesive urban layout.

The traffic analysis undertaken in this report indicates that the proposed Phase 2 Structure Plan would generate traffic flows of about 4,993vpd with 367vph and 490vph during AM and PM peak hours, respectively. The results of the SIDRA intersection network analysis confirms that the existing and proposed intersections have the capacity to accommodate the additional traffic flows generated from the Structure Plan area.

Accordingly, it is concluded that the Structure Plan traffic will not have a significant impact on the operations of the surrounding road network.

The subject site has convenient access to the existing bus service operating along Clayton Street. It is recommended that pedestrian footpaths to be provided on both sides of the Neighbourhood Connector roads within the subject site to access the nearest bus stop via the existing pedestrian footpath network in the locality.

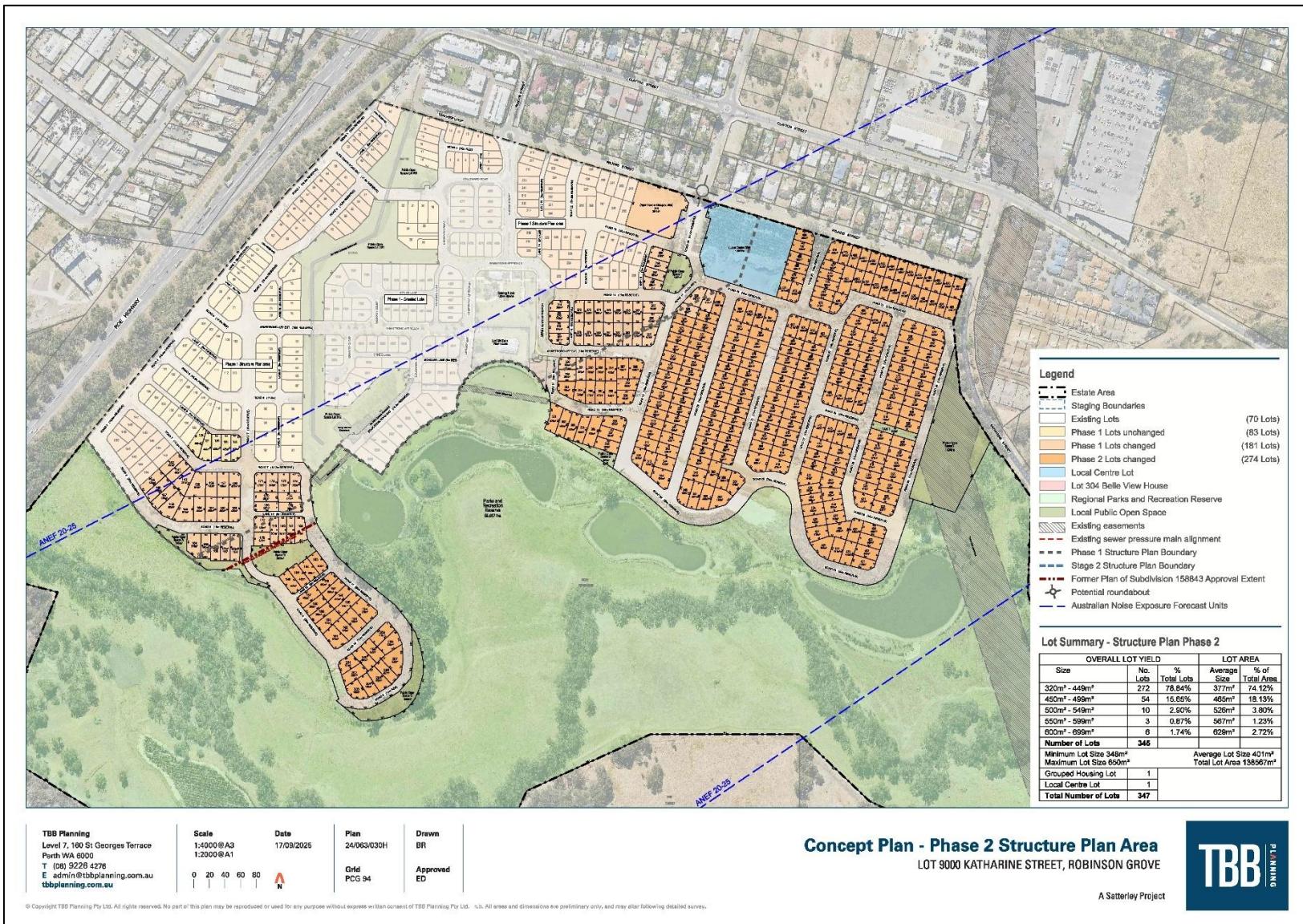
In conclusion, the findings of this Transport Impact Assessment are supportive of the proposed Phase 2 Structure Plan.

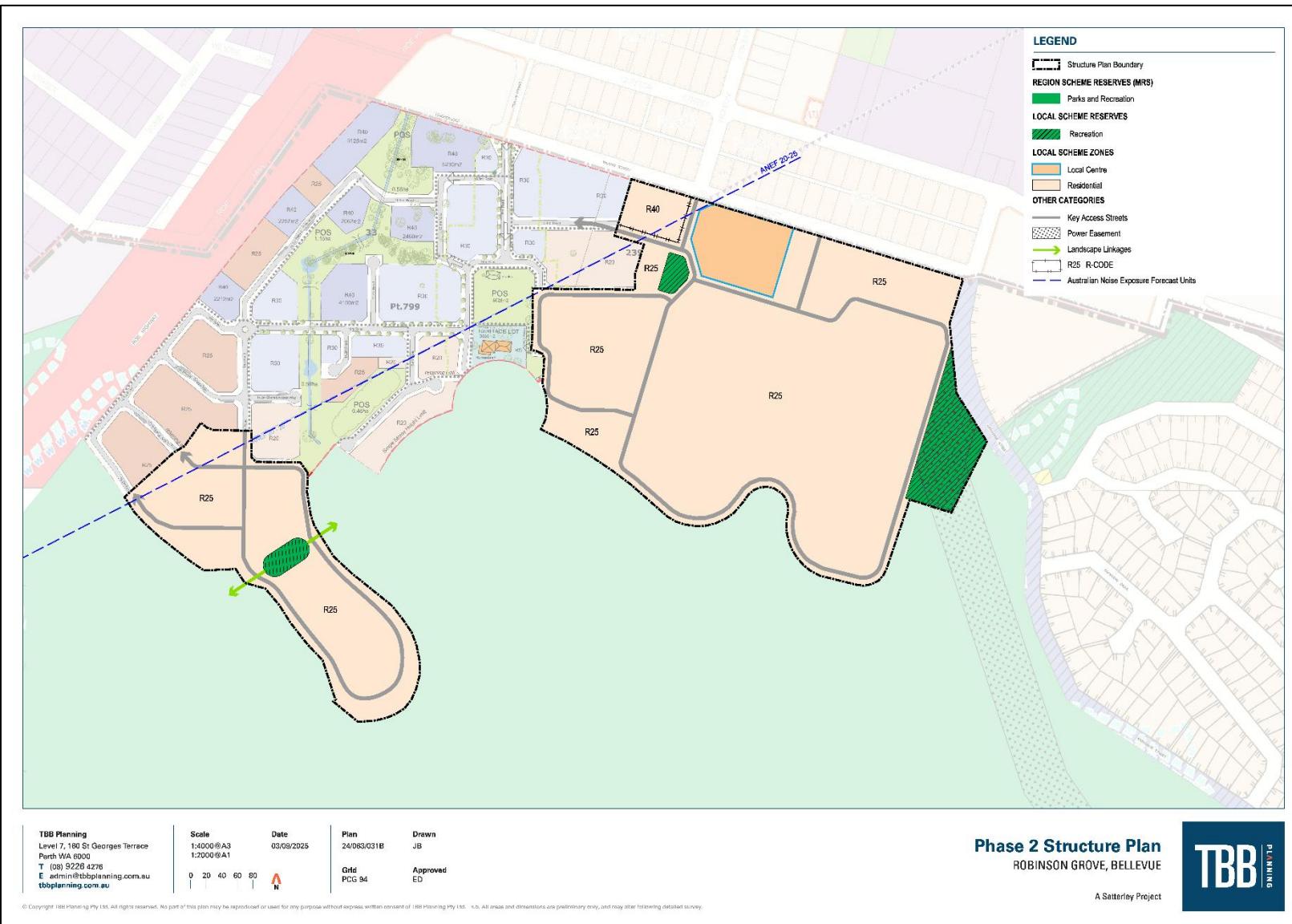
Appendix A

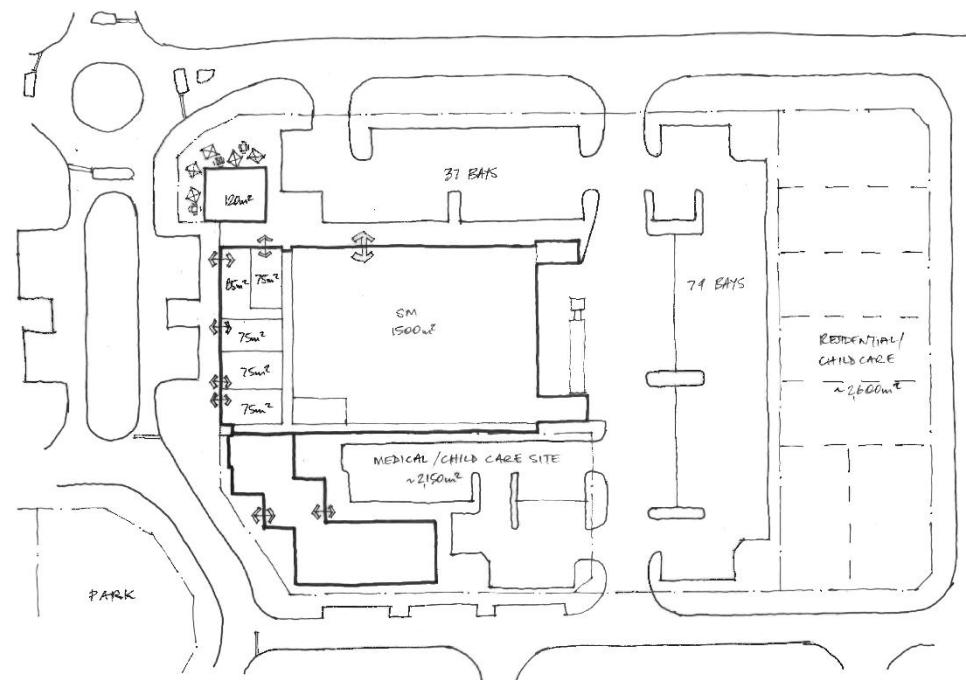
PROPOSED PHASE 2 STRUCTURE PLANS



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 T (08) 8226 4276
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Scale
 1:750 @ A3
 1:375 @ A1

0 7.5 15

Date
 28/08/2025

N

Plan
 24/03/053

Grid
 PCG 94

Drawn
 CR
 Approved
 ED

Local Centre - Preliminary Design Revision

LOT 9000 KATHARINE STREET, ROBINSON GROVE

A Satterley Project



Appendix B

SIDRA ANALYSIS RESULTS



Engineering a better future for over 20 years!

MOVEMENT SUMMARY

⚠ Site: [1] Existing Clayton St/ Henkin St - AM (Existing)

Network: [1] Existing AM (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Existing roundabout intersection of Clayton St/ Henkin St

Site Category: Existing Design

Roundabout

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn Class	Mov	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number Rate to Depart	Aver. Speed km/h
			[Total HV] veh/h	[Total HV] % veh/h	[Total HV] veh/h	[Total HV] %				[Veh. veh]	Dist] m				
South: Henkin Street (S)															
1	L2	All MCs	4	0.0	4	0.0	0.009	6.5	LOS A	0.0	0.3	0.58	0.58	0.58	39.8
2	T1	All MCs	2	0.0	2	0.0	0.009	6.4	LOS A	0.0	0.3	0.58	0.58	0.58	36.2
3	R2	All MCs	1	0.0	1	0.0	0.009	9.7	LOS A	0.0	0.3	0.58	0.58	0.58	43.0
Approach			7	0.0	7	0.0	0.009	7.0	LOS A	0.0	0.3	0.58	0.58	0.58	39.4
East: Clayton Street (E)															
4	L2	All MCs	3	0.0	3	0.0	0.396	5.4	LOS A	2.5	19.2	0.38	0.50	0.38	46.3
5	T1	All MCs	437	4.3	437	4.3	0.396	5.6	LOS A	2.5	19.2	0.38	0.50	0.38	47.9
6	R2	All MCs	28	3.7	28	3.7	0.396	8.9	LOS A	2.5	19.2	0.38	0.50	0.38	44.6
Approach			468	4.3	468	4.3	0.396	5.8	LOS A	2.5	19.2	0.38	0.50	0.38	47.7
North: Henkin Street (N)															
7	L2	All MCs	39	3.3	39	3.3	0.148	4.6	LOS A	0.7	5.2	0.33	0.59	0.33	43.2
8	T1	All MCs	3	0.0	3	0.0	0.148	4.4	LOS A	0.7	5.2	0.33	0.59	0.33	33.5
9	R2	All MCs	128	0.8	128	0.8	0.148	7.7	LOS A	0.7	5.2	0.33	0.59	0.33	40.6
Approach			171	1.4	171	1.4	0.148	6.9	LOS A	0.7	5.2	0.33	0.59	0.33	41.2
West: Clayton Street (W)															
10	L2	All MCs	13	0.0	13	0.0	0.144	4.8	LOS A	0.7	5.7	0.14	0.46	0.14	44.4
11	T1	All MCs	168	8.8	168	8.8	0.144	5.0	LOS A	0.7	5.7	0.14	0.46	0.14	47.6
12	R2	All MCs	3	0.0	3	0.0	0.144	8.1	LOS A	0.7	5.7	0.14	0.46	0.14	44.5
Approach			184	8.0	184	8.0	0.144	5.0	LOS A	0.7	5.7	0.14	0.46	0.14	47.4
All Vehicles			831	4.5	831	4.5	0.396	5.9	LOS A	2.5	19.2	0.32	0.51	0.32	46.4

MOVEMENT SUMMARY

Site: [1 (2)] Existing Clayton St/ Henkin St - PM (Existing)

Network: [2] Existing PM (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Existing roundabout intersection of Clayton St/ Henkin St

Site Category: Existing Design

Roundabout

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance														
Mov ID	Turn Class	Mov	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back of Queue [Veh. veh]	Prop. Qued	Eff. Stop of Cycles	Number of Cycles	Aver. Speed		
			[Total HV] veh/h	[Total HV] % veh/h		v/c	sec							km/h
South: Henkin Street (S)														
1	L2	All MCs	5 0.0	5 0.0	0.016	5.3	LOS A	0.1	0.6	0.45	0.55	0.45	40.7	
2	T1	All MCs	6 17.0	6 17.0	0.016	5.6	LOS A	0.1	0.6	0.45	0.55	0.45	34.4	
3	R2	All MCs	3 0.0	3 0.0	0.016	8.4	LOS A	0.1	0.6	0.45	0.55	0.45	43.8	
Approach			15 7.3	15 7.3	0.016	6.1	LOS A	0.1	0.6	0.45	0.55	0.45	38.9	
East: Clayton Street (E)														
4	L2	All MCs	3 0.0	3 0.0	0.241	5.1	LOS A	1.3	10.3	0.27	0.49	0.27	46.9	
5	T1	All MCs	253 5.0	253 5.0	0.241	5.3	LOS A	1.3	10.3	0.27	0.49	0.27	48.2	
6	R2	All MCs	36 6.0	36 6.0	0.241	8.6	LOS A	1.3	10.3	0.27	0.49	0.27	44.7	
Approach			292 5.1	292 5.1	0.241	5.7	LOS A	1.3	10.3	0.27	0.49	0.27	47.7	
North: Henkin Street (N)														
7	L2	All MCs	40 2.6	40 2.6	0.124	5.3	LOS A	0.6	4.5	0.45	0.62	0.45	43.3	
8	T1	All MCs	6 0.0	6 0.0	0.124	5.2	LOS A	0.6	4.5	0.45	0.62	0.45	33.3	
9	R2	All MCs	78 5.4	78 5.4	0.124	8.6	LOS A	0.6	4.5	0.45	0.62	0.45	39.5	
Approach			124 4.2	124 4.2	0.124	7.3	LOS A	0.6	4.5	0.45	0.62	0.45	40.7	
West: Clayton Street (W)														
10	L2	All MCs	7 0.0	7 0.0	0.261	4.9	LOS A	1.4	10.7	0.18	0.46	0.18	44.2	
11	T1	All MCs	329 3.5	329 3.5	0.261	5.0	LOS A	1.4	10.7	0.18	0.46	0.18	48.9	
12	R2	All MCs	6 0.0	6 0.0	0.261	8.2	LOS A	1.4	10.7	0.18	0.46	0.18	44.1	
Approach			343 3.4	343 3.4	0.261	5.0	LOS A	1.4	10.7	0.18	0.46	0.18	48.7	
All Vehicles			774 4.2	774 4.2	0.261	5.7	LOS A	1.4	10.7	0.26	0.50	0.26	47.0	

MOVEMENT SUMMARY

▼ Site: [2] Existing Wilkins St/ Henkin St - AM (Existing)

Network: [1] Existing AM (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Existing priority-controlled 'T' intersection of Wikkins St and Henkin St

Site Category: Existing Design

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Tum Class	Mov Class	Demand Flows [Total HV]	Arrival Flows [Total HV]	Deg. Satn	Aver. Delay v/c	Level of Service	95% Back Of Queue [Veh. veh]	Of Queue Prop. Qued	Eff. Stop of Cycles	Number of Cycles	Aver. Rate to Depart	Speed km/h
East: Wilkins Street (E)													
5	T1	All MCs	3 0.0	3 0.0	0.004	0.0	LOS A	0.0	0.1	0.04	0.31	0.04	47.0
6	R2	All MCs	4 0.0	4 0.0	0.004	4.6	LOS A	0.0	0.1	0.04	0.31	0.04	45.3
Approach			7 0.0	7 0.0	0.004	2.6	NA	0.0	0.1	0.04	0.31	0.04	46.2
North: Henkin Street (N)													
7	L2	All MCs	3 0.0	3 0.0	0.007	4.6	LOS A	0.0	0.2	0.04	0.53	0.04	41.9
9	R2	All MCs	6 0.0	6 0.0	0.007	4.6	LOS A	0.0	0.2	0.04	0.53	0.04	39.3
Approach			9 0.0	9 0.0	0.007	4.6	LOS A	0.0	0.2	0.04	0.53	0.04	40.3
West: Wilkins Street (W)													
10	L2	All MCs	3 0.0	3 0.0	0.004	4.6	LOS A	0.0	0.0	0.00	0.20	0.00	45.7
11	T1	All MCs	5 0.0	5 0.0	0.004	0.0	LOS A	0.0	0.0	0.00	0.20	0.00	48.1
Approach			8 0.0	8 0.0	0.004	1.7	NA	0.0	0.0	0.00	0.20	0.00	47.6
All Vehicles			25 0.0	25 0.0	0.007	3.0	NA	0.0	0.2	0.03	0.36	0.03	44.5

MOVEMENT SUMMARY

▼ Site: [2 (2)] Existing Wilkins St/ Henkin St - PM (Existing)

Network: [2] Existing PM (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Existing priority-controlled 'T' intersection of Wikkins St and Henkin St

Site Category: Existing Design

Give-Way (Two-Way)

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Tum Class	Mov Class	Demand Flows [Total HV]	Arrival Flows [Total HV]	Deg. Satn	Aver. Delay v/c	Level of Service	95% Back Of Queue [Veh. veh]	Of Queue Prop. Qued	Eff. Stop of Cycles	Number of Cycles	Aver. Rate to Depart	Speed km/h
East: Wilkins Street (E)													
5	T1	All MCs	4 0.0	4 0.0	0.006	0.0	LOS A	0.0	0.2	0.06	0.33	0.06	46.8
6	R2	All MCs	6 0.0	6 0.0	0.006	4.6	LOS A	0.0	0.2	0.06	0.33	0.06	45.0
Approach			11 0.0	11 0.0	0.006	2.8	NA	0.0	0.2	0.06	0.33	0.06	45.9
North: Henkin Street (N)													
7	L2	All MCs	13 0.0	13 0.0	0.010	4.6	LOS A	0.0	0.3	0.04	0.52	0.04	41.9
9	R2	All MCs	3 0.0	3 0.0	0.010	4.6	LOS A	0.0	0.3	0.04	0.52	0.04	39.3
Approach			16 0.0	16 0.0	0.010	4.6	LOS A	0.0	0.3	0.04	0.52	0.04	41.5
West: Wilkins Street (W)													
10	L2	All MCs	8 15.0	8 15.0	0.009	4.7	LOS A	0.0	0.0	0.00	0.29	0.00	44.5
11	T1	All MCs	7 0.0	7 0.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	47.6
Approach			16 8.0	16 8.0	0.009	2.5	NA	0.0	0.0	0.00	0.29	0.00	46.5
All Vehicles			42 3.0	42 3.0	0.010	3.4	NA	0.0	0.3	0.03	0.38	0.03	44.3

MOVEMENT SUMMARY

⚠ Site: [3] Post Dev Clayton St/ Henkin St - AM (Post Dev)
 Network: [3] Post Dev AM (Post Dev)
 Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Roundabout intersection of Clayton St/ Henkin St

Site Category: Future Conditions 1

Roundabout

Network Scenario: 1 | Local Volumes Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number Rate to Depart	Aver. Speed km/h
		[Total HV] veh/h	[Total HV] % veh/h	[Total HV] veh/h	[Total HV] % veh/h				[Veh. veh]	Dist] m				
South: Henkin Street (S)														
1	L2	All MCs	172	0.0	172	0.0	0.327	7.5	LOS A	2.0	14.4	0.70	0.71	0.70
2	T1	All MCs	18	0.0	18	0.0	0.327	7.4	LOS A	2.0	14.4	0.70	0.71	0.70
3	R2	All MCs	66	0.0	66	0.0	0.327	10.6	LOS B	2.0	14.4	0.70	0.71	0.70
Approach		256	0.0	256	0.0	0.327	8.3	LOS A	2.0	14.4	0.70	0.71	0.70	39.1
East: Clayton Street (E)														
4	L2	All MCs	34	0.0	34	0.0	0.465	6.1	LOS A	3.1	23.6	0.51	0.56	0.51
5	T1	All MCs	437	4.3	437	4.3	0.465	6.3	LOS A	3.1	23.6	0.51	0.56	0.51
6	R2	All MCs	28	3.7	28	3.7	0.465	9.6	LOS A	3.1	23.6	0.51	0.56	0.51
Approach		499	4.0	499	4.0	0.465	6.5	LOS A	3.1	23.6	0.51	0.56	0.51	47.0
North: Henkin Street (N)														
7	L2	All MCs	39	3.3	39	3.3	0.188	5.3	LOS A	0.9	7.0	0.45	0.62	0.45
8	T1	All MCs	28	0.0	28	0.0	0.188	5.1	LOS A	0.9	7.0	0.45	0.62	0.45
9	R2	All MCs	128	0.8	128	0.8	0.188	8.3	LOS A	0.9	7.0	0.45	0.62	0.45
Approach		196	1.2	196	1.2	0.188	7.2	LOS A	0.9	7.0	0.45	0.62	0.45	40.5
West: Clayton Street (W)														
10	L2	All MCs	13	0.0	13	0.0	0.220	5.2	LOS A	1.2	9.4	0.31	0.53	0.31
11	T1	All MCs	168	8.8	168	8.8	0.220	5.5	LOS A	1.2	9.4	0.31	0.53	0.31
12	R2	All MCs	63	0.0	63	0.0	0.220	8.6	LOS A	1.2	9.4	0.31	0.53	0.31
Approach		244	6.0	244	6.0	0.220	6.3	LOS A	1.2	9.4	0.31	0.53	0.31	45.3
All Vehicles		1195	3.1	1195	3.1	0.465	7.0	LOS A	3.1	23.6	0.50	0.59	0.50	44.2

MOVEMENT SUMMARY

Site: [3 (1)] Post Dev Clayton St/ Henkin St - PM (Post Dev)

Network: [4] Post Dev PM (Post Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Roundabout intersection of Clayton St/ Henkin St

Site Category: Future Conditions 1

Roundabout

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn Class	Mov	Demand Flows [Total HV] veh/h	Arrival Flows [Total HV] % veh/h	Deg. Satn	Aver. Delay v/c	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Qued	Eff. Stop of Cycles	Number Rate to Depart	Aver. Speed km/h
South: Henkin Street (S)												
1	L2	All MCs	99 0.0	99 0.0	0.230	5.7	LOSA	1.2	9.2	0.53	0.61	0.53 40.2
2	T1	All MCs	62 3.4	62 3.4	0.230	5.7	LOSA	1.2	9.2	0.53	0.61	0.53 36.0
3	R2	All MCs	55 0.0	55 0.0	0.230	8.8	LOSA	1.2	9.2	0.53	0.61	0.53 43.4
Approach			216 1.0	216 1.0	0.230	6.5	LOSA	1.2	9.2	0.53	0.61	0.53 40.1
East: Clayton Street (E)												
4	L2	All MCs	73 0.0	73 0.0	0.370	6.5	LOSA	2.2	16.5	0.52	0.59	0.52 45.2
5	T1	All MCs	253 5.0	253 5.0	0.370	6.7	LOSA	2.2	16.5	0.52	0.59	0.52 47.1
6	R2	All MCs	36 6.0	36 6.0	0.370	10.0	LOS B	2.2	16.5	0.52	0.59	0.52 43.6
Approach			361 4.1	361 4.1	0.370	7.0	LOSA	2.2	16.5	0.52	0.59	0.52 46.4
North: Henkin Street (N)												
7	L2	All MCs	40 2.6	40 2.6	0.207	6.7	LOSA	1.1	8.7	0.62	0.67	0.62 42.7
8	T1	All MCs	57 0.0	57 0.0	0.207	6.5	LOSA	1.1	8.7	0.62	0.67	0.62 32.2
9	R2	All MCs	78 5.4	78 5.4	0.207	9.9	LOSA	1.1	8.7	0.62	0.67	0.62 38.8
Approach			175 3.0	175 3.0	0.207	8.0	LOSA	1.1	8.7	0.62	0.67	0.62 38.6
West: Clayton Street (W)												
10	L2	All MCs	7 0.0	7 0.0	0.436	5.7	LOSA	2.9	21.9	0.44	0.56	0.44 41.9
11	T1	All MCs	329 3.5	329 3.5	0.436	5.8	LOSA	2.9	21.9	0.44	0.56	0.44 46.9
12	R2	All MCs	154 0.0	154 0.0	0.436	9.0	LOSA	2.9	21.9	0.44	0.56	0.44 40.5
Approach			491 2.4	491 2.4	0.436	6.8	LOSA	2.9	21.9	0.44	0.56	0.44 45.6
All Vehicles			1242 2.7	1242 2.7	0.436	7.0	LOSA	2.9	21.9	0.50	0.59	0.50 44.2

MOVEMENT SUMMARY

Site: [4] Post Dev Wilkins St/ Henkin St - AM (Post Dev)

Network: [3] Post Dev AM (Post Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Proposed roundabout intersection of Wilkins St/ Henkin St

Site Category: Future Conditions 1

Roundabout

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn Class	Mov	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Qued	Eff. Stop of Cycles	Number of Cycles	Aver. Speed
			[Total HV] veh/h	[Total HV] % veh/h		v/c	sec					km/h
South: New Road (S)												
1	L2	All MCs	1 0.0	1 0.0	0.175	4.9	LOS A	0.9	6.4	0.16	0.47	0.16 39.2
2	T1	All MCs	215 0.0	215 0.0	0.175	4.1	LOS A	0.9	6.4	0.16	0.47	0.16 31.8
3	R2	All MCs	15 0.0	15 0.0	0.175	6.6	LOS A	0.9	6.4	0.16	0.47	0.16 41.4
Approach			231 0.0	231 0.0	0.175	4.2	LOSA	0.9	6.4	0.16	0.47	0.16 33.6
East: Wilkins Street (E)												
4	L2	All MCs	16 0.0	16 0.0	0.046	5.1	LOS A	0.3	1.8	0.28	0.57	0.28 39.9
5	T1	All MCs	4 0.0	4 0.0	0.046	4.5	LOSA	0.3	1.8	0.28	0.57	0.28 42.2
6	R2	All MCs	32 0.0	32 0.0	0.046	7.1	LOSA	0.3	1.8	0.28	0.57	0.28 40.3
Approach			52 0.0	52 0.0	0.046	6.2	LOSA	0.3	1.8	0.28	0.57	0.28 40.4
North: Henkin Street (N)												
7	L2	All MCs	34 0.0	34 0.0	0.094	4.6	LOS A	0.5	4.0	0.13	0.48	0.13 41.6
8	T1	All MCs	83 0.0	83 0.0	0.094	4.0	LOSA	0.5	4.0	0.13	0.48	0.13 35.4
9	R2	All MCs	8 0.0	8 0.0	0.094	6.6	LOSA	0.5	4.0	0.13	0.48	0.13 39.1
Approach			125 0.0	125 0.0	0.094	4.3	LOSA	0.5	4.0	0.13	0.48	0.13 38.2
West: Wilkins Street (W)												
10	L2	All MCs	9 0.0	9 0.0	0.019	6.2	LOSA	0.1	0.7	0.46	0.54	0.46 37.4
11	T1	All MCs	7 0.0	7 0.0	0.019	5.6	LOSA	0.1	0.7	0.46	0.54	0.46 42.5
12	R2	All MCs	1 0.0	1 0.0	0.019	8.2	LOSA	0.1	0.7	0.46	0.54	0.46 37.4
Approach			18 0.0	18 0.0	0.019	6.0	LOSA	0.1	0.7	0.46	0.54	0.46 40.4
All Vehicles			425 0.0	425 0.0	0.175	4.6	LOSA	0.9	6.4	0.18	0.49	0.18 37.1

MOVEMENT SUMMARY

Site: [4 (1)] Post Dev Wilkins St/ Henkin St - PM (Post Dev)

Network: [4] Post Dev PM (Post Dev)

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Proposed roundabout intersection of Wilkins St/ Henkin St

Site Category: Future Conditions 1

Roundabout

Network Scenario: 1 | Local Volumes

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance														
Mov ID	Tum Class	Mov Class	Demand Flows [Total HV]	Arrival Flows [Total HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Qued	Eff. Stop of Cycles	Number of Cycles	Aver. Speed		
			veh/h %	veh/h %	v/c	sec		m						km/h
South: New Road (S)														
1	L2	All MCs	1 0.0	1 0.0	0.157	4.8	LOS A	0.8	5.8	0.14	0.48	0.14	39.2	
2	T1	All MCs	183 0.0	183 0.0	0.157	4.0	LOS A	0.8	5.8	0.14	0.48	0.14	31.7	
3	R2	All MCs	26 0.0	26 0.0	0.157	6.6	LOS A	0.8	5.8	0.14	0.48	0.14	41.3	
Approach			211 0.0	211 0.0	0.157	4.4	LOS A	0.8	5.8	0.14	0.48	0.14	34.7	
East: Wilkins Street (E)														
4	L2	All MCs	35 0.0	35 0.0	0.063	5.9	LOS A	0.3	2.5	0.43	0.58	0.43	39.8	
5	T1	All MCs	6 0.0	6 0.0	0.063	5.4	LOS A	0.3	2.5	0.43	0.58	0.43	42.2	
6	R2	All MCs	20 0.0	20 0.0	0.063	7.9	LOS A	0.3	2.5	0.43	0.58	0.43	40.1	
Approach			61 0.0	61 0.0	0.063	6.5	LOS A	0.3	2.5	0.43	0.58	0.43	40.2	
North: Henkin Street (N)														
7	L2	All MCs	74 0.0	74 0.0	0.210	4.7	LOS A	1.3	9.8	0.18	0.47	0.18	41.5	
8	T1	All MCs	202 0.0	202 0.0	0.210	4.1	LOS A	1.3	9.8	0.18	0.47	0.18	35.2	
9	R2	All MCs	8 0.0	8 0.0	0.210	6.7	LOS A	1.3	9.8	0.18	0.47	0.18	38.9	
Approach			284 0.0	284 0.0	0.210	4.3	LOS A	1.3	9.8	0.18	0.47	0.18	37.8	
West: Wilkins Street (W)														
10	L2	All MCs	12 18.2	12 18.2	0.023	6.4	LOS A	0.1	1.0	0.44	0.54	0.44	37.5	
11	T1	All MCs	8 0.0	8 0.0	0.023	5.4	LOS A	0.1	1.0	0.44	0.54	0.44	42.6	
12	R2	All MCs	1 0.0	1 0.0	0.023	8.0	LOS A	0.1	1.0	0.44	0.54	0.44	37.5	
Approach			21 10.0	21 10.0	0.023	6.1	LOS A	0.1	1.0	0.44	0.54	0.44	40.5	
All Vehicles			577 0.4	577 0.4	0.210	4.6	LOS A	1.3	9.8	0.20	0.49	0.20	37.6	