

City of Greater Geelong Planning Scheme Amendment

Amendment C251: 1 Henry Street, Belmont

Prepared for
The Applicant: Up Property Pty Ltd

June, 2017
18820A#1

STATEMENT TO THE PLANNING PANEL APPOINTED BY THE MINISTER FOR PLANNING FOR
AMENDMENT C251 TO THE CITY OF GREATER GELLONG PLANNING SCHEME BY CHARMAINE
DUNSTAN, TRAFFIC ENGINEER

City of Greater Geelong Planning Scheme Amendment

Amendment C251: 1 Henry Street, Belmont

Document Control

Issue No.	Type	Date	Prepared By	Approved By
1	Final	09/06/2017	C. Dunstan/ L. Furness	C. Dunstan

Our Reference: 18820A#1

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City of Greater Geelong Planning Scheme Amendment

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Executive Summary

This report has provided an assessment of the potential traffic engineering impacts of the combined Amendment C251 of the City of Greater Geelong Planning Scheme and Planning Permit application for a residential development at 1 Henry Street, Belmont.

For my assessment, I have adopted the Traffic Report prepared by Traffix Group, Ref: 18820R#2 (dated Feb, 2017). This report was prepared by my team and I was the responsible Director for this project. This report is attached at Appendix A of this statement.

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1 Introduction

The subject of Amendment C251 to the City of Greater Geelong Planning Scheme is the land at 1 Henry Street, Belmont. The amendment proposes the following:

- Zone the land to the General Residential Zone Schedule 1;
- Apply the Development Plan Overlay Schedule 35 to the land;
- Apply the Environmental Audit Overlay to the land; and
- Replace the Schedule to Clause 61.03 with a new Schedule.

The application is a combined application for Planning Scheme Amendment and an application for a Planning Permit. The planning application is for a residential development of 26 attached dwellings and 61 residential lots and forms Stage 1 of the redevelopment of the site.

I have been instructed by Norton Rose, on behalf of the Applicant to provide expert evidence in relation to traffic issues related to the implementation of C251 and the conjoined Planning Permit application. I have also considered the issues raised in submissions to the Planning Panel hearing for Amendment C251 to the City of Greater Geelong Planning Scheme.

2 Statement of Witness

2.1 Qualifications and Experience

My name is Charmaine Chalmers Dunstan. I am a Director of Traffix Group Pty Ltd practicing from Suite 8, 431 Burke Road, Glen Iris.

My qualifications and membership of professional associations are as follows:

- Bachelor of Civil Engineering (honours), Monash University, Clayton
- Masters of Traffic, Monash University
- Member, Engineers Australia (IEAUST)
- Fellow, Victorian Planning & Environmental Law Association

I have over 20 years' experience as a Traffic Engineering and Transport Planning consultant with Traffix Group Pty Ltd and formerly Turnbull Fenner Pty Ltd. My experience also includes a number of local government appointments which involved acting in the role of Council's Transport Co-ordinator or Senior Traffic Engineer.

I have experience and expertise in traffic management, transportation planning, road safety planning and engineering, parking management and strategy development, and development impact assessment of a broad range of land-use developments within established metropolitan, regional and growth areas.

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2.2 Project Team

Leigh Furness (Associate, Traffix Group) assisted with the review of the preparation of this statement and the original Traffic Report.

2.3 Scope of Work

This report specifically reviews the traffic engineering implications of the introduction of Amendment C251 of the City of Greater Geelong Planning Scheme, which includes rezoning, the introduction of a Development Plan Overlay, the introduction of an Environmental Audit Overlay, replacement of the schedule to Clause 61.03 with a new Schedule and a Planning Permit application.

As part of my review, I have had regard to submissions by third parties to Council in response to Amendment C251.

2.3.1 Key Tasks

Based on the exhibited documents and planning history of the site, the scope of my engagement has included the following tasks:

- review of the site location and the surrounding transportation network,
- review and analysis of traffic and parking data,
- review of historical road safety data,
- review of Amendment documentation and planning history,
- review of Council policies and other relevant documents,
- review of the parking implications and impacts of the proposal,
- review of the potential traffic impacts of the proposal,
- review of third party submissions, and
- preparation and giving of Expert Evidence in accordance with Planning Panels Victoria – Guide to Expert Evidence.

2.3.2 Experiments

I have visited the site to observe traffic and parking activity within the nearby area.

I have adopted the Traffic Report previously prepared by Traffix Group (Ref 18820R#2, dated February, 2017). This report included the following investigations:

- Traffic movement counts have been undertaken for the intersections of Henry Street with Corio-Waurn Ponds Road and Reynolds Road. The survey was conducted between 8-9am and 5-6pm on Thursday 23rd July, 2015.
- A 7-day automatic tube count traffic survey was conducted for Henry Street between Stephen Street and Johnston Street for week beginning the 26th July, 2015.

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2.3.3 Reference Documents

The following key documents have been relied upon when preparing this report:

- Various City of Greater Geelong Planning Scheme Amendment C251 documentation.
- Relevant sections of the City of Greater Geelong Planning Scheme.
- Traffic Report prepared by Traffix Group (Ref: 18820R#2, dated February, 2017¹)
- Third party submissions.

¹ There is a minor error on the front page of the report, dating it February, 2016.

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3 Background, Proposal and Assessment

My assessment is based on the exhibited documents for Amendment C251 of the City of Greater Geelong Planning Scheme.

The proponent has lodged a combined planning permit and planning scheme amendment application with Council, pursuant to S96A of the Act.

Amendment C251 seeks to introduce the following changes to the City of Greater Geelong Planning Scheme:

- Zone the land to the General Residential Zone Schedule 1;
- Apply the Development Plan Overlay Schedule 35 to the land;
- Apply the Environmental Audit Overlay to the land; and
- Replace the Schedule to Clause 61.03 with a new Schedule.

The application is a combined application for Planning Scheme Amendment and an application for a Planning Permit. The planning application is for a residential development of 26 attached dwellings and 61 residential lots and forms Stage 1 of the redevelopment of the site.

For my assessment, I have adopted the Traffic Report prepared by Traffix Group, Ref: 18820R#2 (dated Feb, 2017). This report was prepared by my team and I was the responsible Director for this project. This report is attached at Appendix A of this statement.

My assessment has also been based on the amended plans prepared by Genton Architecture dated 18 May, 2017. These are attached at Appendix B.

These plans include only minor changes from the application plans on which the original traffic report is based. There is no change to the road layout or the number of lots and consequently they have no material impact on the traffic assessment contained in the original traffic report.

4 Consideration of Third Party Submissions

The following table sets out my comments in relation to the traffic engineering related issues raised by third party submitters relating to Planning Scheme Amendment C251.

Table 1: Consideration of Third Party Submissions

Submission No.	Traffic Engineering Matter Raised	Response
1 - AusNet	None.	-
2 - Barwon Water	None.	-
3 - Bicycle Users Group Geelong	<p><i>The proposed development does not adequately cater for people to ride in safety down the length of Henry street or within the development. The development returning vehicle volumes will discourage current bike use further, and potential riders because of the lack of suitable infrastructure implemented with the development. This street links the priority bicycle network (PBN) to local schools, reserves and is critical to the local bicycle network.</i></p> <p><i>The submission suggests possible solutions to better support riding, walking and road safety:</i></p> <ul style="list-style-type: none"> • <i>Allocation of infrastructure to encourage riding by residents and serve the needs of community on all streets within the development and on Henry Street. This can be achieved a number of ways but not limited to:</i> <ul style="list-style-type: none"> ○ <i>Separated bike lanes.</i> ○ <i>Traffic calming on the Henry Street. The street design should aim for 30km/hr for broad safety and amenity.</i> ○ <i>Disconnection of Henry Street to through vehicles except pedestrians and bike riders.</i> ○ <i>Make Henry Street one way to vehicles to provide space for riders.</i> ○ <i>Shared treatment on streets within the development to aid slower driving - as mentioned in the traffic report and visualised in the guidelines but not specified in the plans.</i> ○ <i>30km/hr speed limit for the internal streets. 40km/hr for Henry Street (this is the stated target speed but not specified as that the speed limit will be changed).</i> ○ <i>Allowing parking on one side of the streets across the development will clear sight lines for riders.</i> 	<p>Many of the issues raised in this submission are for Council to consider as part of a broader transport strategy.</p> <p>None of these treatments suggested by this submission are warranted. Specifically:</p> <ul style="list-style-type: none"> • Separate bicycle lanes are not warranted given the low cyclists and traffic volumes. Cyclists can readily use Henry Street or the internal road network without separate lanes. • A disconnection of Henry Street or a change to one-way operation is a significant change that could cause significant impacts to existing residents and is not warranted in my view. • The layout of the internal streets encourages low vehicle speeds (including bends and short road lengths). • Removing on-street car parking is unnecessary and would encourage higher vehicle speeds. • A 2m wide footpath is proposed on Reynolds (1.5m to Henry Street) and a pedestrian crossing is

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Submission No.	Traffic Engineering Matter Raised	Response
	<ul style="list-style-type: none"> ○ <i>Wider 2m footpaths to enable riding (under 14yrs old) while also supporting pedestrian activity.</i> ● <i>The streets within the development to have raised pedestrian thresholds with zebra crossings at intersections to slow driving to people friendly speeds and encourage sustainable mode of transport.</i> ● <i>The pedestrian crossing on Reynolds Road to be a raised zebra crossing not signals.</i> 	<p>proposed on Reynolds Road.</p>
<p>4 - D. Chittenden</p>	<p><i>There appears to be no planned works to widen Henry Street to cater for increased traffic volume. Having read the proposed development application and supplied supplementary documentation I'm concerned that it did not contain any recommendation to widen Henry from 7m to at least 8m. Henry Street is the only street in the near vicinity that cars can travel to Reynolds Road without going through a Give way signs or over speed hump. Therefore, at peak times (such as school times), it becomes very busy. During the footy season many spectators park in Henry Street to watch South Barwon football matches with cars parked in Henry Street right back to Stephen Street on many occasions. This makes it very difficult to navigate at the present time and would become even more of an issue if there are to be houses (with more cars) on the South side of the street.</i></p>	<p>Henry Street has a cross section of between 7-7.8m in width. As detailed in Section 4.4 of the Traffic Report, the current configuration of Henry Street has adequate capacity to accommodate the development traffic expected and accords with the relevant standards.</p>
<p>5 - DEDJTR</p>	<p>No objection subject to two standard conditions in relation to protecting exiting bus services on Corio Waurm Ponds Road.</p>	<p>Agreed.</p>
<p>6 – G. Heintze</p>	<p><i>The traffic along Reynolds Road is very heavy at school drop-off and pickup times. If any car access to Reynolds Road is given to any of the proposed medium density housing located in Stage 2 which borders along Reynolds Road (see red line in attached document) the situation will become impossible as the road already clogs if someone casually parks in that area during that time. At the Up Property briefing in May 2016 we were told that there would be no car access to Reynolds Road from Stage 2. Can you reassure me please that 1) a solid wooden fence will be placed completely along the western side of the medium density housing in Stage 2 (red line on map) so that the only way for cars to exit Stage 2 is via Henry Street. 2) the stage 2 residents will not have the opportunity to park their car along Reynolds Road during school times and then use a pedestrian access into Stage 2 from its western side. A suggestion is to have a clearway from say 7:30am-10am and 2pm-4:30pm on school days.</i></p>	<p>The draft development plan proposes minimal vehicle access to Reynolds Road.</p> <p>Any existing issues with on-street parking on Reynolds Road should be reviewed by Council, they are not especially relevant to this application.</p> <p>It is not appropriate to deny pedestrian access to properties abutting Reynolds Road.</p>
<p>7 – M & V Sawyer</p>	<p>Does not support non-residential uses due to traffic and parking impacts.</p>	<p>The draft development plan indicates a small retail</p>

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Submission No.	Traffic Engineering Matter Raised	Response
		<p>component may be located at the corner of Henry Street/ Corio Waurn Ponds Road in Stage 3.</p> <p>A small retail use would not have unreasonable traffic and parking impacts on the area.</p>
8 – Tract for Belmont Projects Pty Ltd	Objection to the VicRoads requirements to upgrade the Corio Waurn Ponds Road/Henry Street intersection.	VicRoads has withdrawn their requirements for an intersection upgrade at this intersection.
9 – VicRoads	<p>Initially had no objection to the application, subject to alterations to the Corio Waurn Ponds/Henry Street intersection.</p> <p>In an email dated 18th May, 2017, VicRoads have withdrawn their requirements for any alterations of this intersection.</p>	As set in detail within the Traffic Report prepared by Traffix Group, intersection works are not required at this intersection.
10 – S & N Voorinde	Suggestion to signalise Kidman Ave and Corio Waurn Ponds Road and create a fourth intersection leg with the subject site.	The proposal before the Panel is to use the existing Corio Waurn Ponds Road/Henry Street intersection and I am satisfied that this arrangement as proposed is acceptable.
11- B Castles	None.	-

4.1 Response to Council Position Regarding Impacts on Corio Waurn Ponds Road/ Henry Street Intersection

VicRoads has withdrawn any requirement for further works or analysis at the Corio Waurn Ponds Road/Henry Street intersection, as detailed above. Council's response is as follows:

Corio Waurn Ponds Road is classified as a Road Zone Category 1 under the responsibility of VicRoads. As a result of the VicRoads submission references in the exhibition version Development Plan and Permit 408-2016 to undertake works to Corio Waurn Ponds Road will be removed. The submission does not call for the removal of the works from the Development Plan Overlay Schedule however it follows that it should.

Council is somewhat uncomfortable for both the Schedule and Development Plan to be silent on this matter given the form of future stages, particularly Stage 3, are not certain. It is therefore considered appropriate to include a provision that recognises the potential for future works. This approach is consistent with the provision for the Henry Street/ Reynolds Rd intersection.

I am satisfied that no further traffic analysis is required. The Traffic Report reviews that traffic impacts of all 3 development stages and concludes that mitigating works are not required at the intersection

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of Corio Waurn Ponds Road/Henry Street. VicRoads as the road authority agrees. On this basis, I see no reason to include a requirement under the DPO for future analysis/works at this intersection.

5 Conclusions

This report has provided an assessment of the potential traffic engineering impacts of Amendment C251 of the City of Greater Geelong Planning Scheme and associated Planning Permit Application.

Having reviewed the relevant background material and in particular the Traffic Report previously prepared by Traffix Group, I am satisfied that there are no reasons why the proposed rezoning and planning permit application should be refused, subject to appropriate conditions.

I have made all inquiries that I believe are desirable and appropriate and there are no matters of significance which I regard as relevant which, to the best of my knowledge, have been withheld from the Panel.



CHARMAINE CHALMERS DUNSTAN

B.E. (Civil) Hons., Masters of Traffic, M.IEAust., F.V.P.E.L.A

Appendix A

Application Traffic Report



Traffic Engineers and Transport Planners

Traffic Engineering Assessment

**Proposed Rezoning and Residential Development
at
1 Henry Street, Belmont**

**Prepared For
Belmont Projects Pty Ltd**

**February, 2016
18820R#2**

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

Traffic Engineering Assessment

Proposed Rezoning and Residential Development at 1 Henry Street, Belmont

Document Control

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Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

1 Introduction

Traffix Group has been engaged by Belmont Projects Pty Ltd to prepare a traffic engineering report for a proposed rezoning and residential development at 1 Henry Street, Belmont.

This report provides a detailed traffic engineering assessment of the parking and traffic issues associated with the proposed development.

2 Proposal

The proposal is to rezone the former CSIRO site at 1 Henry Street, Belmont from Commonwealth Land (CA) to General Residential (GRZ1). At the same time, a Planning Permit is sought for the development of Stage 1.

The site will be redeveloped for residential purposes in three stages and for the purposes of our assessment we have adopted a total number of 220 dwellings at the completion of Stage 3. The number of dwellings for Stage 1 will be as per the Planning Permit Application. It should be noted that the final number of dwellings in Stages 2 and 3 may vary slightly, however these will generally be in accordance with the Masterplan. Both stages will be subject of later Planning Permit Applications.

A description of each stage is provided below:

- Stage 1 will be developed first and is the subject of the Planning Permit application. This stage will comprise 61 residential lots and 26 semi-detached townhouses. A detailed design has been provided for the townhouses however, the design of the dwellings on the residential lots has not been detailed (the future owners will design and build their own dwelling on each lot). Vehicle access to Stage 1 will be via a U-shaped public road link between Henry Street, although lots fronting Henry Street will have direct access to Henry Street.
- Stages 2 is likely to comprise semi-detached or attached townhouses with two and three-bedrooms each. Stage 2 will be accessed via a network of private roads accessing Henry Street. Some lots may have direct frontage to Henry Street. An east-west pedestrian linkage is proposed to link Stages 1 and 3.
- Stages 3 is likely to comprise semi-detached or attached townhouses with two and three-bedrooms each. Two access points are proposed, one to Henry Street and one the new internal access road servicing Stage 1. A park area has been nominated as part of stage 3. This park will also provide pedestrian connections between Stages 1 and 2 to Corio-Waurn Ponds Road.

A copy of the Masterplan and detailed plan for Stage 1, prepared by Genton Architecture (dated 4th March, 2016) is attached at Appendix A to this report.

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

3 Existing Conditions

The development site is located on the block bordered by Princes Highway, Henry Street and Reynolds Road in Belmont. An aerial photograph of the site and a locality are provided at Figure 1 and Figure 2.

The subject site is irregular in shape and has a site area of approximately 62,000m². The site has frontages of approximately 127m to Corio-Waurn Ponds Road (formerly Princes Highway), 600m to Henry Street and approximately 110m to Reynolds Road.

The site was previously occupied by CSIRO, however it has been closed for some time. We understand that the demolition of the existing buildings and site remediation has commenced.

Vehicle access to the site was provided to Henry Street in 6 places. A single vehicle access point is also available to Princes Highway, at the site's southern boundary.

The site is located within a Commonwealth Lane Zone (CA) under the Greater Geelong Planning Scheme as presented in Figure 3.

Land-use adjacent to the site is generally residential.

Significant non-residential land-uses in the surrounding area include:

- McDonald Reserve, located in Reynolds Road, extending north from Henry Street, and
- Clairvaux Catholic Primary School, located opposite the site in Reynolds Road.



Figure 1: Subject Site – Aerial Photograph

Source: Nearmap

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

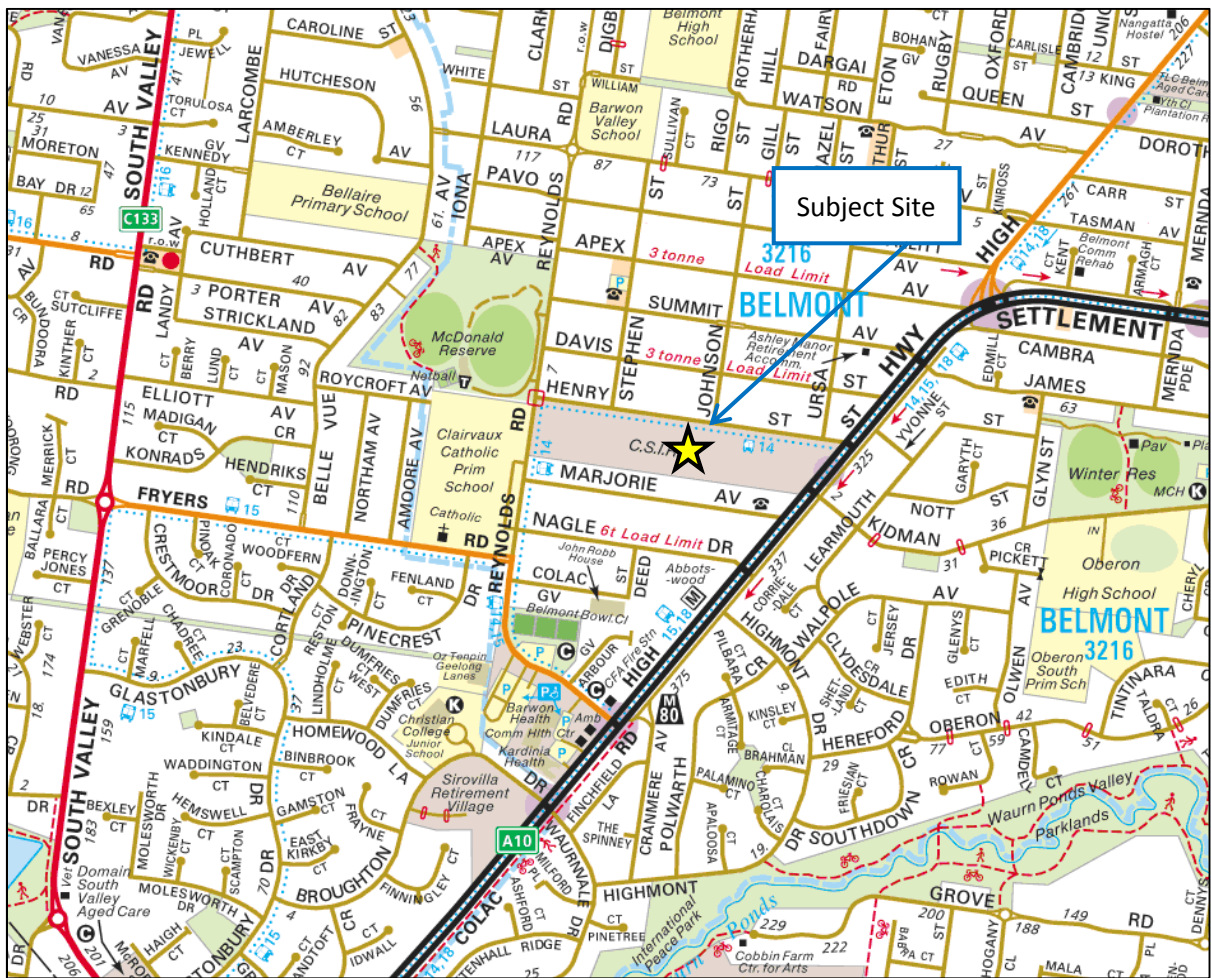
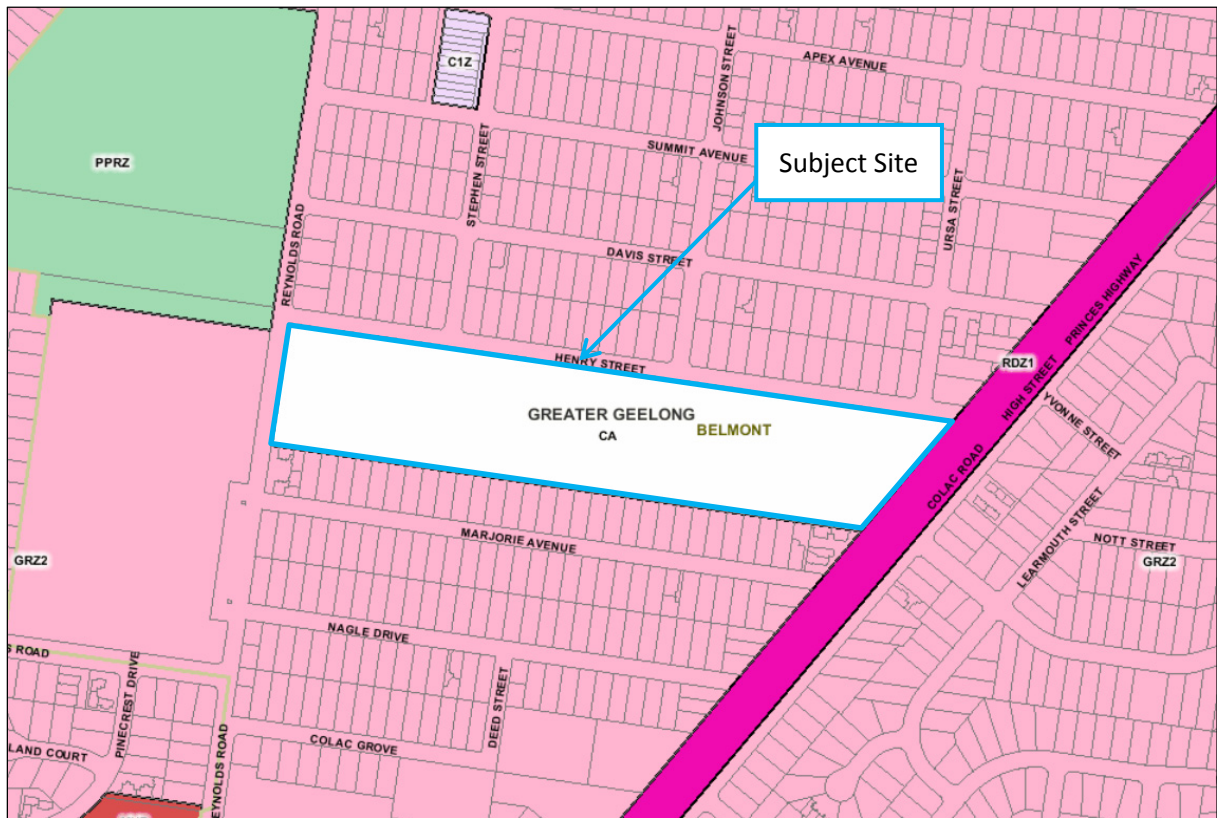


Figure 2: Locality Map

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Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development



Zones Legend

ACZ - Activity Centre	IN1Z - Industrial 1	R1Z - General Residential
B1Z - Commercial 1	IN2Z - Industrial 2	R2Z - General Residential
B2Z - Commercial 1	IN3Z - Industrial 3	R3Z - General Residential
B3Z - Commercial 2	LDRZ - Low Density Residential	RAZ - Rural Activity
B4Z - Commercial 2	MUZ - Mixed Use	RCZ - Rural Conservation
B5Z - Commercial 1	NRZ - Neighbourhood Residential	RDZ1 - Road - Category 1
C1Z - Commercial 1	PCRZ - Public Conservation & Resource	RDZ2 - Road - Category 2
C2Z - Commercial 2	PDZ - Priority Development	RGZ - Residential Growth
CA - Commonwealth Land	PPRZ - Public Park & Recreation	RLZ - Rural Living
CCZ - Capital City	PUZ1 - Public Use - Service & Utility	RUZ - Rural
CDZ - Comprehensive Development	PUZ2 - Public Use - Education	SUZ - Special Use
DZ - Dockland	PUZ3 - Public Use - Health Community	TZ - Township
ERZ - Environmental Rural	PUZ4 - Public Use - Transport	UFZ - Urban Floodway
FZ - Farming	PUZ5 - Public Use - Cemetery/Crematorium	UGZ - Urban Growth
GRZ - General Residential	PUZ6 - Public Use - Local Government	
GWAZ - Green Wedge A	PUZ7 - Public Use - Other Public Use	
GWZ - Green Wedge		Urban Growth Boundary

Source: Planning Schemes Online

Figure 3: Land Use Zoning Map

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

3.1 Road Network

Corio-Waurn Ponds Road (formerly Princes Highway) is an Arterial Road and Road Zone Category 1 Road Zone under the Planning Scheme. Corio-Waurn Ponds Road is aligned in a northeast-southwest direction.

Adjacent to the site, Corio-Waurn Ponds Road provides two traffic lanes in each direction divided by a central median. The north side of the carriageway also provides a wide shared parking and bicycle lane. A service road is provided on the south side.

A signalised pedestrian crossing is located 80m south of Henry Street.

A 70km/h speed limit applies to Corio-Waurn Ponds Road.

Henry Street is a local road providing an east-west connection between Corio-Waurn Ponds Road and Reynolds Road.

Henry Street has a carriageway width varying between approximately 7m and 7.8m. This width provides for either a traffic lane in each direction and kerbside parking on one side of the road or kerbside parking on both sides of the road and a single lane for two-way traffic.

On-street parking in Henry Street is unrestricted.

The intersection of Henry Street and Corio-Waurn Ponds Road is an unsignalised T-intersection. A median break allows for all turning movements.

There were a number of bus stops spaced along Henry Street at the time of the site inspection, however Bus Route 14 that previously operated along Henry Street has recently been cancelled and replaced by BUs Route 1 that operates along Corio-Waurn Ponds Road.

A footpath is only provided on the north-side of Henry Street (i.e. not along the subject site's frontage).

The default urban speed limit of 50km/h applies to Henry Street.

Reynolds Road is a local road aligned in a north-south direction between Corio-Waurn Ponds Road in the south and William Street in the north. Adjacent to the site Reynolds Road has a carriageway width of 8.5m. This width provides for either a traffic lane in each direction and kerbside parking on one side of the road or kerbside parking on both sides of the road and a single lane for two-way traffic.

On-street parking in Reynolds Road is generally unrestricted, although some areas of 'No Stopping 8:15am-9:30am, 3pm-4pm School Days' are located near the school.

A 50km/h speed limit applies to Reynolds Road, with a 40km/h school zone speed limit applying between 8-9:30am and 2:30-4pm on School days.

Photographs depicting the surrounding road network are presented in Figure 4 to Figure 9.

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development



Figure 4: Corio-Waurm Ponds Road – view north-east



Figure 5: Corio-Waurm Ponds Road – view south-west



Figure 6: Henry Street – view west from Princes Highway



Figure 7: Henry Street – view east from Reynolds Road



Figure 8: Reynolds Road – view north



Figure 9: Reynolds Road – view south

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

3.2 Existing Traffic Conditions

Traffix Group has undertaken a number of traffic surveys in the area surrounding the site. These surveys were undertaken after CSIRO had ceased operation on the site.

A 7-day automatic tube count traffic surveys of Henry Street between Stephen Street and Johnson Street for week beginning the and 26th July, 2015. A summary of the results are presented below at Table 1 and the detailed results are attached at Appendix B.

Table 1: Traffic Count of Henry Street

Characteristic	Values		
	Eastbound	Westbound	Total
24hr Weekday Average	509 vehicles per day	580 vehicles per day	1,090 vehicles per day
AM Peak Hour Volume	68 vehicles per hour	80 vehicles per hour	141 vehicles per hour
AM Peak Hour	8am-9am	8am-9am	8am-9am
PM Peak Hour Volume	84 vehicles per hour	98 vehicles per hour	182 vehicles per hour
PM Peak Hour	3pm-4pm	3pm-4pm	3pm-4pm
85th Percentile Speed	56km/h	61km/h	59km/h

The above table indicates that Henry Street carries a two-way traffic volume of approximately 1,100 vehicles per weekday and a two-way traffic volume of approximately 142-182 vehicles per peak hour.

The PM peak hour for Henry Street occurs between 3-4pm, which coincides with the afternoon school pick-up period.

It should also be noted that the 85th percentile speed along Henry Street was 59km/h, above the speed limit of 50km/h. This indicates that a proportion of the traffic along Henry Street is exceeding the speed limit. Council should continue to monitor this situation.

Traffix Group has also undertaken peak hour traffic counts of the intersections of Henry Street with Corio-Waurn Ponds Road and Reynolds Road. The count was undertaken between 8am-9am and 5pm-6pm on Thursday 23rd July, 2015. While the surveys do not coincide with the recorded PM peak hour for Henry Street (school pick-up peak hour), the 5pm-6pm time period is the likely peak period for the proposed residential development on the site and nearby residential land uses.

Figure 10 provides the results of these counts.

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

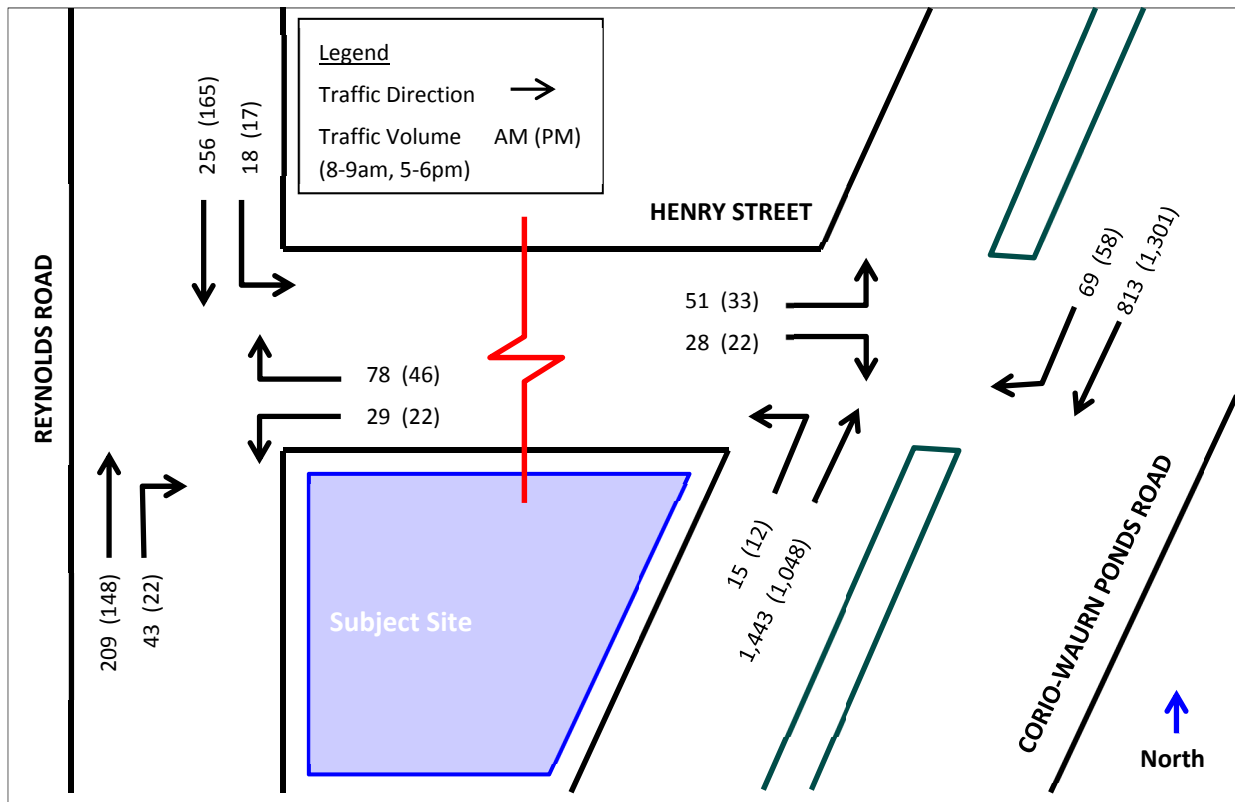


Figure 10: Existing Traffic Conditions

3.2.1 Analysis of Existing Traffic Conditions

Sidra Intersection 6.1 has been used to model the performance of the intersection between Corio-Waurn Ponds Road and Henry Street. The assessment of the intersection's performance was made on the basis of the traffic volumes presented in Figure 10.

The adopted intersection layout is presented at Figure 11. It should be noted that the model of the intersection has been completed using the network function, as recommended by Sidra for unsignalised intersections where a staged crossing of the main road is possible. The location of the right turn lane into Henry Street from Corio-Waurn Ponds Road (being located on the northbound carriageway) is a function of the model and accords with how Sidra currently models a this type of intersection.

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

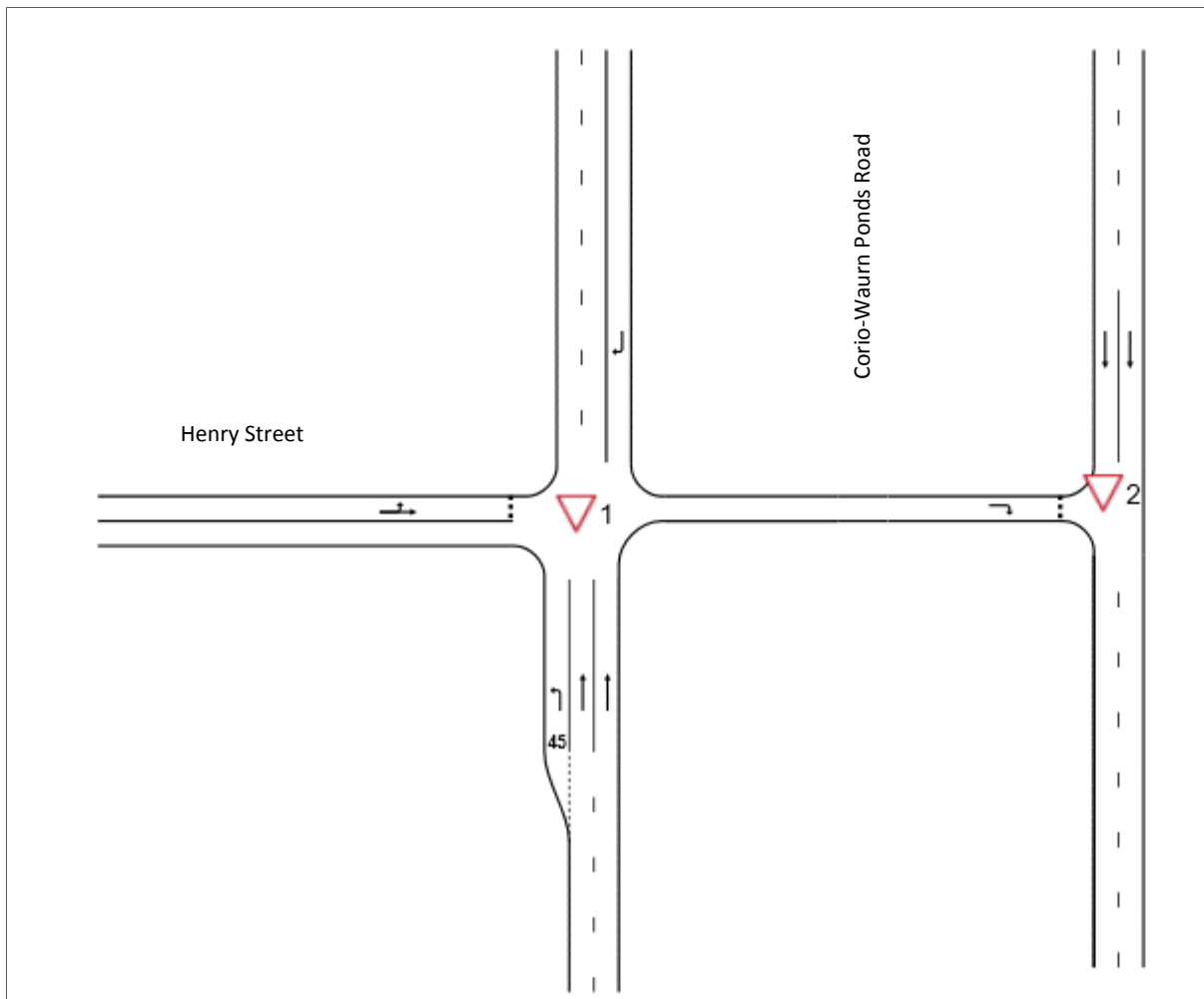


Figure 11: Sidra Intersection Layout

This assessment allows for:

- The Sidra default gap acceptance values, which are referenced in the latest Austroads standards.
- The peak hour traffic volumes for each movement were sourced from the turning movement surveys (refer to Figure 11).
- The intersection was assumed to be flat.
- A heavy vehicle percentage of 3% was assumed for all vehicle movements.

The intersection capacity analysis allows estimation of key operating parameters such as intersection degree of saturation (DoS), average delay and 95th percentile queue lengths, which are described below:

- Degree Of Saturation (DoS) – measure of intersection performance expressed as a ratio of demand/capacity. A DOS greater than 0.90 is generally regarded as unsatisfactory for an unsignalised intersection, see shown in the table below.

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Level of Service		Intersection Degree of Saturation	
		Unsignalised intersection	Signalised Intersection
A	Excellent	≤ 0.60	≤ 0.60
B	Very Good	0.60 – 0.70	0.60 – 0.70
C	Good	0.70 – 0.80	0.70 – 0.90
D	Acceptable	0.80 – 0.90	0.90 – 0.95
E	Poor	0.90 – 1.00	0.95 – 1.00
F	Very Poor	≥ 1.0	≥ 1.0

- 95th Percentile Queue Length (m) – one car represents a 7m queue
- Average delay - no. of seconds delayed

The Sidra assessment results are set out in the table below for the for the AM and PM peak periods. Appendix C provides the Sidra output summary for this analysis.

Based on the analysis below, all movements at this intersection operate at LOS A or at an ‘excellent’ level of service.

The average queue lengths and delays correspond well to the on-site observations by Traffix Group.

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

Table 2: Existing Intersection Performance

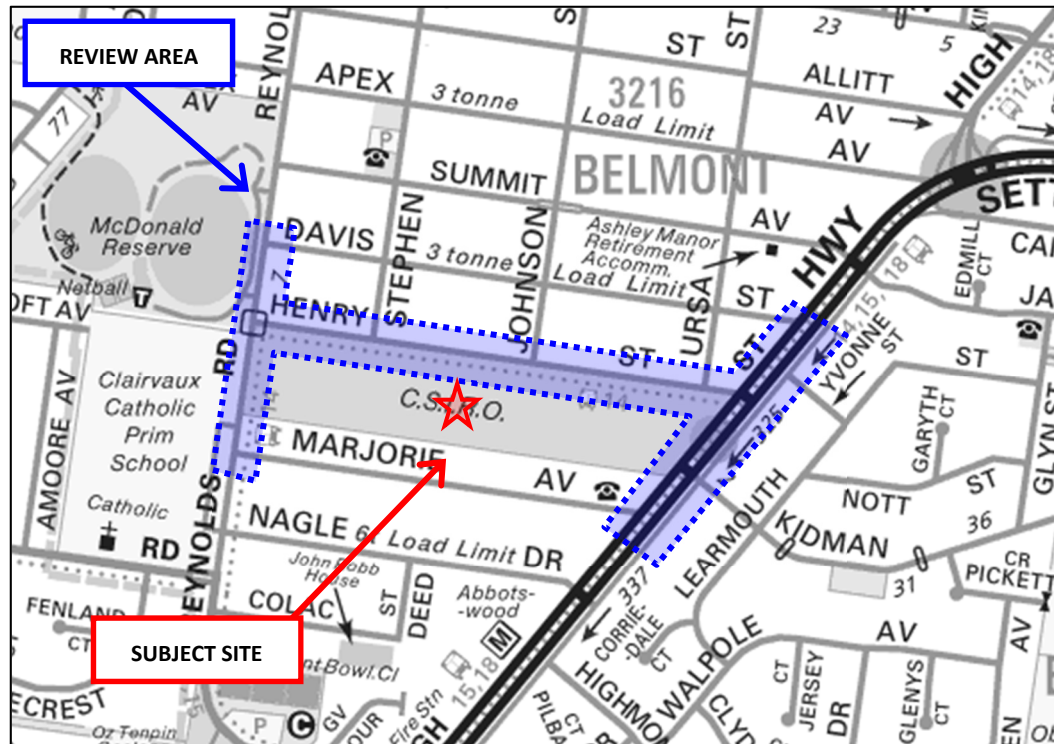
Intersection Approach	Movement	Demand (veh/h)	Degree of Sat.	Level of Service	95 th Percentile Queue (veh)	Average Delay (sec)
AM Peak Hour						
Corio-Waurn Ponds Road: South	Left	16	0.009	A	0.0	5.6
	Through	1,519	0.397	A	0.0	0.1
Corio-Waurn Ponds Road: North	Through	856	0.224	A	0.0	0.0
	Right	73	0.0534	A	2.0	43.3
Henry Street: West	Left	54	0.388	A	1.6	15.5
	Right to median	29	0.388	A	1.6	50.4
	Right to C-W Rd	29	0.046	A	0.1	3.7
PM Peak Hour						
Corio-Waurn Ponds Road: South	Left	13	0.007	A	0.0	5.6
	Through	1,103	0.288	A	0.0	0.0
Corio-Waurn Ponds Road: North	Through	1,369	0.358	A	0.0	0.0
	Right	61	0.225	A	0.8	18.5
Henry Street: West	Left	35	0.149	A	0.6	8.6
	Right to median	23	0.149	A	0.6	21.5
	Right to C-W Rd	23	0.072	A	0.2	9.5

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3.3 Road Safety Review

A review of road casualty crash statistics for the past 5 years of available data (1st January, 2009 to 31st December, 2013). The review included the area indicated in the figure below.



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Figure 12: Casualty Crash Review Area

A summary of the reported casualty crashes is provided in the table below.

A total of 2 casualty crashes were recorded, both at the intersection of Corio-Waurn Ponds Road and Kidman Avenue. Accordingly, there have been no casualty crashes recorded along Henry Street or its intersections in the last 5 years.

Table 3: Road Safety Review

Location	Date	Time	Severity	Condition	DCA Code	Notes
Corio-Waurn Ponds Road & Kidman Avenue	Mon 28/02/2011	16:00	OI	Day, Dry	113	Right near. Car turning right out of Kidman Avenue failed to give way to southbound car.
	Mon 18/03/2013	08:20	OI	Day, Wet	113	Right near. Car turning right out of Kidman Avenue failed to give way to southbound car.

LEGEND:

OI: Other Injury SI: Serious Injury F: Fatality (C): Bus/Coach
 (B): Bicyclist (M): Motorcyclist (P): Pedestrian (RT): Rigid Truck

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3.4 Public Transport

The site has access to public transport with bus services located within walking distance from the site.

Bus Route 1 provides a service between Waurn Ponds and Corio via Belmont, South Geelong, the Geelong CBD and North Geelong. Services operate between 6:00am-9:10pm on weekdays, 7:25am-8:30pm Saturday and 8:25am-8:30pm Sunday.

The service provides 20min frequencies on weekdays and 30min frequencies on weekends.

A map of the public transport network surrounding the site is provided at Figure 13 below.

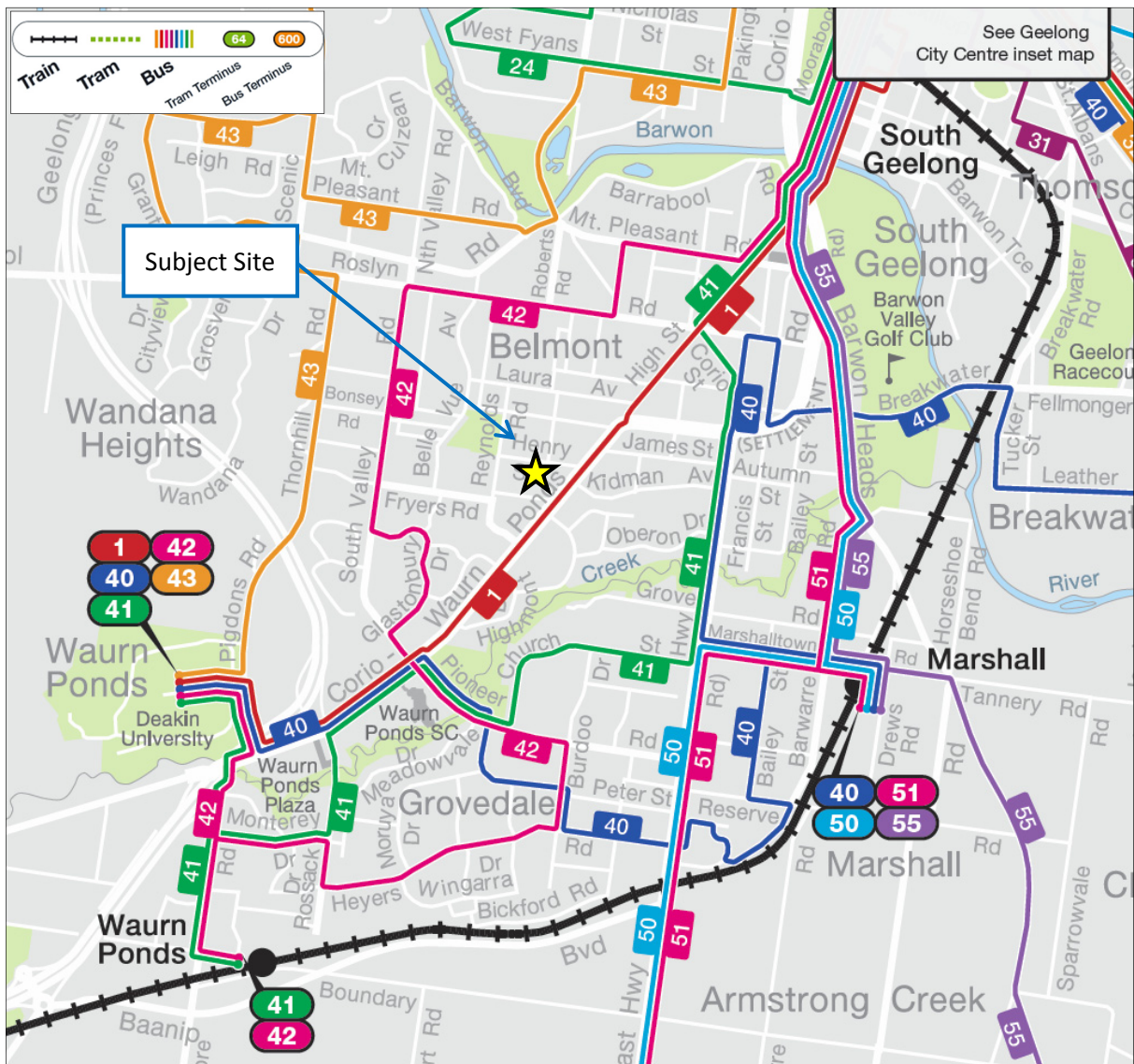


Figure 13: Public Transport Map

Source: ptv.vic.gov.au

4 Traffic Impact Assessment

The following presents an assessment of the predicted traffic impact of the proposed rezoning from a Commonwealth Land Zone to a General Residential Zone.

The rezoned site is expected to accommodate 220 residential dwellings upon completion of Stage 3. The assessment assumes that the majority of lots are occupied by two or three-bedroom dwellings, with one or two car spaces, respectively.

The above level of development on the site has been adopted for planning purposes only, in order to assess the likely traffic impacts of the rezoning. The ultimate number and type of dwellings to be provided on the site would be determined at a later date as part of a separate town planning process for Stages 2 and 3.

4.1 Traffic Generation Rates

The following estimates the traffic volumes generated by the proposed development.

Two-bedroom dwellings with one car space are likely to generate in the order of 4-5 vehicle trips per day. Three bedroom dwellings with two car spaces are likely to generate in the order of 6-8 vehicle trips per day¹.

Given the site’s location likely mix of two and three bedroom dwellings within the subject land, the proposed dwellings are expected to conservatively generate an average of 6 vehicle trip ends per dwelling per day, with 10% of traffic occurring in each peak hour.

The above traffic generation rates are conservative. There may be cases where lesser rates are appropriate, such as if a portion of the site was developed for smaller dwellings or apartments.

A summary of the predicted traffic generation for uses within the subject land is presented at Table 7.

Table 4: Estimated Traffic Generation

Land Use	Size/No.	Peak Hour Traffic Generation		Daily Traffic Generation	
		Rate	Veh/hr	Rate	Veh/day
Dwellings	220	0.6 per dwelling	132	6 per dwelling	1,320

4.2 Traffic Distribution Model

All of the development traffic will have access to Henry Street. Development traffic is expected to travel east or west to Corio-Waurn Ponds Road or Reynolds Road. The traffic distribution model considers the layout of the surrounding road network (location and direction of arterial roads and

¹ Residential traffic generation rates for *flats or units* is typically in the range of 3 to 5 vehicle trip ends per dwelling per day. Residential traffic generation rates for *dwellings in middle suburbs* is typically in the range of 5 to 8 vehicle trip ends per dwelling per day (Traffic Engineering & Management, K.W. Ogden and S.Y. Taylor-2003, pp. 9.1.5).

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1 Henry Street, Belmont: Proposed Rezoning and Residential Development

freeways) and the likely destinations for vehicles arriving and departing from the subject land (Geelong CBD, Waurm Ponds Shopping Centre, etc.).

The following assumptions have been adopted for the traffic distribution model for the subject land:

- Traffic pattern of traffic arriving and departing the site will be the same.
- Development traffic arriving and departing the site is expected to be split 70/30 between Corio-Waurm Ponds Road and Reynolds Road, respectively.
- At Corio-Waurm Ponds Road, traffic will be split in the same manner as traffic already accessing Henry Street, which is approximately 67% to/from the north and 33% to/from the south.
- At Reynolds Road traffic will be split approximately 67% to/from the south and 33% to/from the north.
- Based on our previous experience with similar residential uses, the distribution of peak hour traffic is expected to be split:
 - 20% inbound and 80% outbound in the AM Peak, and
 - 70% inbound and 30% outbound in the PM peak.

The predicted arrival and departure distribution from the site is provided in Figure 14.

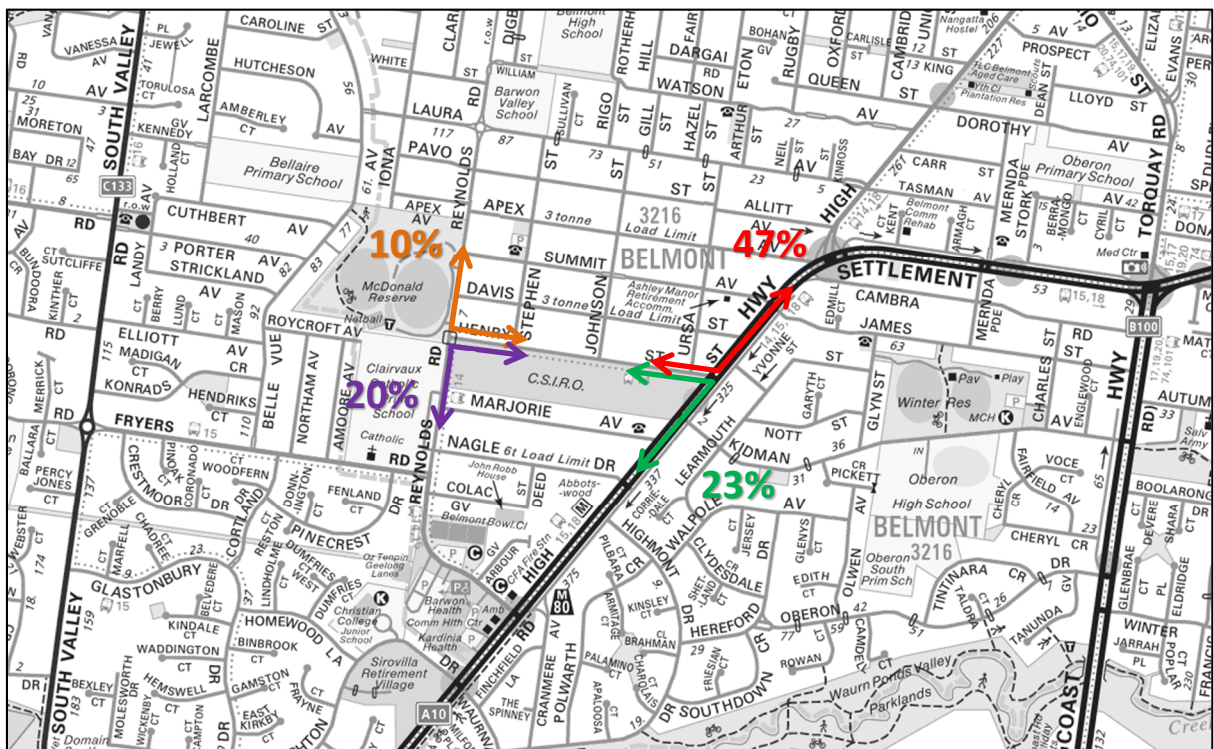


Figure 14: Expected Traffic Departure Distribution

Source: Melway Publishing

Figure 15 outlines the peak hour traffic volumes generated by the development.

Figure 16 illustrates the post-development traffic volumes. The previous use of the site by CSIRO had essentially ceased by the time of the surveys and accordingly, no traffic has been deducted for the historical use of the site.

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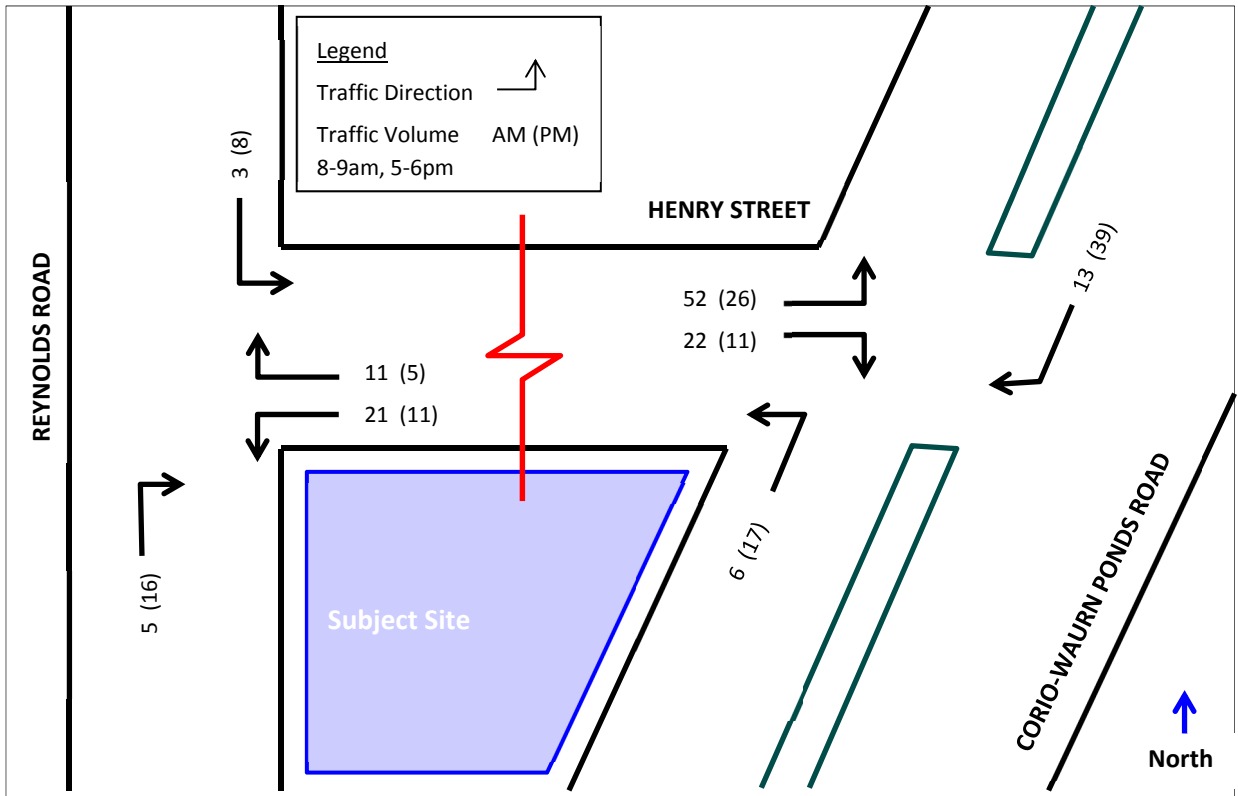


Figure 15: Development Traffic Volumes

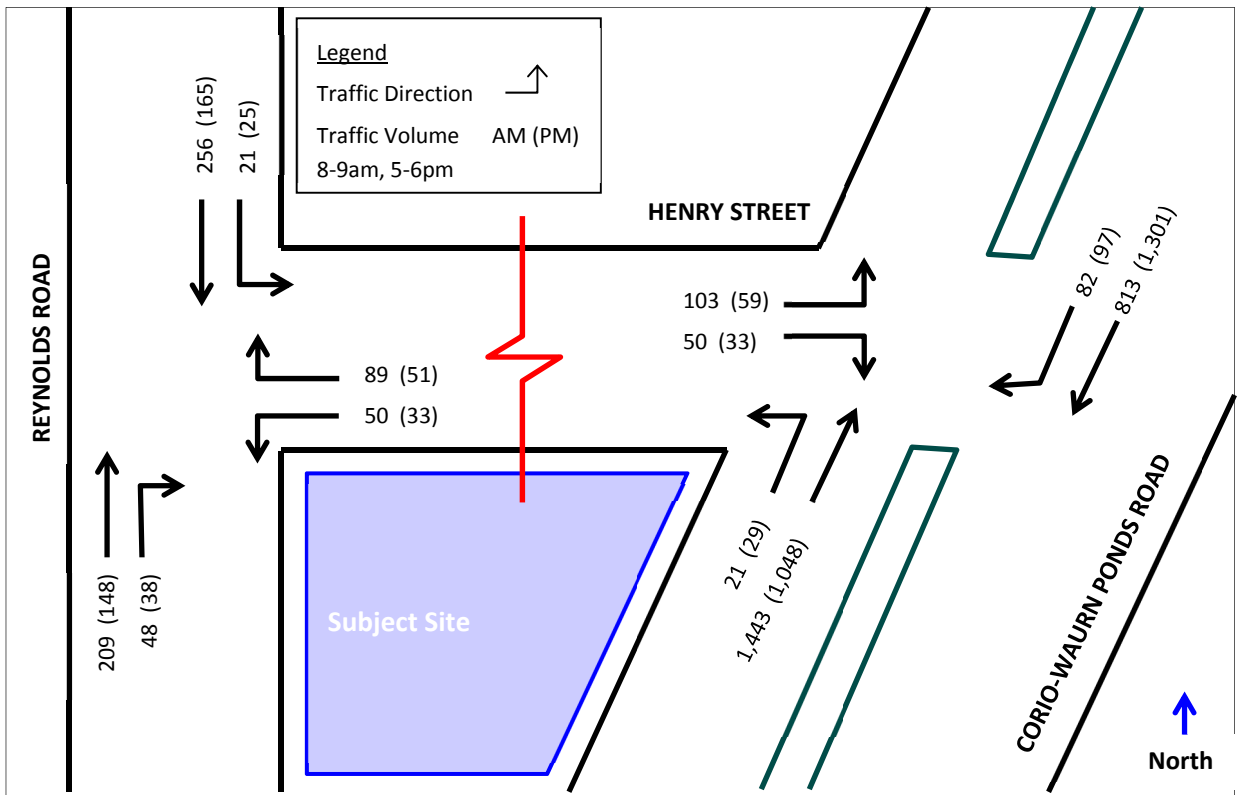


Figure 16: Post-Development Traffic Volumes

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1 Henry Street, Belmont: Proposed Rezoning and Residential Development

4.3 Traffic Impact Analysis

Corio-Waurn Ponds Road and Henry Street

Sidra 6.1 has been used to assess the impact of the additional development traffic on this intersection.

For the assessment only development traffic was added to the same model used to assess the existing traffic conditions at this intersection. No changes were made to the configuration of the intersection.

The Sidra assessment results are set out in Table 5 and Table 6 for the AM and PM peak periods, respectively. Appendix D provides the detailed Sidra output for this analysis.

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Table 5: Change in intersection performance – AM Peak hour

Intersection Approach	Movement	Post-Development Intersection Performance					Change in Intersection Performance				
		Demand* (veh/h)	Degree of Sat.	Level of Service	95 th Percentile Queue (veh)	Average Delay (sec)	Demand* (veh/h)	Degree of Sat.	Level of Service	95 th Percentile Queue (veh)	Average Delay (sec)
Corio-Waurn Ponds Road: South	Left	22	0.012	A	0.0	5.6	6	0.003	-	0	0
	Through	1,519	0.397	A	0.0	0.1	0	0	-	0	0
Corio-Waurn Ponds Road: North	Through	856	0.224	A	0.0	0.0	0	0	-	0	0
	Right	86	0.640	B	2.6	49.2	13	0.106	A to B	0.6	5.9
Henry Street: West	Left	108	0.732	C	4.6	31.4	54	0.344	A to C	3	15.9
	Right to median	53	0.732	C	4.6	71.2	24	0.344	A to C	3	20.8
	Right to C-W Rd	53	0.082	A	0.3	3.8	24	0.036	-	0.2	0.1

*Note: Sidra volumes are slightly higher than recorded or expected volumes

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Table 6: Change in intersection performance – PM Peak hour

Intersection Approach	Movement	Post-Development Intersection Performance					Change in Intersection Performance				
		Demand* (veh/h)	Degree of Sat.	Level of Service	95 th Percentile Queue (veh)	Average Delay (sec)	Demand* (veh/h)	Degree of Sat.	Level of Service	95 th Percentile Queue (veh)	Average Delay (sec)
Corio-Waurn Ponds Road: South	Left	31	0.017	A	0.0	5.6	18	0.01	-	0	0
	Through	1,103	0.288	A	0.0	0.0	0	0	-	0	0
Corio-Waurn Ponds Road: North	Through	1,369	0.358	A	0.0	0.0	0	0	-	0	0
	Right	102	0.384	A	1.5	21.4	41	0.159	-	0.7	2.9
Henry Street: West	Left	62	0.251	A	1.0	9.2	27	0.102	-	0.4	0.6
	Right to median	35	0.251	A	1.0	24.6	12	0.102	-	0.4	3.1
	Right to C-W Rd	35	0.109	A	0.3	9.7	12	0.037	-	0.1	0.2

*Note: Sidra volumes are slightly higher than recorded or expected volumes

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Based on the above, the additional development traffic will have only a moderate impact on the Corio-Waurn Ponds intersection.

During the PM peak hour, all movements will continue to operate at LOS A or under excellent conditions.

During the AM peak hour, three movements change LOS. These are:

- Right and left turn movements out of Henry Street (LOS C – Good), and
- Right turn movements into Henry Street (LOS B – Very Good).

Delays and queues will remain low and are acceptable. Importantly, the 95th percentile queue for vehicles turning right into Henry Street was 2.6 vehicles, which can easily be accommodated within the 65m length of the right turn lane.

Given the above, we are satisfied that the existing intersection configuration will operate satisfactorily post-development of the subject site and mitigating works are not required.

Reynolds Road/Henry Street Intersection

Only 30% of the development traffic is expected to use Reynolds Road when accessing the site. As set out in Figure 15, this equates to no more than 40 vehicle trips per peak hour and no more than 1 vehicle trip every 3 minutes for any individual movement at this intersection.

The low volumes of development traffic expected to use this intersection, combined with the relatively low current volumes of traffic using Reynolds Road means that the performance of this intersection does not warrant detailed analysis and we are satisfied that the development traffic can be accommodated.

Response to VicRoads Letter

VicRoads has issued a letter setting out its position on the application (dated 25th May, 2016). VicRoads has stated that it has no objection to the proposal, subject to:

- A prohibition of vehicles turning right out of Henry Street.
- A new U-turn facility to be constructed in Corio-Waurn Ponds Roads between Henry Street and Davis Street to allow vehicles to head south from Henry Street along Corio-Waurn Ponds Road.

Based on the traffic assessment above, we are satisfied that the traffic impacts of the development do not warrant any changes to the Henry Street/Corio-Waurn Ponds Road intersection. Post-development of the entire site, no movement leg operates at a Level of Service lower than C (Good). In our view, VicRoads intersection works are not required.

It should also be noted that Stage 1 only comprises 87 dwellings (townhouses or residential lots). The traffic analysis was based on a total of 220 dwellings across all stages. In our view, Stage 1 by itself also does not trigger a need for intersection works (the traffic impacts will be significantly less than the whole development scenario analysed above).

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4.4 Daily Traffic Impacts

Henry Street currently carries a weekday average of 1,090 vehicles per day based on the automatic traffic count undertaken by Traffix Group in July, 2015. The proposed development is expected to generate a total of 1,320 vehicles per day, although this would be split 70/30 between Corio-Waurn Ponds Road and Reynolds Road. Post-development, Henry Street will carry in the order of 2,000 vehicles per day towards Henry Street and 1,400 vehicles per day towards Reynolds Road.

Henry Street is classified as an Access Street - Level 2 under Clause 56.06 of the Greater Geelong Planning Scheme, which is *“a street providing local residential access where traffic is subservient, speed and volume are low and pedestrian and bicycle movements are facilitated.”*

The requirements for this street are listed in the table below.

Table 7: Characteristics of an Access Street - Level 2

Characteristics	Specification
Traffic Volume	2,000vpd to 3,000vpd
Target Speed	40km/h
Carriageway width	7-7.5m with parking on both sides of carriageway
Verge width	4.5m minimum each side
Footpath provision	1.5m wide footpaths on both sides. Footpaths should be widened to 2.0m in vicinity of a school, shop or other activity centre
Cycle path provision	Carriageway designed as a shared zone and appropriately signed.

A total traffic volume of 2,400 vehicles per day is within the target volume of an Access Street Level 2 and accordingly is acceptable. On this basis, we are satisfied that the development can be accommodated by Henry Street.

It should also be noted that once this site is development, there are only limited development opportunities site’s within Henry Street that would increase the volume of traffic within this street significantly.

4.5 Comparison to the Previous Use of the Site

The subject site has for a long time being operated by CSIRO. We understand that the use of the site has ceased at the time of the traffic surveys. Historically, this site would clearly have generated traffic along Henry Street. Given the unique use of the site, it is challenging to compare its former use to another land use such as a warehouse, factory, etc. and make reasonable comparisons of what the site may have generated in the past.

Council has provided historical traffic count data from between 31st January, 2011 and Tuesday 8th February, 2011. The count provided was for only eastbound movements along Henry Street. This

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count was undertaken between Johnston Street and Stevens Street at essentially the same location as the count undertaken by Traffix Group. A comparison between the counts recorded by Traffix Group in 2015 and Council in 2011 is provided in the table below.

CSIRO had multiple vehicle access points along Henry Street, some to the east and some to the west of the traffic count, so these do not reflect all of the traffic generated by CSIRO. They only demonstrate that Henry Street carried more traffic historically than it does now.

The proposed development will also have multiple access points to Henry Street, some to the east and some to the west of where the traffic counts took place. However, it is our general expectation that the level of development traffic using Henry Street would be somewhat similar to previous use of the site by CSIRO in this location.

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Table 8: Comparison of Henry Street Traffic Volumes (Eastbound Only)

Day of Week		Traffic Volume (Time of Day)		
		Council (Feb, 2011)	Traffix Group (July, 2015)	Difference (vph)
Mon	AM	110 (8-9am)	63 (8-9am)	-47
	PM	89 (4-5pm)	73 (3-4pm)	-16
Tue	AM	100 (8-9am)	60 (8-9am)	-40
	PM	91 (5-6pm)	59 (3-4pm)	-32
Wed	AM	90 (8-9am)	68 (8-9am)	-22
	PM	110 (5-6pm)	59 (3-4pm)	-51
Thu	AM	89 (8-9am)	61 (8-9am)	-28
	PM	97 (5-6pm)	84 (3-4pm)	-13
Fri	AM	109 (8-9am)	60 (8-9am)	-49
	PM	85 (3-4pm)	69 (3-4pm)	-16
Sat	AM	63 (11-12pm)	43 (10-11am)	-20
	PM	57 (6-7pm)	41 (5-6pm)	-16
Sun	AM	51 (11-12pm)	39 (11-12pm)	-11
	PM	49 (4-5pm)	26 (1-2pm)	-23

4.6 Internal Traffic Impacts and Road Layout

Stage 1 of the development will be served by a U-shaped public road. This road will have a reservation of 16m and a carriageway width of 7.3m. This accords with the design of an Access Street - Level 1 under Clause 56.06 of the Greater Geelong Planning Scheme.

The generally accepted 'environmental capacity' of an Access Street – Level 1 such as the new public road proposed is 1,000-2,000 vehicles per day as set out in Clause 56.06.

Only the 26 townhouses and 41 of the 'standard' residential lots will have access to the new access Road. Adopting 6 vehicle trip ends per day, these dwellings will generate 402 vehicles per day. Accordingly, the new public road within the subdivision will carry well under the 1,000-2,000 vehicles per day limit suggested by Clause 56.06-8 for an Access Street – Level 1.

The detailed layout of the internal access roads associated with Stages 2 and 3 would be undertaken at the permit application stage of these Stages.

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Based on the above, we are satisfied that the traffic generated by the rezoning can be accommodated on the local road network illustrated in the layout plan.

4.7 Summary of Traffic Impacts

Based on our detailed review above, we are of the opinion that:

- a) The additional development traffic can be accommodated by the Corio-Waurn Ponds Road/Henry Street intersection with only a modest change to intersection performance and mitigating works are not required.
- b) The intersection of Reynolds Road/Henry Street will experience only a moderate increase of traffic which can readily be accommodated.
- c) The daily volume of traffic generated by the proposed rezoning will not exceed the environmental capacity of Henry Street or the new public road.
- d) The overall level of traffic in Henry Street post-development is likely to be somewhat similar to the level of traffic historically generated by CSIRO.

Overall, we are satisfied that the development traffic can be accommodated.

4.8 Parking Assessment

The proposed use of the subject land falls within the land-use category of 'dwelling' under Clause 74 of the Planning Scheme.

The Planning Scheme sets out the parking requirements for new developments under Clause 52.06.

The purpose of Clause 52.06 is:

- *To ensure that car parking is provided in accordance with the State Planning Policy Framework and Local Planning Policy Framework.*
- *To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.*
- *To support sustainable transport alternatives to the motor car.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

Table 1 of Clause 52.06-5 requires car parking for dwellings to be provided at the rates set out in the following table.

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Table 9: Statutory Car Parking Assessment – Clause 52.06-5

Use	Statutory Car Parking Rate (Column A)
One or two-bedroom Dwelling	1 space per dwelling
Three or more Bedroom Dwelling	2 spaces per dwelling
Residential Visitors	1 space per 5 dwellings

*Note: Clause 52.06-5 specifies that where a car parking calculation results in a requirement that is not a whole number, the number of spaces should be rounded down to the nearest whole number.

The proposed development will need to be self-sufficient in car parking terms by providing car parking in accordance with these rates.

4.8.1 Parking for Stage 1

Stage 1 comprises 26 townhouses and 61 residential lots. The 26 townhouses provide car parking for residents of individual dwellings in accordance with the above rates using private garages.

The visitor parking requirement of these townhouses will be accommodated by on-street parking within the new private access road or along Henry Street. The 26 townhouses are provided with 13 indented visitor spaces along the new internal access road, providing visitor parking at a rate of 1 space per 2 lots, which accords with the requirements of Clause 56.06.

The 61 'standard' residential lots will provide off-street parking for residents in accordance with the above rates using private garages. These lots are either 10.5m or 12.5m wide. Allowing for a 4m wide crossover (3m wide including 0.5m wide splays) would allow for 6.5m-8.5m an on-street car space per lot along the new internal access road and Henry Street. Crossovers could also be shared between adjacent lots to increase the length of kerb between crossovers.

4.8.2 Parking for Stages 2 and 3

Car parking for Stages 2 and 3 will be detailed at the Planning Permit Application Stage of each stage. Parking will be provided in accordance with the rates specified at Clause 52.06-5 and would be assessed at the Planning Permit Application Stage.

Stages 2 and 3 will need to provide visitor parking at a rate of 1 space per 5 dwellings. This could include some reliance on on-street parking along the frontages of these Stages to Princes Highway or Henry Street.

4.8.3 Cycling

The subject land has access to bicycle infrastructure. Corio-Waurn Ponds Road provides a shared parking/bicycle lane on the west side of the road and sealed shoulder on the east side. The nearby local road network is suitable for cycling and an off-road bicycle shared path is provided along Waurn Ponds Creek to the south.

Clause 52.34 of the Planning Scheme specifies parking for residential four or more storeys, however in practice is also used as a guide for developments less than four storeys. Each dwelling of Stage 1 will be able to provide adequate bicycle parking opportunities within the private garages provided.

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The provision of bicycle parking for Stages 2 and 3 would be detailed at the Planning Permit Application Stage.

4.8.4 Walkability

Walking is significant mode of transport and the most sustainable transport mode. As an established residential area, most streets provide footpaths on both sides of the road. A signalised pedestrian crossing of Corio-Waurn Ponds Road is provide along the site's frontage.

Some improvements are required. There is currently no footpath along the site's frontage to Henry Street (only on the north side of Henry Street). This footpath will need to be constructed as part of the development of the site.

The new public access road through Stage 1 of the development will have a carriageway width of 16m, sufficient to provide footpaths on both sides of the road.

The future Stages 2 and 3 will be highly walkable with pedestrian links to Stage 1 providing a highly permeable pedestrian network with links Corio-Waurn Ponds Road, Reynolds Road and Henry Street.

4.8.5 Public Transport Accessibility

The public transport services available to the site are detailed at Section 3.4. The site has convenient access to the Route 1 bus service which provides a direct connection between Deakin University and the Geelong CBD. Other services are available by interchanging with this route.

The majority of the site is within 400m walking distance of the bus stops on Princes Highway (the site is approximately 600m long). We are satisfied that this bus route is readily accessible by a short walk (7-8mins).

We are satisfied that the site has reasonable and comparable access to public transport services in the context of other residential areas around Geelong, including the wider Belmont area.

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4.9 Review of Carpark Design and Internal Access Road

Garages

Traffix Group has provided design advice to the project architect to achieve a satisfactory carpark layout. The proposed parking layout has been assessed under the relevant sections of the Planning Scheme (Clause 52.06-8) and the Australian Standard for off-street parking facilities (AS2890.1-2004), where relevant.

Key elements of the design include:

Design Standard 1 – Access

- All garages will have a minimum headroom clearance of 2.2m in accordance with AS2890.1-2004 and Clause 52.06-8.

Design Standard 2 – Car spaces

- Garages accord with the requirements of Clause 52.06-8, specifically:
 - Single width garages are at least 3.5m wide x 6.0m long.
 - Double garages are at least 5.5m wide x 6.0m long.
- Open car spaces in tandem with single garages are provided at 5.5m long to ensure that parked vehicles do not illegally overhang the footpath.

Design Standard 3 – Gradients

- The natural grades of the site are low and accessway grades will accord with the requirements of Clause 52.06-8.

Internal Access Road

The new public road proposed for Stage 1 has been designed as an 'Access Street' under the Infrastructure Design Manual (Version 4.3, dated Sept, 2014). An 'Access Street' under the IDM is required to provide:

- A 16m wide road reservation
- 7.3m wide carriageway
- 3.5m minimum verges
- Parking on both sides
- Footpaths on both sides
- 9m minimum radius to accommodate at 12.5m long truck

In addition, 3m x 3m pedestrian splays are provided at intersections or corners of the internal access road to comply with Clause 56.06.

The proposed design provides some indented parking bays 2.3m wide x 6.7m long. These dimensions accord with Clause 52.06-8 and AS2890.5-1993 (Australian Standard for On-Street Parking).

The public road provides all these features and we are satisfied that it is suitable for its purpose as a public road. A carriageway width of 7.3m also complies with CFA Guidelines for access to local streets by fire appliances.

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

Swept path diagrams demonstrating access by a 12.5m heavy rigid vehicle are attached at Appendix E. This vehicle is larger than both municipal waste collection vehicles and fire appliances. Accordingly, we are satisfied with the accessibility of the new public road.

Based on the above, we are satisfied with the design of the new public road.

5 Conclusions

This report presents a traffic impact assessment of the proposed rezoning of 1 Henry Street, Belmont from Commonwealth Land (CA) to a General Residential 1 Zone (R1Z) and a planning permit application for Stage 1.

The masterplan of the site illustrates a 3 stage residential development to comprise approximately 220 dwellings. Stage 1 comprises 26 townhouses and 61 residential lots serviced by a new public road. The number of dwellings ultimately included in stages 2 and 3 will generally be in accordance with the masterplan (small variations are possible) and would be assessed in detail when a planning permit application is lodged for each stage.

The report assesses the traffic impacts of the above development scenario. This report concludes that the new development traffic can be suitably accommodated within the nearby road network with the following key findings:

- a) The additional development traffic can be accommodated by the Corio-Waurn Ponds Road/Henry Street intersection with only a modest change to intersection performance and mitigating works are not required.
- b) The intersection of Reynolds Road/Henry Street will experience only a moderate increase of traffic which can readily be accommodated.
- c) The daily volume of traffic generated by the proposed rezoning will not exceed the environmental capacity of Henry Street or the new public road.
- d) The overall level of traffic in Henry Street post-development is likely to be somewhat similar to the level of traffic historically generated by CSIRO.

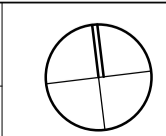
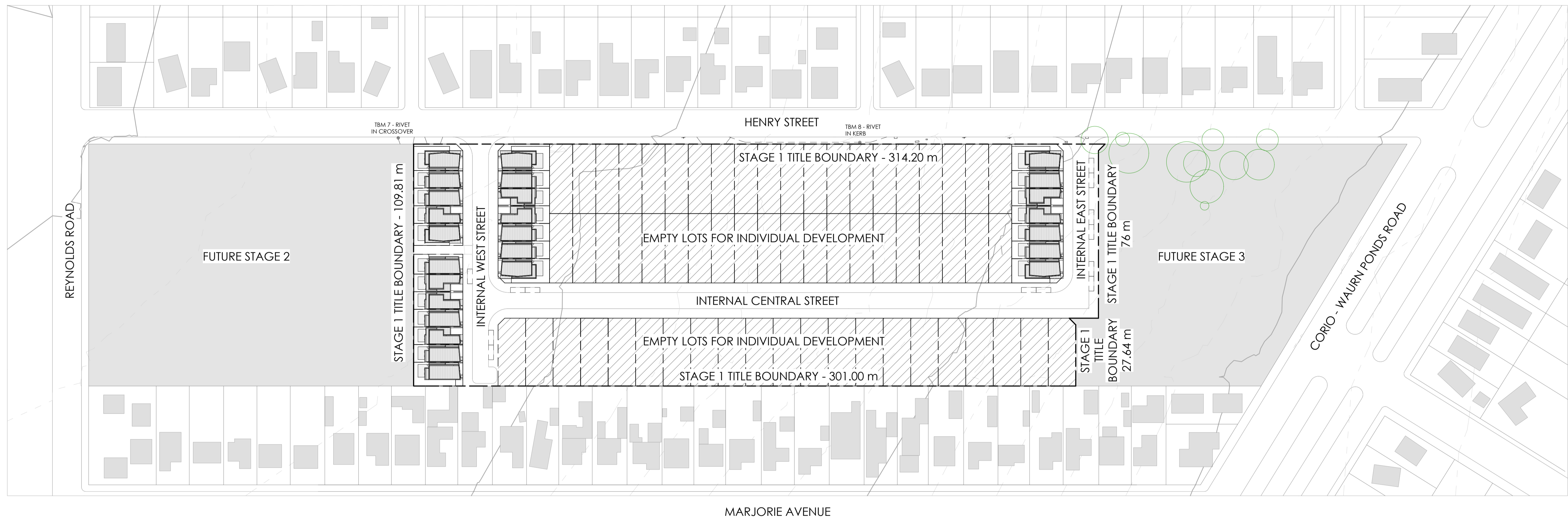
The proposed layout of the new public road accords with Council's current design standards and Clause 56.06 and is of appropriate dimensions to accommodate the expected development traffic.

Car parking for residents of Stage 1 will be provided off-street within private garages. A high level of on-street parking is provided to accommodate visitor parking demands in accordance with Clause 56.06 and 52.06-5 of the Greater Geelong Planning Scheme.

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

Appendix A: Development Plans



DEVELOPMENT SUMMARY	
TOTAL AREA STAGE 1	33,814 SQM
PROPOSED UNITS	
- Type A	12
- Type B	8
- Type C	6
TOTAL	26
TOTAL VISITOR CAR PARKING ON THE STREET	13
TH	TYPE
TH01	TYPE C - CORNER
TH02	TYPE A - DOUBLE GARAGE
TH03	TYPE A - DOUBLE GARAGE
TH04	TYPE B - TANDEM GARAGE
TH05	TYPE C - CORNER
TH06	TYPE A - DOUBLE GARAGE
TH07	TYPE B - TANDEM GARAGE
TH08	TYPE B - TANDEM GARAGE
TH09	TYPE A - DOUBLE GARAGE
TH10	TYPE B - TANDEM GARAGE
TH11	TYPE A - DOUBLE GARAGE
TH12	TYPE A - DOUBLE GARAGE
TH13	TYPE C - CORNER
TH14	TYPE A - DOUBLE GARAGE
TH15	TYPE B - TANDEM GARAGE
TH16	TYPE B - TANDEM GARAGE
TH17	TYPE A - DOUBLE GARAGE
TH18	TYPE A - DOUBLE GARAGE
TH19	TYPE C - CORNER
TH20	TYPE C - CORNER
TH21	TYPE A - DOUBLE GARAGE
TH22	TYPE B - TANDEM GARAGE
TH23	TYPE B - TANDEM GARAGE
TH24	TYPE A - DOUBLE GARAGE
TH25	TYPE A - DOUBLE GARAGE
TH26	TYPE C - CORNER



Areas GFA		Areas P.O.S.	
Townhouse	Area	Townhouse	Area
TH01	Ground floor 121 m ² First floor 93 m ² 214 m ²	TH01	Private open space 55 m ²
TH02	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH02	Private open space 40 m ²
TH03	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH03	Private open space 40 m ²
TH04	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH04	Private open space 40 m ²
TH05	Ground floor 121 m ² First floor 93 m ² 214 m ²	TH05	Private open space 50 m ²
TH06	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH06	Private open space 52 m ²
TH07	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH07	Private open space 52 m ²
TH08	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH08	Private open space 42 m ²
TH09	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH09	Private open space 42 m ²
TH10	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH10	Private open space 40 m ²
TH11	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH11	Private open space 40 m ²
TH12	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH12	Private open space 54 m ²
TH13	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH13	Private open space 54 m ²
TH14	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH14	Private open space 66 m ²
TH15	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH15	Private open space 66 m ²
TH16	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH16	Private open space 50 m ²
TH17	Ground floor 121 m ² First floor 93 m ² 214 m ²	TH17	Private open space 48 m ²
TH18	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH18	Private open space 48 m ²
TH19	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH19	Private open space 48 m ²
TH20	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH20	Private open space 66 m ²
TH21	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH21	Private open space 66 m ²
TH22	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH22	Private open space 50 m ²
TH23	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH23	Private open space 50 m ²
TH24	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH24	Private open space 50 m ²
TH25	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH25	Private open space 48 m ²
TH26	Ground floor 121 m ² First floor 93 m ² 214 m ²	TH26	Private open space 48 m ²
Grand total		Grand total	1288 m ²

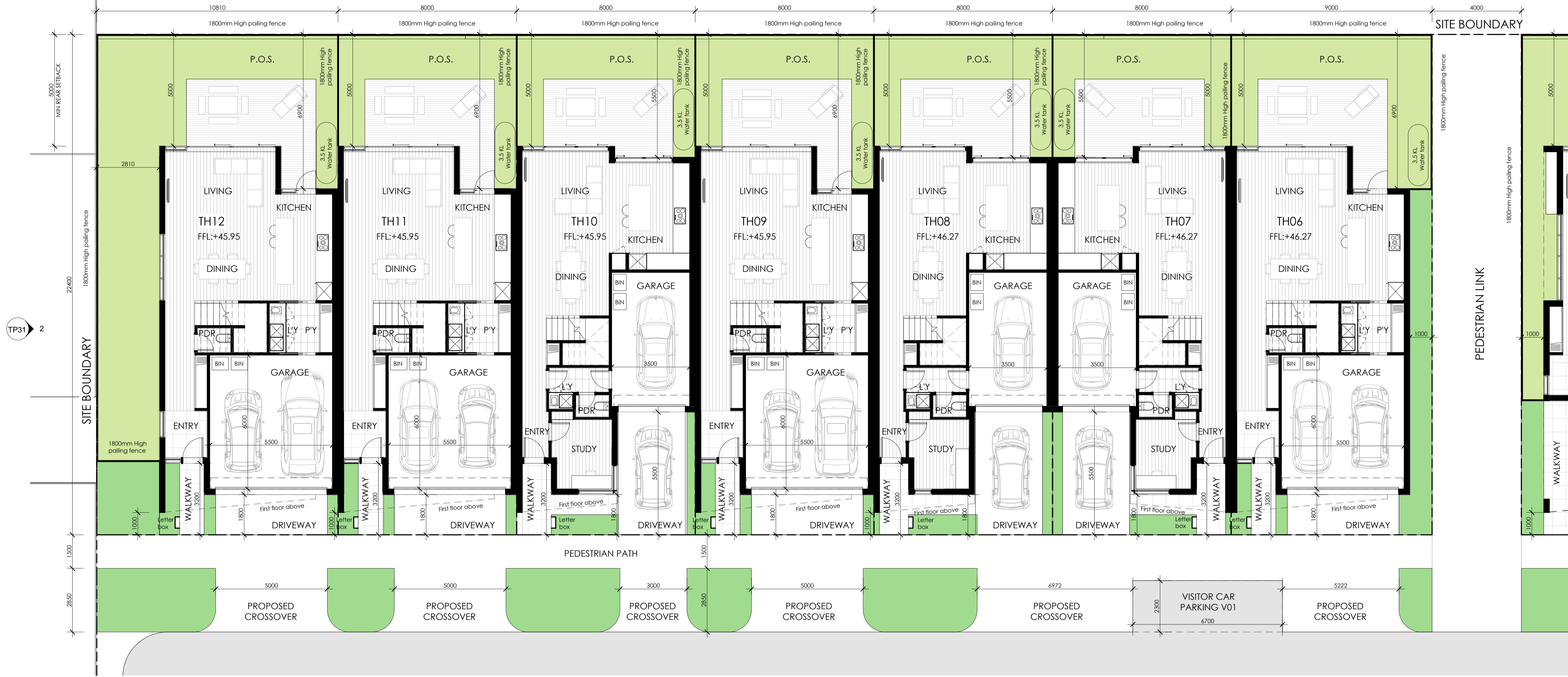
NOTE:
REFER TO TP12-TP15 FOR DETAILS



1 Ground Floor TH01 - TH05
1 : 100

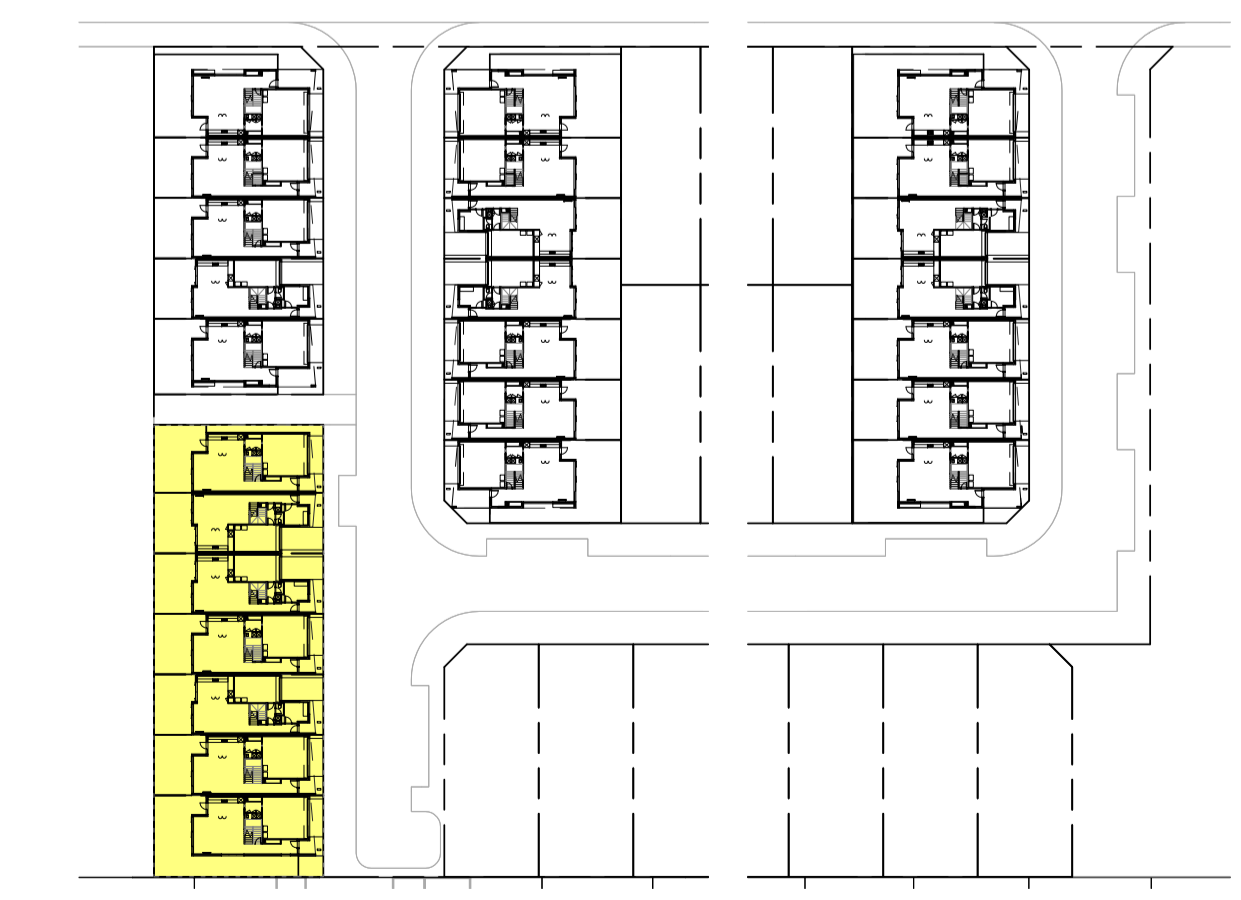
2 Key plan Ground Floor TH01-TH05
1000

TP33
3

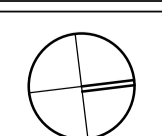


1 Ground Floor TH06 - TH12
1 : 100

INTERNAL WEST STREET

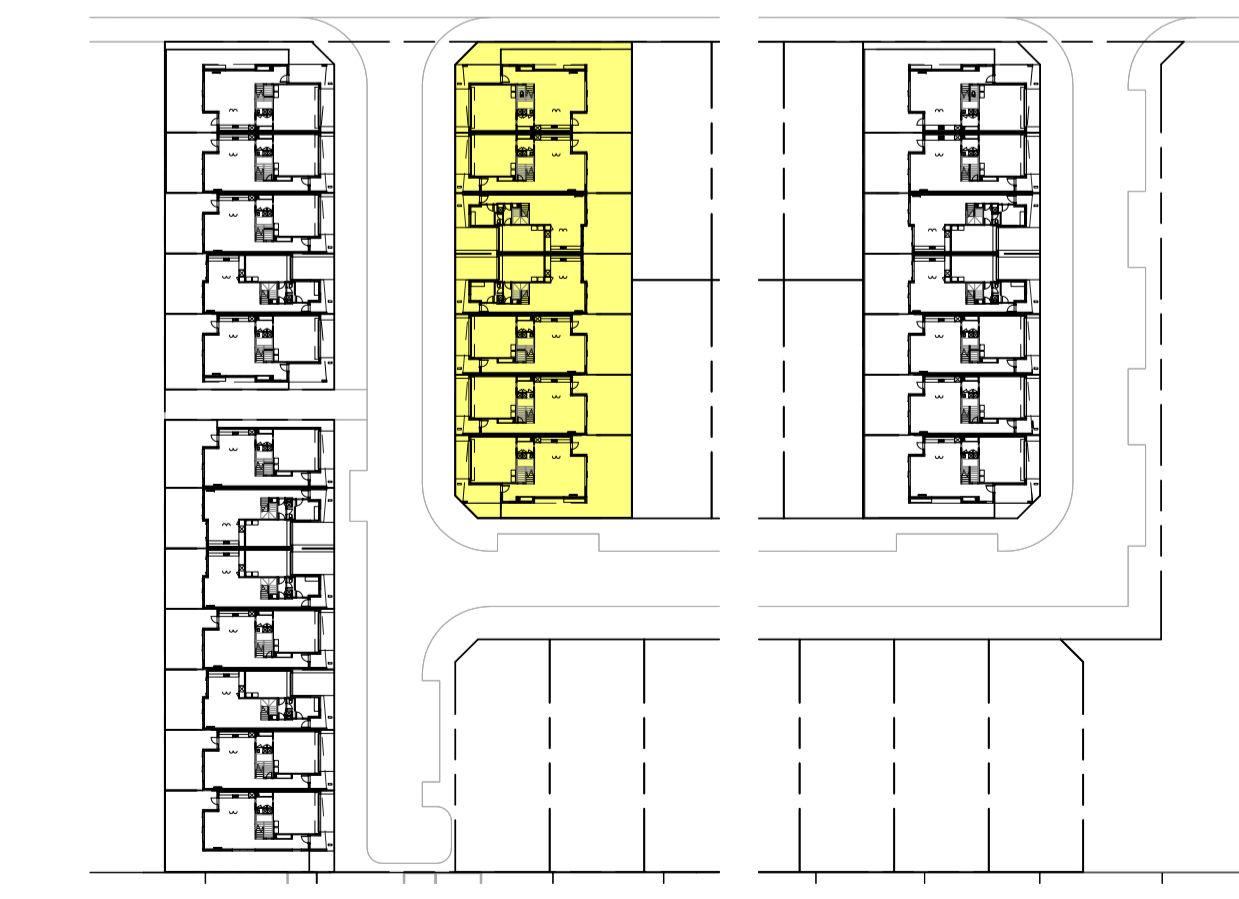


2 Key plan Ground Floor TH06-TH12
1 : 1000





1 Ground Floor TH13 - TH19
1 : 100



2 Key plan Ground Floor TH13-TH19
1000

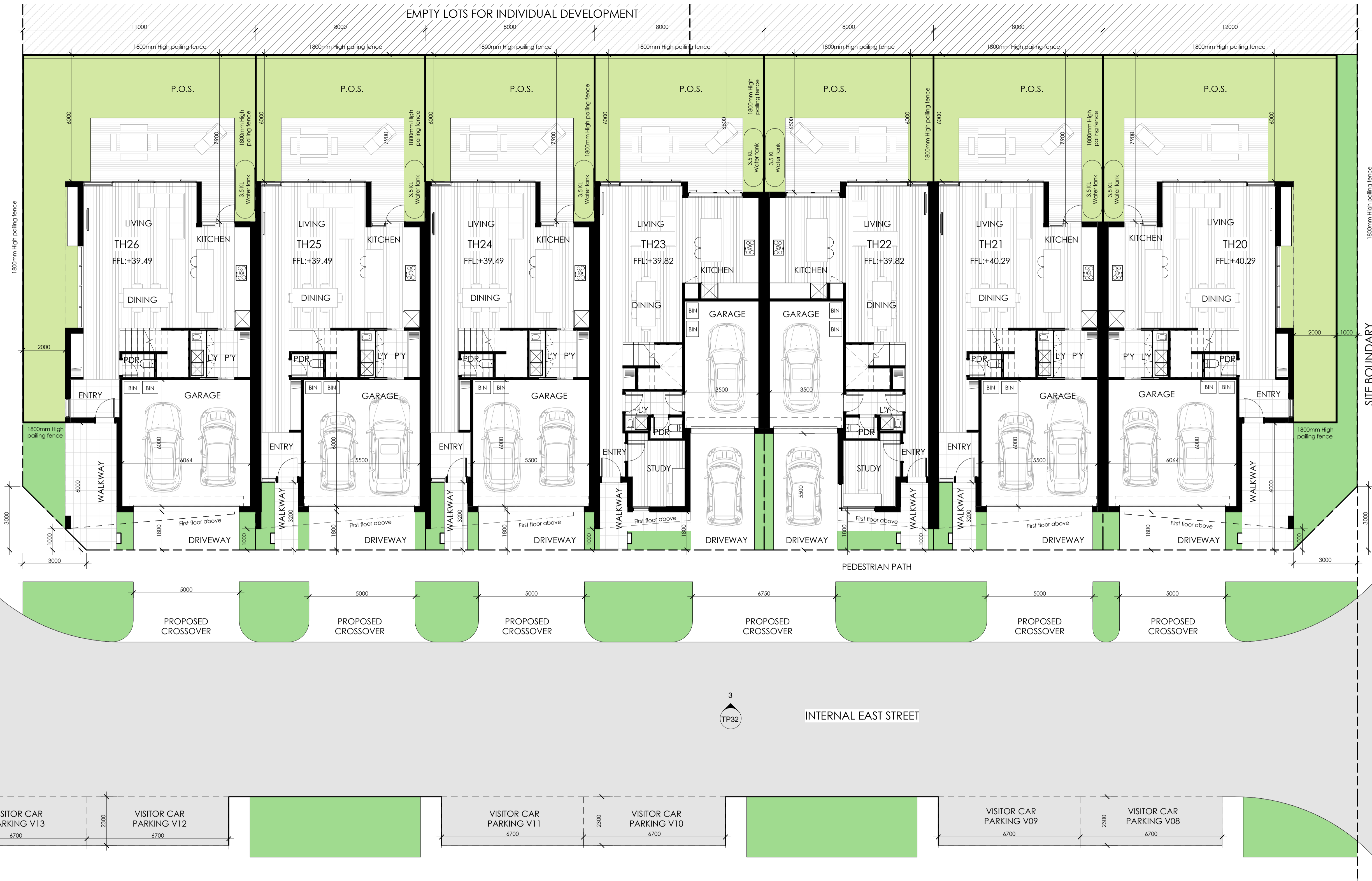
INTERNAL CENTRAL STREET

TP31 1

HENRY STREET

TP30 3

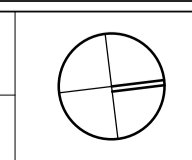
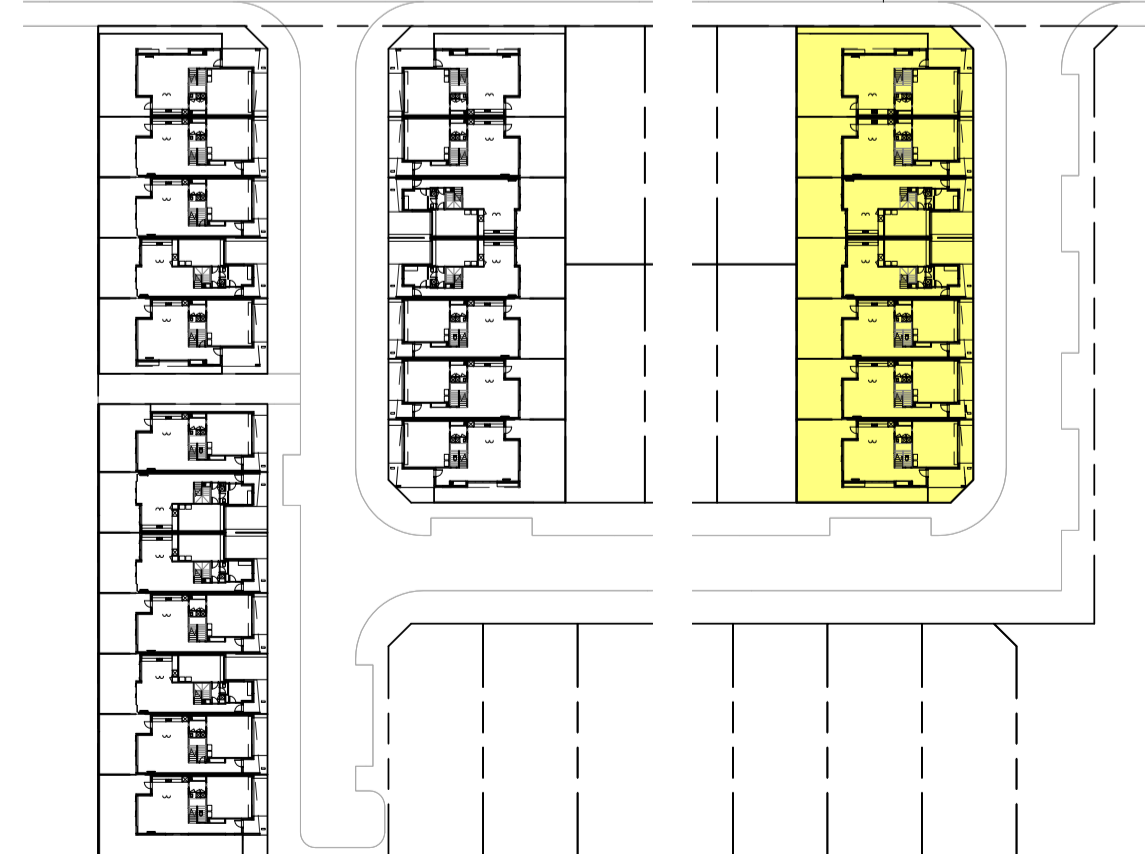
EMPTY LOTS FOR INDIVIDUAL DEVELOPMENT



1 Ground Floor TH20 - TH26
1 : 100

SITE BOUNDARY

2 Key plan Ground Floor TH20-TH26
1 : 1000



Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

Appendix B:
Automatic Traffic Counts of
Henry Street



Traffic Data Collection Services

Traffix Survey Pty Ltd
ABN 57 120 461 510

Address
Suite 8, 431 Burke Road
Glen Iris Victoria 3146

Contact
Telephone 03 9822 2888
Facsimile 03 9822 7444
survey@traffixgroup.com.au
www.traffixgroup.com.au

Henry Street, Belmont
Between
Stephen Street & Johnson Street

Prepared for
Traffix Group Pty Ltd

July 2015

Reference: 38100071

TRAFFIC COUNT SUMMARY



Henry Street, Belmont At: #34 Between Stephen Street & Johnson Street

CUSTOMER: Traffix Group Pty Ltd
TYPE COUNT: 7 days, Speed Vol Class
DATE START: 20/07/15
TIME START: 0000
DIRECTION-1: Eastbound
COUNTER NO:
CLASSES: 1 - 12

MAP REF: 465 F1
ACTUAL DURATION: 12 days
DATE FINISH: 26/07/15
TIME FINISH: 2300
DIRECTION-2: Westbound
SPEED LIMIT: 50
SPEEDS: All

ALL VEHICLES	Eastbound	Westbound	COMBINED
24 Hour Week Day Average	509	580	1090
24 Hour 7 Day Average	454	522	976
A.M. Peak Hour Volume	68	80	141
A.M. Peak Hour	0800-0859	0800-0859	0800-0859
P.M. Peak Hour Volume	84	98	182
P.M. Hour	1500-1559	1500-1559	1500-1559

COMMERCIAL VEHICLE	Eastbound	Westbound	COMBINED
Total Volume	174	388	562
%	5.5%	10.6%	8.2%

SPEEDS	Eastbound % Vol.	Westbound % Vol.	COMBINED % Vol.
>119km/h	0.0	0.0	0.0
>109km/h	0.0	0.0	0.0
>99km/h	0.0	0.0	0.0
>89km/h	0.0	0.1	0.1
>79km/h	0.2	0.3	0.2
>69km/h	0.7	2.3	1.6
>59km/h	8.4	20.9	15.1
>49km/h	50.2	67.6	59.5
>39km/h	86.5	92.4	89.6
>29km/h	95.9	97.3	96.6
>19km/h	99.3	99.3	99.3
85%ile	56.4	60.8	59.0
Mean	48.6	52.5	50.7

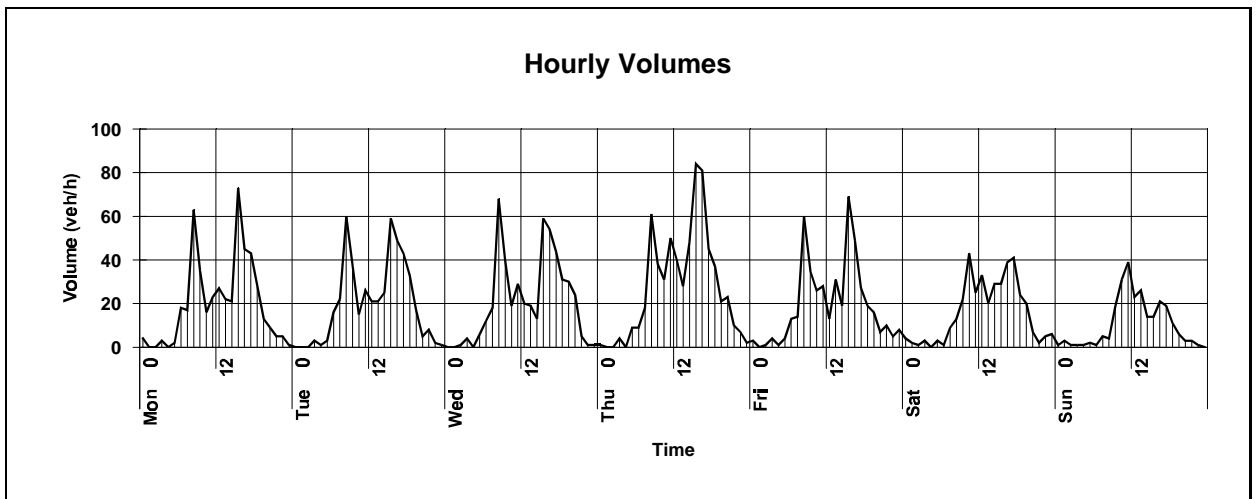
Notes

Traffix Survey Traffic Count Traffic Volume Analysis



Site No: 3810007
Site location: Henry Street, Belmont
Between : Stephen Street & Johnson Street
Direction : Eastbound
Time range: 0000 20/07/15 to 2300 26/07/15
Filters: Class: 1-12, Speeds: All

Date	20/07/15	21/07/15	22/07/15	23/07/15	24/07/15	25/07/15	26/07/15	AVERAGES	
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	WEEKDAY	ALL DAYS
Period									
0000-0059	4	0	0	1	3	4	1	2	2
0100-0159	0	0	0	0	0	2	3	0	1
0200-0259	0	0	1	0	1	1	1	0	1
0300-0359	3	3	4	4	4	3	1	4	3
0400-0459	0	1	0	0	1	0	1	0	0
0500-0559	2	3	6	9	4	3	2	5	4
0600-0659	18	16	12	9	13	1	1	14	10
0700-0759	17	22	18	18	14	9	5	18	15
0800-0859	63	60	68	61	60	13	4	62	47
0900-0959	35	37	40	38	35	22	19	37	32
1000-1059	16	15	19	31	26	43	31	21	26
1100-1159	23	26	29	50	28	25	39	31	31
1200-1259	27	21	20	40	13	33	23	24	25
1300-1359	22	21	19	28	31	20	26	24	24
1400-1459	21	25	13	48	19	29	14	25	24
1500-1559	73	59	59	84	69	29	14	69	55
1600-1659	45	49	54	81	49	39	21	56	48
1700-1759	43	43	44	45	27	41	19	40	37
1800-1859	28	33	31	37	19	24	11	30	26
1900-1959	13	17	30	21	16	20	6	19	18
2000-2059	9	5	24	23	7	7	3	14	11
2100-2159	5	8	5	10	10	2	3	8	6
2200-2259	5	2	1	7	5	5	1	4	4
2300-2359	1	1	1	2	8	6	0	3	3
TOTALS									
12Hr 7-19	413	411	414	561	390	327	226	438	392
24Hr 0-24	473	467	498	647	462	381	249	509	454
24/12 Fact	1.15	1.14	1.20	1.15	1.18	1.17	1.10	1.16	1.16
AM HR	0800-0859	0800-0859	0800-0859	0800-0859	0800-0859	1000-1059	1100-1159		
PEAK	63	60	68	61	60	43	39		
PM HR	1500-1559	1500-1559	1500-1559	1500-1559	1500-1559	1700-1759	1300-1359		
PEAK	73	59	59	84	69	41	26		



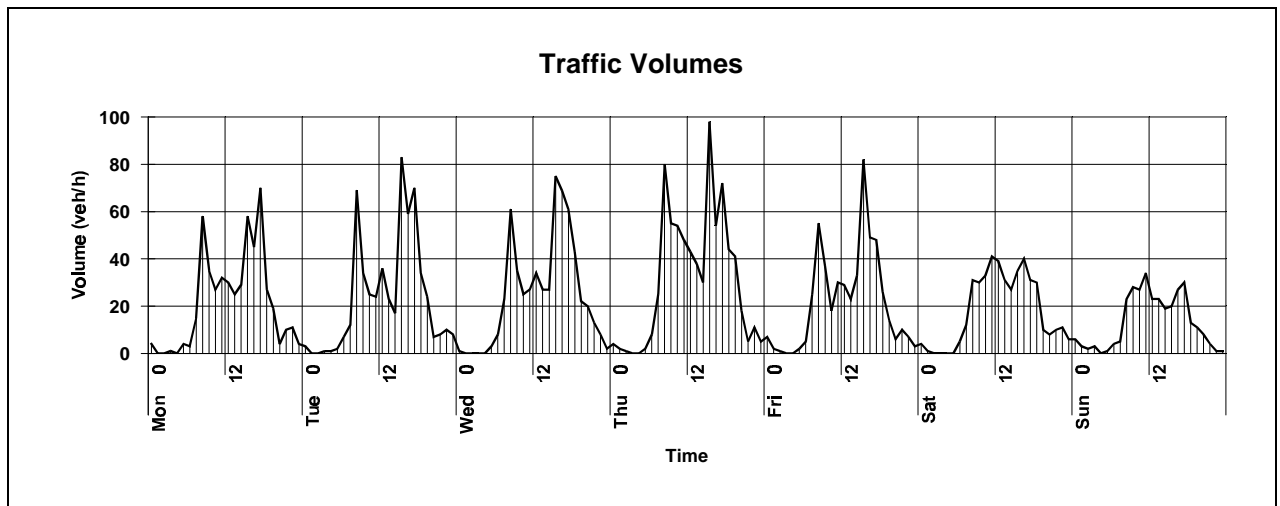
Traffix Survey Traffic Count

Traffic Volume Analysis



Site No: 3810007
Site location: Henry Street, Belmont
Between : Stephen Street & Johnson Street
Direction : Westbound
Time range: 0000 20/07/15 to 2300 26/07/15
Filters: Class: 1-12, Speeds: All

Date	20/07/15	21/07/15	22/07/15	23/07/15	24/07/15	25/07/15	26/07/15	AVERAGES	
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	WEEKDAY	ALL DAYS
Period									
0000-0059	4	3	1	4	7	4	6	4	4
0100-0159	0	0	0	2	2	1	3	1	1
0200-0259	0	0	0	1	1	0	2	0	1
0300-0359	1	1	0	0	0	0	3	0	1
0400-0459	0	1	0	0	0	0	0	0	0
0500-0559	4	2	3	2	2	0	1	3	2
0600-0659	3	7	8	8	5	5	4	6	6
0700-0759	15	12	23	25	25	12	5	20	17
0800-0859	58	69	61	80	55	31	23	65	54
0900-0959	35	34	35	55	37	30	28	39	36
1000-1059	27	25	25	54	18	33	27	30	30
1100-1159	32	24	27	48	30	41	34	32	34
1200-1259	30	36	34	43	29	39	23	34	33
1300-1359	25	23	27	38	23	31	23	27	27
1400-1459	29	17	27	30	33	27	19	27	26
1500-1559	58	83	75	98	82	35	20	79	64
1600-1659	45	59	69	54	49	40	27	55	49
1700-1759	70	70	61	72	48	31	30	64	55
1800-1859	27	34	43	44	26	30	13	35	31
1900-1959	19	24	22	41	14	10	11	24	20
2000-2059	4	7	20	18	6	8	8	11	10
2100-2159	10	8	13	5	10	10	4	9	9
2200-2259	11	10	8	11	7	11	1	9	8
2300-2359	4	8	2	5	3	6	1	4	4
TOTALS									
12Hr 7-19	451	486	507	641	455	380	272	508	456
24Hr 0-24	511	557	584	738	512	435	316	580	522
24/12 Fact	1.13	1.15	1.15	1.15	1.13	1.14	1.16	1.14	1.14
AM HR	0800-0859	0800-0859	0800-0859	0800-0859	0800-0859	1100-1159	1100-1159		
PEAK	58	69	61	80	55	41	34		
PM HR	1700-1759	1500-1559	1500-1559	1500-1559	1500-1559	1600-1659	1700-1759		
PEAK	70	83	75	98	82	40	30		

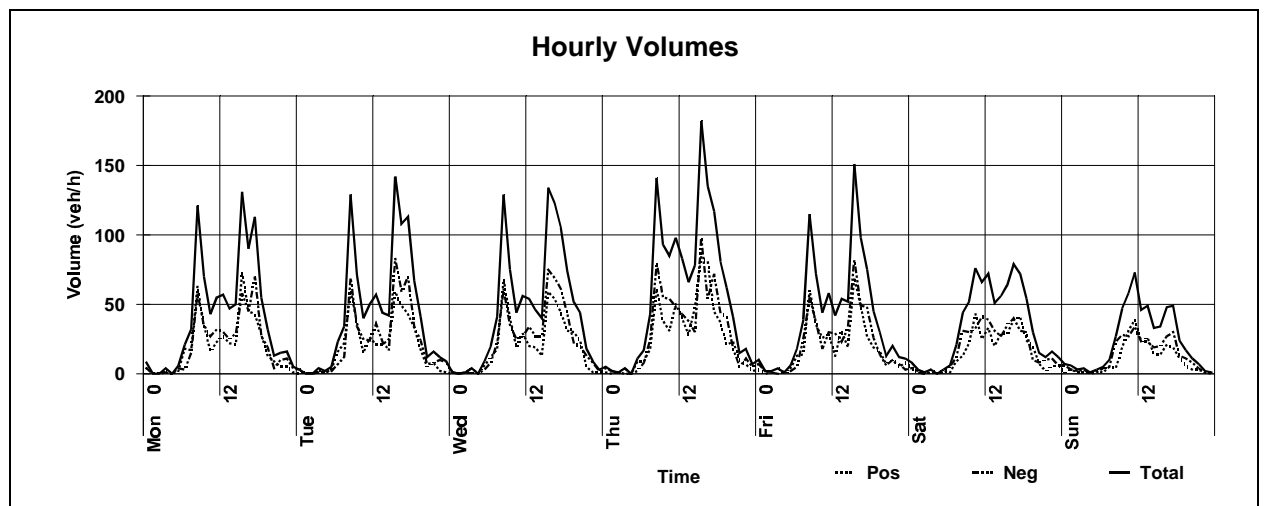


Traffix Survey Traffic Count Traffic Volume Analysis



Site No: 3810007
Site location: Henry Street, Belmont
Between : Stephen Street & Johnson Street
Direction : Eastbound & Westbound
Time range: 0000 20/07/15 to 2300 26/07/15
Filters: Class: 1-12, Speeds: All

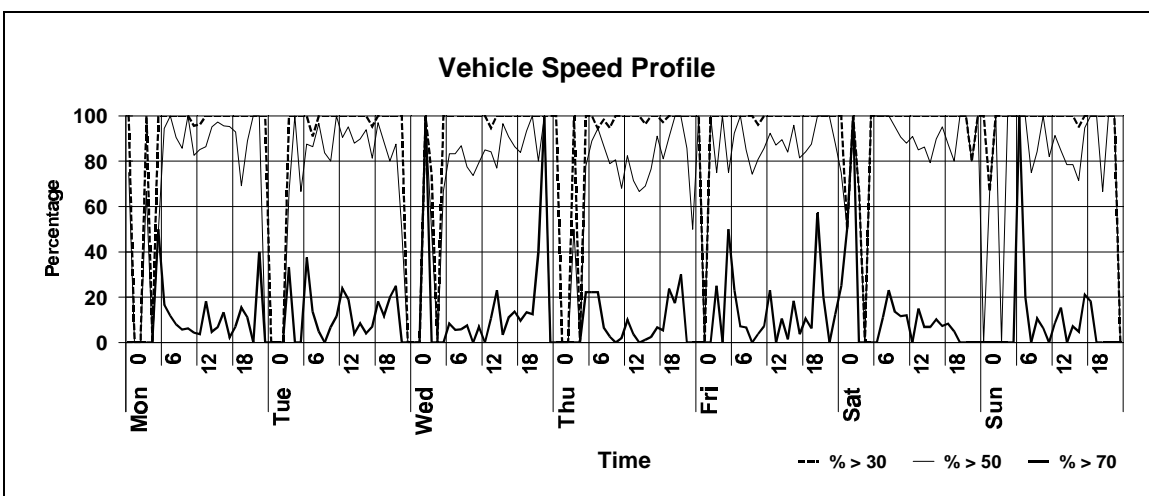
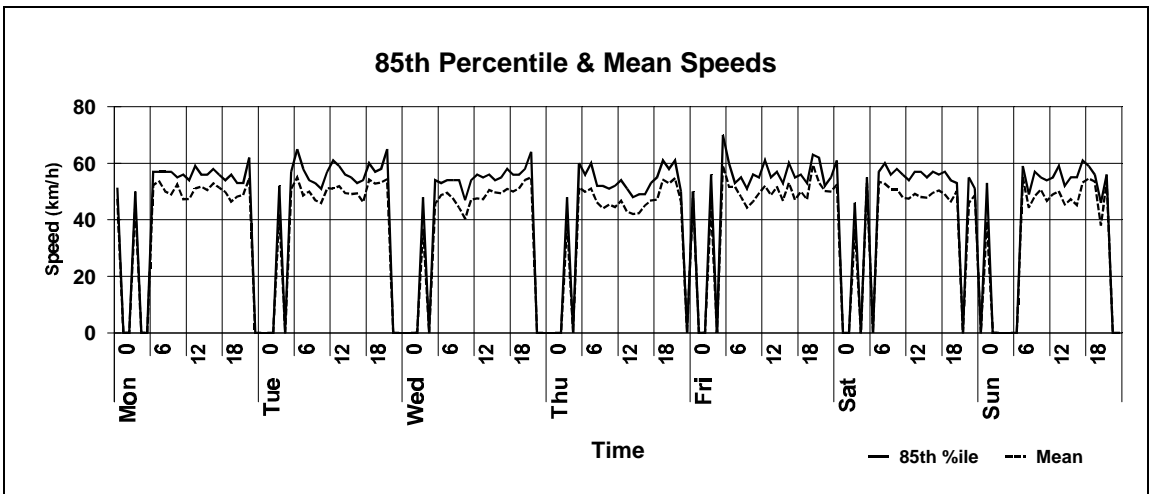
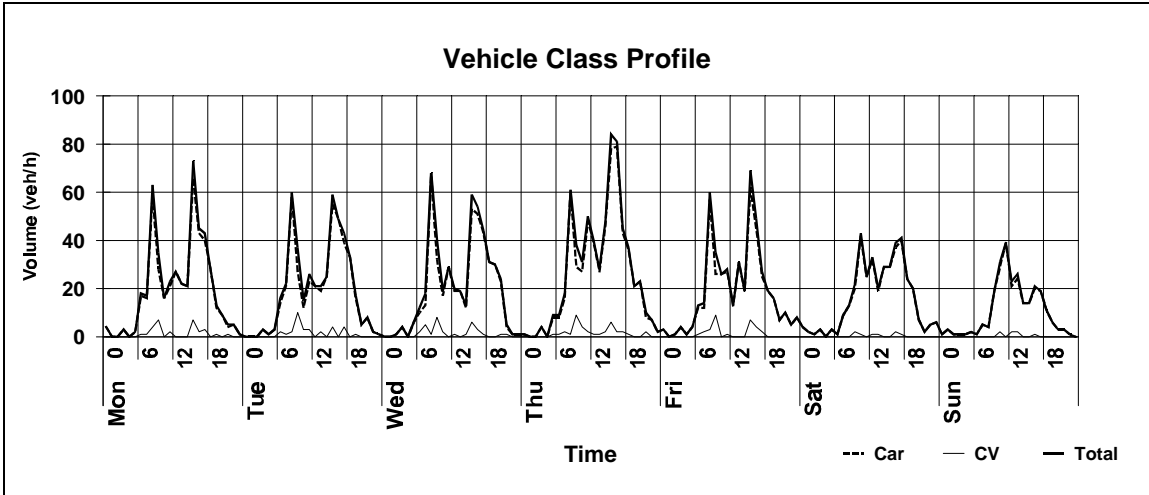
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	Mon	Tue	Wed	Thu	Fri	Sat	Sun	WEEKDAY	ALL DAYS
Period									
0000-0059	8	3	1	5	10	8	7	5	6
0100-0159	0	0	0	2	2	3	6	1	2
0200-0259	0	0	1	1	2	1	3	1	1
0300-0359	4	4	4	4	4	3	4	4	4
0400-0459	0	2	0	0	1	0	1	1	1
0500-0559	6	5	9	11	6	3	3	7	6
0600-0659	21	23	20	17	18	6	5	20	16
0700-0759	32	34	41	43	39	21	10	38	31
0800-0859	121	129	129	141	115	44	27	127	101
0900-0959	70	71	75	93	72	52	47	76	69
1000-1059	43	40	44	85	44	76	58	51	56
1100-1159	55	50	56	98	58	66	73	63	65
1200-1259	57	57	54	83	42	72	46	59	59
1300-1359	47	44	46	66	54	51	49	51	51
1400-1459	50	42	40	78	52	56	33	52	50
1500-1559	131	142	134	182	151	64	34	148	120
1600-1659	90	108	123	135	98	79	48	111	97
1700-1759	113	113	105	117	75	72	49	105	92
1800-1859	55	67	74	81	45	54	24	64	57
1900-1959	32	41	52	62	30	30	17	43	38
2000-2059	13	12	44	41	13	15	11	25	21
2100-2159	15	16	18	15	20	12	7	17	15
2200-2259	16	12	9	18	12	16	2	13	12
2300-2359	5	9	3	7	11	12	1	7	7
TOTALS									
12Hr 7-19	864	897	921	1202	845	707	498	946	848
24Hr 0-24	984	1024	1082	1385	974	816	565	1090	976
24/12 Fact	1.14	1.14	1.17	1.15	1.15	1.15	1.13	1.15	1.15
AM HR	0800-0859	0800-0859	0800-0859	0800-0859	0800-0859	1000-1059	1100-1159		
PEAK	121	129	129	141	115	76	73		
PM HR	1500-1559	1500-1559	1500-1559	1500-1559	1500-1559	1600-1659	1300-1359		
PEAK	131	142	134	182	151	79	49		



Traffix Survey Traffic Count
Traffic Volume and Speed Summary



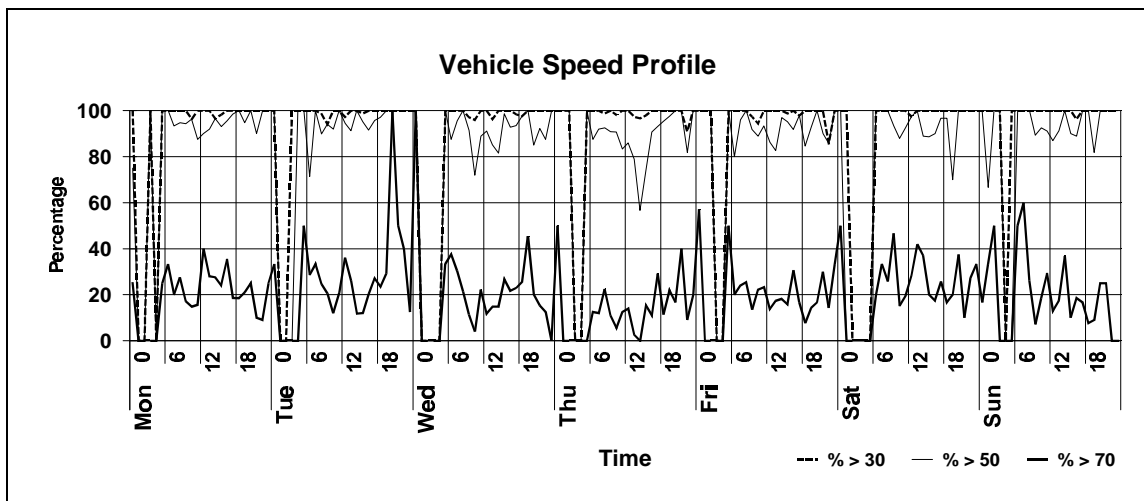
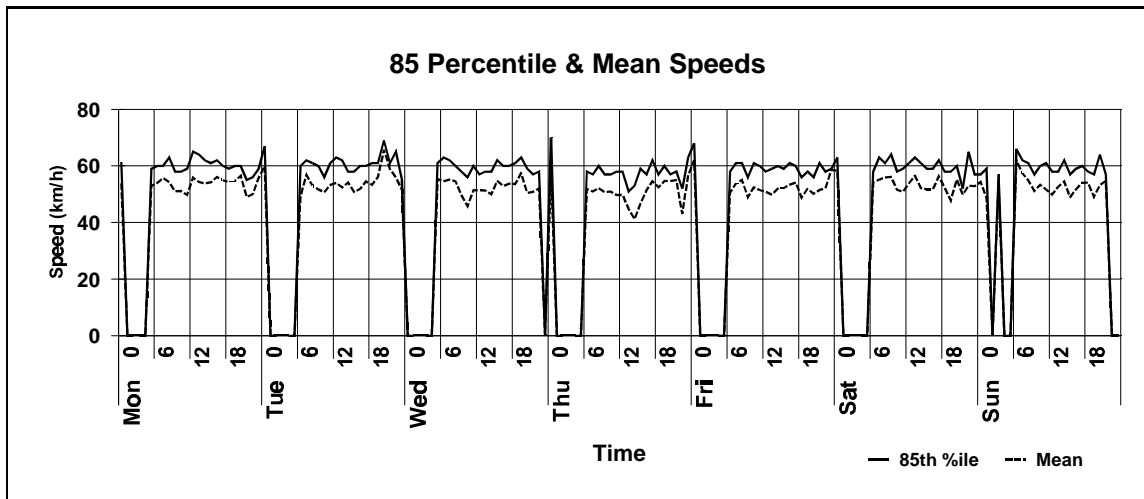
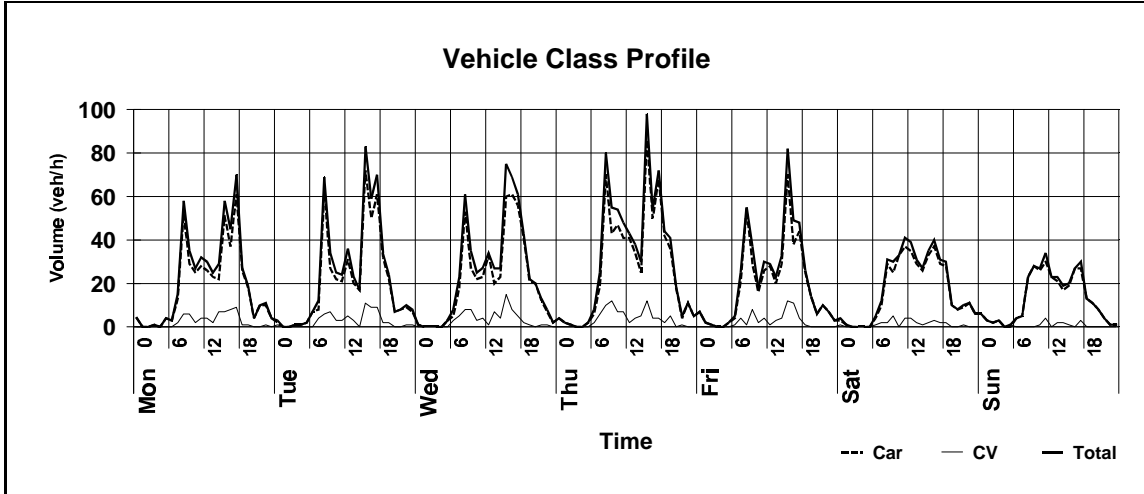
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Site location: Henry Street, Belmont
Between : Stephen Street & Johnson Street
Direction : Eastbound
Time range: 0000 20/07/15 to 2300 26/07/15
Filters: Class: 1-12, Speeds: All



Traffic Survey Traffic Count
Traffic Volume and Speed Summary



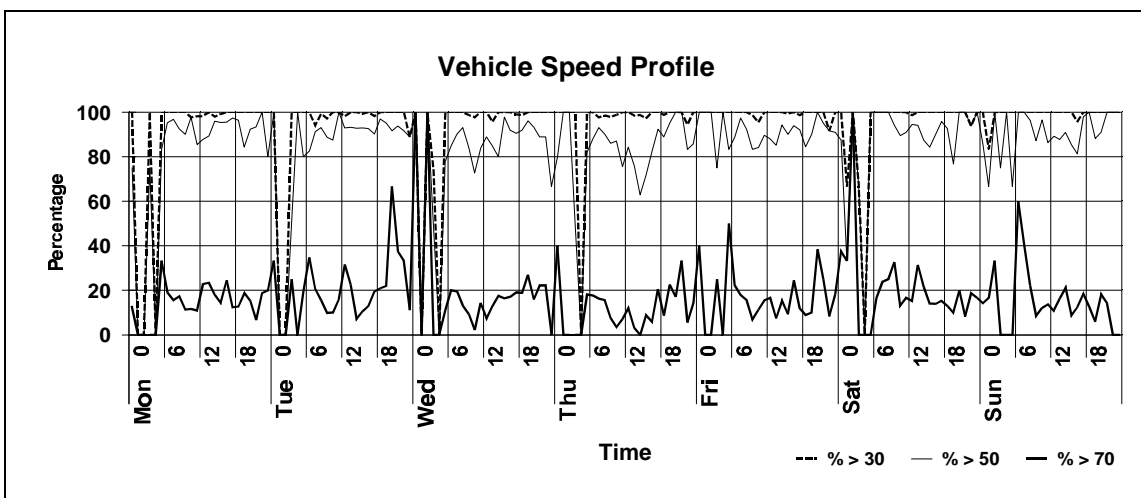
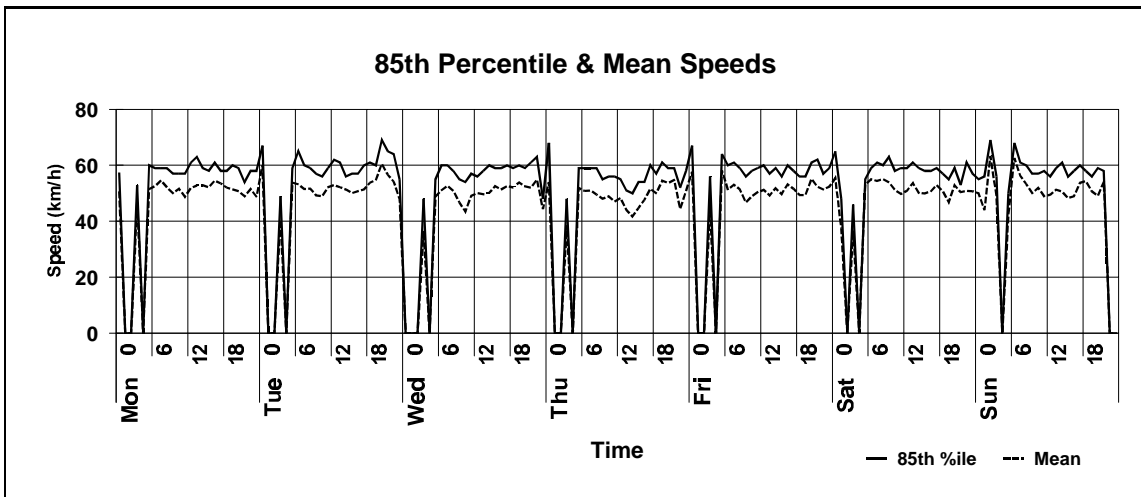
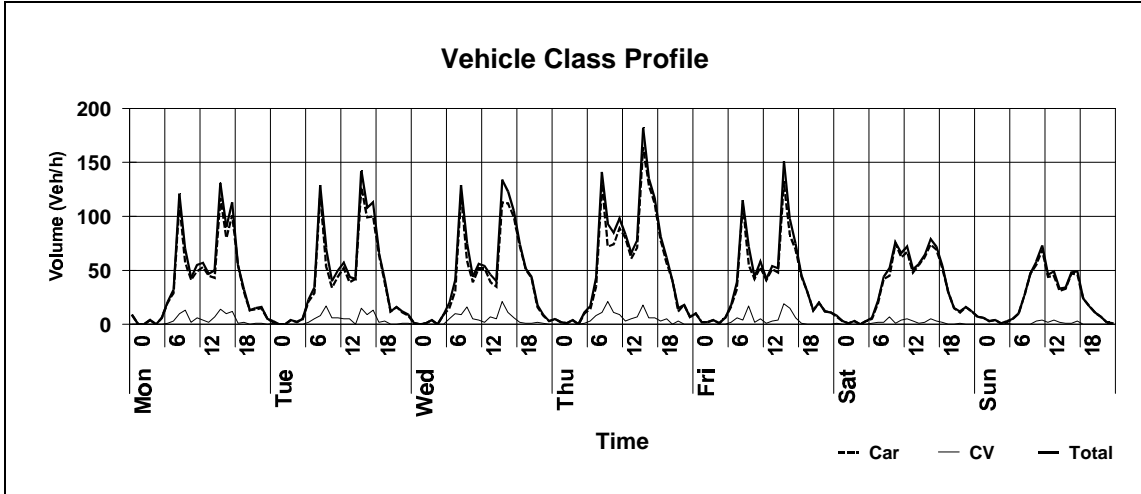
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Site location: Henry Street, Belmont
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Direction : Westbound
Time range: 0000 20/07/15 to 2300 26/07/15
Filters: Class: 1-12, Speeds: All



Traffic Survey Traffic Count
Traffic Volume and Speed Summary



Site No: 3810007
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Direction : Eastbound & Westbound
Time range: 0000 20/07/15 to 2300 26/07/15
Filters: Class: 1-12, Speeds: All



Traffix Survey Traffic Count Summarised Time Format



Site No: 3810007
Site location: Henry Street, Belmont
Between : Stephen Street & Johnson Street
Direction : Eastbound
Time range: 0000 20/07/15 to 2300 26/07/15
Filters: Class: 1-12, Speeds: All

Note: A -ve 85%ile indicates a sample size less than 50

Date	Day	Hr Start	Vol	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	Mean Sp	85%ile
20/07/15	Mon	0000	4	4	0	0	0	0	0	0	0	0	0	0	0	0	47.0	-51.2
20/07/15	Mon	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
20/07/15	Mon	0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
20/07/15	Mon	0300	3	3	0	0	0	0	0	0	0	0	0	0	0	0	44.7	-50.0
20/07/15	Mon	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
20/07/15	Mon	0500	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
20/07/15	Mon	0600	18	17	0	1	0	0	0	0	0	0	0	0	0	0	52.3	-57.9
20/07/15	Mon	0700	17	16	0	1	0	0	0	0	0	0	0	0	0	0	53.6	-57.9
20/07/15	Mon	0800	63	59	0	4	0	0	0	0	0	0	0	0	0	0	50.0	57.3
20/07/15	Mon	0900	35	27	1	7	0	0	0	0	0	0	0	0	0	0	49.0	-57.4
20/07/15	Mon	1000	16	16	0	0	0	0	0	0	0	0	0	0	0	0	52.5	-55.9
20/07/15	Mon	1100	23	20	1	2	0	0	0	0	0	0	0	0	0	0	47.3	-56.5
20/07/15	Mon	1200	27	27	0	0	0	0	0	0	0	0	0	0	0	0	47.4	-55.0
20/07/15	Mon	1300	22	21	1	0	0	0	0	0	0	0	0	0	0	0	51.1	-59.7
20/07/15	Mon	1400	21	21	0	0	0	0	0	0	0	0	0	0	0	0	51.8	-57.0
20/07/15	Mon	1500	73	66	0	7	0	0	0	0	0	0	0	0	0	0	50.5	56.8
20/07/15	Mon	1600	45	43	0	2	0	0	0	0	0	0	0	0	0	0	52.9	-58.8
20/07/15	Mon	1700	43	40	0	3	0	0	0	0	0	0	0	0	0	0	51.3	-56.2
20/07/15	Mon	1800	28	26	2	0	0	0	0	0	0	0	0	0	0	0	49.9	-54.8
20/07/15	Mon	1900	13	12	0	1	0	0	0	0	0	0	0	0	0	0	46.5	-56.3
20/07/15	Mon	2000	9	9	0	0	0	0	0	0	0	0	0	0	0	0	48.2	-53.3
20/07/15	Mon	2100	5	4	0	1	0	0	0	0	0	0	0	0	0	0	48.8	-53.8
20/07/15	Mon	2200	5	5	0	0	0	0	0	0	0	0	0	0	0	0	54.8	-62.8
20/07/15	Mon	2300	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
21/07/15	Tue	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
21/07/15	Tue	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
21/07/15	Tue	0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
21/07/15	Tue	0300	3	3	0	0	0	0	0	0	0	0	0	0	0	0	41.7	-52.7
21/07/15	Tue	0400	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
21/07/15	Tue	0500	3	3	0	0	0	0	0	0	0	0	0	0	0	0	51.0	-57.5
21/07/15	Tue	0600	16	14	0	2	0	0	0	0	0	0	0	0	0	0	55.0	-65.8
21/07/15	Tue	0700	22	21	0	1	0	0	0	0	0	0	0	0	0	0	48.6	-58.7
21/07/15	Tue	0800	60	58	0	2	0	0	0	0	0	0	0	0	0	0	50.0	54.8
21/07/15	Tue	0900	37	27	0	10	0	0	0	0	0	0	0	0	0	0	46.9	-53.5
21/07/15	Tue	1000	15	12	0	3	0	0	0	0	0	0	0	0	0	0	45.9	-51.9
21/07/15	Tue	1100	26	23	0	3	0	0	0	0	0	0	0	0	0	0	51.2	-57.2
21/07/15	Tue	1200	21	21	0	0	0	0	0	0	0	0	0	0	0	0	51.0	-61.3
21/07/15	Tue	1300	21	18	1	1	1	0	0	0	0	0	0	0	0	0	51.9	-59.9
21/07/15	Tue	1400	25	25	0	0	0	0	0	0	0	0	0	0	0	0	49.4	-56.4
21/07/15	Tue	1500	59	55	0	4	0	0	0	0	0	0	0	0	0	0	49.1	55.6
21/07/15	Tue	1600	49	49	0	0	0	0	0	0	0	0	0	0	0	0	49.3	-53.9
21/07/15	Tue	1700	43	37	2	3	0	0	0	1	0	0	0	0	0	0	46.2	-54.8
21/07/15	Tue	1800	33	33	0	0	0	0	0	0	0	0	0	0	0	0	54.2	-60.0
21/07/15	Tue	1900	17	14	2	1	0	0	0	0	0	0	0	0	0	0	52.8	-57.5
21/07/15	Tue	2000	5	5	0	0	0	0	0	0	0	0	0	0	0	0	53.2	-58.0
21/07/15	Tue	2100	8	8	0	0	0	0	0	0	0	0	0	0	0	0	54.4	-65.2
21/07/15	Tue	2200	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
21/07/15	Tue	2300	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
22/07/15	Wed	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
22/07/15	Wed	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
22/07/15	Wed	0200	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
22/07/15	Wed	0300	4	4	0	0	0	0	0	0	0	0	0	0	0	0	36.5	-48.4
22/07/15	Wed	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
22/07/15	Wed	0500	6	6	0	0	0	0	0	0	0	0	0	0	0	0	45.7	-54.3
22/07/15	Wed	0600	12	10	0	1	0	1	0	0	0	0	0	0	0	0	48.8	-53.4
22/07/15	Wed	0700	18	11	2	2	1	1	0	1	0	0	0	0	0	0	49.6	-54.3
22/07/15	Wed	0800	68	66	1	1	0	0	0	0	0	0	0	0	0	0	47.4	54.4
22/07/15	Wed	0900	40	31	1	8	0	0	0	0	0	0	0	0	0	0	44.3	-54.5
22/07/15	Wed	1000	19	16	1	0	0	0	1	1	0	0	0	0	0	0	40.5	-47.6
22/07/15	Wed	1100	29	29	0	0	0	0	0	0	0	0	0	0	0	0	47.1	-54.7
22/07/15	Wed	1200	20	19	0	1	0	0	0	0	0	0	0	0	0	0	47.6	-56.0
22/07/15	Wed	1300	19	19	0	0	0	0	0	0	0	0	0	0	0	0	47.3	-55.6
22/07/15	Wed	1400	13	12	0	1	0	0	0	0	0	0	0	0	0	0	50.5	-56.5
22/07/15	Wed	1500	59	53	0	6	0	0	0	0	0	0	0	0	0	0	49.7	54.2
22/07/15	Wed	1600	54	51	0	3	0	0	0	0	0	0	0	0	0	0	49.4	55.9
22/07/15	Wed	1700	44	43	0	1	0	0	0	0	0	0	0	0	0	0	51.0	-58.7
22/07/15	Wed	1800	31	31	0	0	0	0	0	0	0	0	0	0	0	0	50.0	-56.4
22/07/15	Wed	1900	30	30	0	0	0	0	0	0	0	0	0	0	0	0	51.1	-56.0
22/07/15	Wed	2000	24	23	0	1	0	0	0	0	0	0	0	0	0	0	54.1	-58.7
22/07/15	Wed	2100	5	4	0	1	0	0	0	0	0	0	0	0	0	0	55.0	-64.0
22/07/15	Wed	2200	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
22/07/15	Wed	2300	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
23/07/15	Thu	0000	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
23/07/15	Thu	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
23/07/15	Thu	0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
23/07/15	Thu	0300	4	4	0	0	0	0	0	0	0	0	0	0	0	0	38.5	-48.2
23/07/15	Thu	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
23/07/15	Thu	0500	9	8	0	1	0	0	0	0	0	0	0	0	0	0	51.4	-60.6
23/07/15	Thu	0600	9	8	0	1	0	0	0	0	0	0	0	0	0	0	49.9	-56.3

Traffix Survey Traffic Count Summarised Time Format



Site No: 3810007
Site location: Henry Street, Belmont
Between : Stephen Street & Johnson Street
Direction : Westbound
Time range: 0000 20/07/15 to 2300 26/07/15
Filters: Class: 1-12, Speeds: All

Note: A -ve 85%ile indicates a sample size less than 50

Date	Day	Hr Start	Vol	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	Mean Sp	85%ile
20/07/15	Mon	0000	4	4	0	0	0	0	0	0	0	0	0	0	0	0.0	53.5	-61.4
20/07/15	Mon	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
20/07/15	Mon	0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
20/07/15	Mon	0300	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
20/07/15	Mon	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
20/07/15	Mon	0500	4	4	0	0	0	0	0	0	0	0	0	0	0	0.0	53.0	-59.8
20/07/15	Mon	0600	3	3	0	0	0	0	0	0	0	0	0	0	0	0.0	54.0	-60.2
20/07/15	Mon	0700	15	13	0	2	0	0	0	0	0	0	0	0	0	0.0	55.7	-60.5
20/07/15	Mon	0800	58	52	0	6	0	0	0	0	0	0	0	0	0	0.0	54.4	63.3
20/07/15	Mon	0900	35	29	0	6	0	0	0	0	0	0	0	0	0	0.0	51.0	-58.8
20/07/15	Mon	1000	27	25	0	2	0	0	0	0	0	0	0	0	0	0.0	51.1	-59.0
20/07/15	Mon	1100	32	27	1	4	0	0	0	0	0	0	0	0	0	0.0	49.8	-59.1
20/07/15	Mon	1200	30	26	0	4	0	0	0	0	0	0	0	0	0	0.0	55.9	-65.5
20/07/15	Mon	1300	25	23	0	2	0	0	0	0	0	0	0	0	0	0.0	54.3	-64.3
20/07/15	Mon	1400	29	22	0	7	0	0	0	0	0	0	0	0	0	0.0	53.8	-62.3
20/07/15	Mon	1500	58	51	0	7	0	0	0	0	0	0	0	0	0	0.0	54.2	61.1
20/07/15	Mon	1600	45	37	0	8	0	0	0	0	0	0	0	0	0	0.0	56.1	-62.3
20/07/15	Mon	1700	70	61	0	8	0	0	1	0	0	0	0	0	0	0.0	55.0	60.3
20/07/15	Mon	1800	27	26	0	1	0	0	0	0	0	0	0	0	0	0.0	54.3	-59.3
20/07/15	Mon	1900	19	18	0	1	0	0	0	0	0	0	0	0	0	0.0	54.7	-60.3
20/07/15	Mon	2000	4	4	0	0	0	0	0	0	0	0	0	0	0	0.0	56.5	-60.2
20/07/15	Mon	2100	10	10	0	0	0	0	0	0	0	0	0	0	0	0.0	49.0	-55.0
20/07/15	Mon	2200	11	10	0	1	0	0	0	0	0	0	0	0	0	0.0	50.0	-56.3
20/07/15	Mon	2300	4	4	0	0	0	0	0	0	0	0	0	0	0	0.0	55.8	-59.8
21/07/15	Tue	0000	3	2	0	1	0	0	0	0	0	0	0	0	0	0.0	60.0	-67.8
21/07/15	Tue	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
21/07/15	Tue	0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
21/07/15	Tue	0300	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
21/07/15	Tue	0400	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
21/07/15	Tue	0500	2	2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
21/07/15	Tue	0600	7	7	0	0	0	0	0	0	0	0	0	0	0	0.0	49.1	-60.7
21/07/15	Tue	0700	12	8	0	4	0	0	0	0	0	0	0	0	0	0.0	56.8	-62.2
21/07/15	Tue	0800	69	63	0	4	0	0	1	1	0	0	0	0	0	0.0	53.1	61.8
21/07/15	Tue	0900	34	27	0	7	0	0	0	0	0	0	0	0	0	0.0	51.7	-60.9
21/07/15	Tue	1000	25	22	0	3	0	0	0	0	0	0	0	0	0	0.0	50.7	-56.8
21/07/15	Tue	1100	24	21	0	3	0	0	0	0	0	0	0	0	0	0.0	53.3	-61.6
21/07/15	Tue	1200	36	30	1	4	0	0	1	0	0	0	0	0	0	0.0	54.0	-63.2
21/07/15	Tue	1300	23	20	0	3	0	0	0	0	0	0	0	0	0	0.0	52.4	-62.3
21/07/15	Tue	1400	17	17	0	0	0	0	0	0	0	0	0	0	0	0.0	54.1	-58.5
21/07/15	Tue	1500	83	71	1	11	0	0	0	0	0	0	0	0	0	0.0	50.7	58.2
21/07/15	Tue	1600	59	50	0	9	0	0	0	0	0	0	0	0	0	0.0	51.9	60.7
21/07/15	Tue	1700	70	60	1	9	0	0	0	0	0	0	0	0	0	0.0	54.5	60.8
21/07/15	Tue	1800	34	32	0	2	0	0	0	0	0	0	0	0	0	0.0	53.3	-62.0
21/07/15	Tue	1900	24	22	0	2	0	0	0	0	0	0	0	0	0	0.0	56.2	-61.6
21/07/15	Tue	2000	7	7	0	0	0	0	0	0	0	0	0	0	0	0.0	65.7	-69.9
21/07/15	Tue	2100	8	8	0	0	0	0	0	0	0	0	0	0	0	0.0	58.9	-61.9
21/07/15	Tue	2200	10	9	0	1	0	0	0	0	0	0	0	0	0	0.0	56.0	-65.5
21/07/15	Tue	2300	8	7	0	0	0	1	0	0	0	0	0	0	0	0.0	51.6	-55.8
22/07/15	Wed	0000	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
22/07/15	Wed	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
22/07/15	Wed	0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
22/07/15	Wed	0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
22/07/15	Wed	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
22/07/15	Wed	0500	3	3	0	0	0	0	0	0	0	0	0	0	0	0.0	55.3	-61.5
22/07/15	Wed	0600	8	5	0	2	0	0	0	1	0	0	0	0	0	0.0	54.6	-63.2
22/07/15	Wed	0700	23	17	1	4	1	0	0	0	0	0	0	0	0	0.0	55.2	-62.5
22/07/15	Wed	0800	61	53	0	8	0	0	0	0	0	0	0	0	0	0.0	54.6	60.7
22/07/15	Wed	0900	35	27	0	8	0	0	0	0	0	0	0	0	0	0.0	49.6	-58.4
22/07/15	Wed	1000	25	21	1	2	0	0	0	1	0	0	0	0	0	0.0	45.8	-56.4
22/07/15	Wed	1100	27	23	0	4	0	0	0	0	0	0	0	0	0	0.0	51.4	-60.5
22/07/15	Wed	1200	34	32	1	0	1	0	0	0	0	0	0	0	0	0.0	51.5	-57.9
22/07/15	Wed	1300	27	20	0	7	0	0	0	0	0	0	0	0	0	0.0	51.3	-59.0
22/07/15	Wed	1400	27	23	0	4	0	0	0	0	0	0	0	0	0	0.0	50.0	-59.0
22/07/15	Wed	1500	75	60	0	15	0	0	0	0	0	0	0	0	0	0.0	54.8	62.6
22/07/15	Wed	1600	69	61	0	8	0	0	0	0	0	0	0	0	0	0.0	52.9	60.3
22/07/15	Wed	1700	61	54	2	5	0	0	0	0	0	0	0	0	0	0.0	53.7	60.7
22/07/15	Wed	1800	43	41	0	2	0	0	0	0	0	0	0	0	0	0.0	53.6	-61.7
22/07/15	Wed	1900	22	21	0	1	0	0	0	0	0	0	0	0	0	0.0	57.5	-63.7
22/07/15	Wed	2000	20	20	0	0	0	0	0	0	0	0	0	0	0	0.0	50.5	-59.5
22/07/15	Wed	2100	13	12	0	1	0	0	0	0	0	0	0	0	0	0.0	50.8	-57.2
22/07/15	Wed	2200	8	7	0	1	0	0	0	0	0	0	0	0	0	0.0	52.0	-58.4
22/07/15	Wed	2300	2	2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
23/07/15	Thu	0000	4	4	0	0	0	0	0	0	0	0	0	0	0	0.0	57.8	-70.0
23/07/15	Thu	0100	2	2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
23/07/15	Thu	0200	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
23/07/15	Thu	0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
23/07/15	Thu	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
23/07/15	Thu	0500	2	2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
23/07/15	Thu	0600	8	6	0	1	0	0	1	0	0	0	0	0	0	0.0	51.9	-58.8

23/07/15	Thu	0700	25	19	0	6	0	0	0	0	0	0	0	0	0	0.0	51.0	-57.5
23/07/15	Thu	0800	80	70	0	10	0	0	0	0	0	0	0	0	0	0.0	52.2	60.2
23/07/15	Thu	0900	55	42	1	11	1	0	0	0	0	0	0	0	0	0.0	50.8	57.5
23/07/15	Thu	1000	54	47	0	7	0	0	0	0	0	0	0	0	0	0.0	50.9	57.8
23/07/15	Thu	1100	48	41	0	7	0	0	0	0	0	0	0	0	0	0.0	49.7	-58.4
23/07/15	Thu	1200	43	40	1	2	0	0	0	0	0	0	0	0	0	0.0	49.8	-58.5
23/07/15	Thu	1300	38	34	0	4	0	0	0	0	0	0	0	0	0	0.0	44.8	-51.4
23/07/15	Thu	1400	30	25	0	5	0	0	0	0	0	0	0	0	0	0.0	41.2	-53.5
23/07/15	Thu	1500	98	84	2	12	0	0	0	0	0	0	0	0	0	0.0	46.8	59.1
23/07/15	Thu	1600	54	50	0	4	0	0	0	0	0	0	0	0	0	0.0	51.4	58.0
23/07/15	Thu	1700	72	66	2	4	0	0	0	0	0	0	0	0	0	0.0	54.6	62.6
23/07/15	Thu	1800	44	42	0	2	0	0	0	0	0	0	0	0	0	0.0	52.5	-57.5
23/07/15	Thu	1900	41	36	0	5	0	0	0	0	0	0	0	0	0	0.0	54.7	-60.4
23/07/15	Thu	2000	18	18	0	0	0	0	0	0	0	0	0	0	0	0.0	54.7	-57.1
23/07/15	Thu	2100	5	4	0	1	0	0	0	0	0	0	0	0	0	0.0	55.0	-58.9
23/07/15	Thu	2200	11	11	0	0	0	0	0	0	0	0	0	0	0	0.0	43.1	-52.4
23/07/15	Thu	2300	5	5	0	0	0	0	0	0	0	0	0	0	0	0.0	56.8	-63.3
24/07/15	Fri	0000	7	7	0	0	0	0	0	0	0	0	0	0	0	0.0	62.0	-68.8
24/07/15	Fri	0100	2	2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
24/07/15	Fri	0200	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
24/07/15	Fri	0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
24/07/15	Fri	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
24/07/15	Fri	0500	2	2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
24/07/15	Fri	0600	5	4	0	1	0	0	0	0	0	0	0	0	0	0.0	50.6	-58.0
24/07/15	Fri	0700	25	21	0	4	0	0	0	0	0	0	0	0	0	0.0	53.8	-61.6
24/07/15	Fri	0800	55	54	0	1	0	0	0	0	0	0	0	0	0	0.0	55.0	61.6
24/07/15	Fri	0900	37	29	0	8	0	0	0	0	0	0	0	0	0	0.0	49.0	-56.8
24/07/15	Fri	1000	18	16	0	2	0	0	0	0	0	0	0	0	0	0.0	52.4	-61.3
24/07/15	Fri	1100	30	25	1	4	0	0	0	0	0	0	0	0	0	0.0	51.5	-60.7
24/07/15	Fri	1200	29	28	0	1	0	0	0	0	0	0	0	0	0	0.0	50.9	-58.3
24/07/15	Fri	1300	23	20	0	3	0	0	0	0	0	0	0	0	0	0.0	49.9	-59.5
24/07/15	Fri	1400	33	28	1	4	0	0	0	0	0	0	0	0	0	0.0	51.9	-60.1
24/07/15	Fri	1500	82	69	1	12	0	0	0	0	0	0	0	0	0	0.0	52.2	59.2
24/07/15	Fri	1600	49	38	0	11	0	0	0	0	0	0	0	0	0	0.0	53.3	-61.3
24/07/15	Fri	1700	48	44	0	4	0	0	0	0	0	0	0	0	0	0.0	54.1	-60.6
24/07/15	Fri	1800	26	24	1	1	0	0	0	0	0	0	0	0	0	0.0	48.8	-56.0
24/07/15	Fri	1900	14	14	0	0	0	0	0	0	0	0	0	0	0	0.0	51.9	-58.8
24/07/15	Fri	2000	6	6	0	0	0	0	0	0	0	0	0	0	0	0.0	50.2	-56.4
24/07/15	Fri	2100	10	10	0	0	0	0	0	0	0	0	0	0	0	0.0	51.5	-61.0
24/07/15	Fri	2200	7	7	0	0	0	0	0	0	0	0	0	0	0	0.0	52.1	-58.9
24/07/15	Fri	2300	3	3	0	0	0	0	0	0	0	0	0	0	0	0.0	58.7	-59.5
25/07/15	Sat	0000	4	3	0	1	0	0	0	0	0	0	0	0	0	0.0	58.3	-63.4
25/07/15	Sat	0100	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
25/07/15	Sat	0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
25/07/15	Sat	0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
25/07/15	Sat	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
25/07/15	Sat	0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
25/07/15	Sat	0600	5	4	0	0	0	1	0	0	0	0	0	0	0	0.0	54.2	-58.3
25/07/15	Sat	0700	12	10	0	2	0	0	0	0	0	0	0	0	0	0.0	55.2	-63.6
25/07/15	Sat	0800	31	28	1	2	0	0	0	0	0	0	0	0	0	0.0	56.0	-61.5
25/07/15	Sat	0900	30	25	0	5	0	0	0	0	0	0	0	0	0	0.0	56.1	-64.5
25/07/15	Sat	1000	33	33	0	0	0	0	0	0	0	0	0	0	0	0.0	51.5	-58.1
25/07/15	Sat	1100	41	37	0	4	0	0	0	0	0	0	0	0	0	0.0	50.9	-59.6
25/07/15	Sat	1200	39	35	0	4	0	0	0	0	0	0	0	0	0	0.0	53.8	-61.1
25/07/15	Sat	1300	31	29	0	2	0	0	0	0	0	0	0	0	0	0.0	56.5	-63.2
25/07/15	Sat	1400	27	26	0	1	0	0	0	0	0	0	0	0	0	0.0	52.2	-61.3
25/07/15	Sat	1500	35	33	0	2	0	0	0	0	0	0	0	0	0	0.0	51.7	-59.9
25/07/15	Sat	1600	40	37	0	3	0	0	0	0	0	0	0	0	0	0.0	51.7	-59.5
25/07/15	Sat	1700	31	29	0	2	0	0	0	0	0	0	0	0	0	0.0	56.4	-62.2
25/07/15	Sat	1800	30	28	0	2	0	0	0	0	0	0	0	0	0	0.0	52.3	-58.0
25/07/15	Sat	1900	10	10	0	0	0	0	0	0	0	0	0	0	0	0.0	47.8	-58.0
25/07/15	Sat	2000	8	8	0	0	0	0	0	0	0	0	0	0	0	0.0	55.3	-60.8
25/07/15	Sat	2100	10	9	0	1	0	0	0	0	0	0	0	0	0	0.0	49.9	-52.5
25/07/15	Sat	2200	11	11	0	0	0	0	0	0	0	0	0	0	0	0.0	53.0	-65.3
25/07/15	Sat	2300	6	6	0	0	0	0	0	0	0	0	0	0	0	0.0	52.8	-58.0
26/07/15	Sun	0000	6	6	0	0	0	0	0	0	0	0	0	0	0	0.0	54.3	-57.0
26/07/15	Sun	0100	3	3	0	0	0	0	0	0	0	0	0	0	0	0.0	48.7	-59.2
26/07/15	Sun	0200	2	2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
26/07/15	Sun	0300	3	3	0	0	0	0	0	0	0	0	0	0	0	0.0	54.7	-57.1
26/07/15	Sun	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
26/07/15	Sun	0500	1	0	0	1	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
26/07/15	Sun	0600	4	4	0	0	0	0	0	0	0	0	0	0	0	0.0	62.0	-66.8
26/07/15	Sun	0700	5	5	0	0	0	0	0	0	0	0	0	0	0	0.0	57.4	-62.3
26/07/15	Sun	0800	23	23	0	0	0	0	0	0	0	0	0	0	0	0.0	54.9	-61.5
26/07/15	Sun	0900	28	28	0	0	0	0	0	0	0	0	0	0	0	0.0	51.2	-57.5
26/07/15	Sun	1000	27	26	0	1	0	0	0	0	0	0	0	0	0	0.0	53.3	-60.8
26/07/15	Sun	1100	34	30	0	4	0	0	0	0	0	0	0	0	0	0.0	51.6	-61.9
26/07/15	Sun	1200	23	23	0	0	0	0	0	0	0	0	0	0	0	0.0	49.9	-58.1
26/07/15	Sun	1300	23	21	0	2	0	0	0	0	0	0	0	0	0	0.0	52.6	-58.7
26/07/15	Sun	1400	19	17	0	2	0	0	0	0	0	0	0	0	0	0.0	54.5	-62.6
26/07/15	Sun	1500	20	19	0	1	0	0	0	0	0	0	0	0	0	0.0	49.0	-57.0
26/07/15	Sun	1600	27	27	0	0	0	0	0	0	0	0	0	0	0	0.0	51.8	-60.0
26/07/15	Sun	1700	30	27	0	3	0	0	0	0	0	0	0	0	0	0.0	54.0	-60.0
26/07/15	Sun	1800	13	13	0	0	0	0	0	0	0	0	0	0	0	0.0	54.1	-58.0
26/07/15	Sun	1900	11	11	0	0	0	0	0	0	0	0	0	0	0	0.0	49.1	-57.7
26/07/15	Sun	2000	8	8	0	0	0	0	0	0	0	0	0	0	0	0.0	53.3	-64.0
26/07/15	Sun	2100	4	4	0	0	0	0	0	0	0	0	0	0	0	0.0	54.8	-57.6
26/07/15	Sun	2200	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
26/07/15	Sun	2300	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0

Traffix Survey Traffic Count Summarised Time Format



Site No: 3810007

Site location: Henry Street, Belmont

Between : Stephen Street & Johnson Street

Direction : Eastbound & Westbound

Time range: 0000 20/07/15 to 2300 26/07/15

Note: A -ve 85%ile indicates a sample size less than 50

Filters: Class: 1-12, Speeds: All

Date	Day	Hr Start	Vol	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	Mean Sp	85%ile
Virtual	Mon	0000	8	8	0	0	0	0	0	0	0	0	0	0	0	0	50.3	-57.8
Virtual	Mon	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Mon	0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Mon	0300	4	4	0	0	0	0	0	0	0	0	0	0	0	0	46.8	-53.8
Virtual	Mon	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Mon	0500	6	6	0	0	0	0	0	0	0	0	0	0	0	0	51.5	-60.4
Virtual	Mon	0600	21	20	0	1	0	0	0	0	0	0	0	0	0	0	52.6	-59.5
Virtual	Mon	0700	32	29	0	3	0	0	0	0	0	0	0	0	0	0	54.6	-59.2
Virtual	Mon	0800	121	111	0	10	0	0	0	0	0	0	0	0	0	0	52.1	59.7
Virtual	Mon	0900	70	56	1	13	0	0	0	0	0	0	0	0	0	0	50.0	57.8
Virtual	Mon	1000	43	41	0	2	0	0	0	0	0	0	0	0	0	0	51.6	-57.8
Virtual	Mon	1100	55	47	2	6	0	0	0	0	0	0	0	0	0	0	48.7	57.8
Virtual	Mon	1200	57	53	0	4	0	0	0	0	0	0	0	0	0	0	51.8	61.2
Virtual	Mon	1300	47	44	1	2	0	0	0	0	0	0	0	0	0	0	52.8	-63.8
Virtual	Mon	1400	50	43	0	7	0	0	0	0	0	0	0	0	0	0	52.9	59.8
Virtual	Mon	1500	131	117	0	14	0	0	0	0	0	0	0	0	0	0	52.2	58.9
Virtual	Mon	1600	90	80	0	10	0	0	0	0	0	0	0	0	0	0	54.5	61.3
Virtual	Mon	1700	113	101	0	11	0	0	1	0	0	0	0	0	0	0	53.6	58.6
Virtual	Mon	1800	55	52	2	1	0	0	0	0	0	0	0	0	0	0	52.0	58.4
Virtual	Mon	1900	32	30	0	2	0	0	0	0	0	0	0	0	0	0	51.4	-60.2
Virtual	Mon	2000	13	13	0	0	0	0	0	0	0	0	0	0	0	0	50.8	-59.1
Virtual	Mon	2100	15	14	0	1	0	0	0	0	0	0	0	0	0	0	48.9	-54.8
Virtual	Mon	2200	16	15	0	1	0	0	0	0	0	0	0	0	0	0	51.5	-58.5
Virtual	Mon	2300	5	5	0	0	0	0	0	0	0	0	0	0	0	0	48.8	-58.8
Virtual	Tue	0000	3	2	0	1	0	0	0	0	0	0	0	0	0	0	60.0	-67.8
Virtual	Tue	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Tue	0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Tue	0300	4	4	0	0	0	0	0	0	0	0	0	0	0	0	40.5	-49.2
Virtual	Tue	0400	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Tue	0500	5	5	0	0	0	0	0	0	0	0	0	0	0	0	53.8	-59.0
Virtual	Tue	0600	23	21	0	2	0	0	0	0	0	0	0	0	0	0	53.2	-65.7
Virtual	Tue	0700	34	29	0	5	0	0	0	0	0	0	0	0	0	0	51.5	-60.9
Virtual	Tue	0800	129	121	0	6	0	0	0	1	1	0	0	0	0	0	51.7	59.2
Virtual	Tue	0900	71	54	0	17	0	0	0	0	0	0	0	0	0	0	49.2	57.5
Virtual	Tue	1000	40	34	0	6	0	0	0	0	0	0	0	0	0	0	48.9	-56.3
Virtual	Tue	1100	50	44	0	6	0	0	0	0	0	0	0	0	0	0	52.2	59.5
Virtual	Tue	1200	57	51	1	4	0	0	1	0	0	0	0	0	0	0	52.9	62.9
Virtual	Tue	1300	44	38	1	4	1	0	0	0	0	0	0	0	0	0	52.2	-61.4
Virtual	Tue	1400	42	42	0	0	0	0	0	0	0	0	0	0	0	0	51.3	-56.9
Virtual	Tue	1500	142	126	1	15	0	0	0	0	0	0	0	0	0	0	50.1	57.9
Virtual	Tue	1600	108	99	0	9	0	0	0	0	0	0	0	0	0	0	50.8	57.8
Virtual	Tue	1700	113	97	3	12	0	0	0	1	0	0	0	0	0	0	51.4	60.0
Virtual	Tue	1800	67	65	0	2	0	0	0	0	0	0	0	0	0	0	53.7	61.3
Virtual	Tue	1900	41	36	2	3	0	0	0	0	0	0	0	0	0	0	54.8	-60.6
Virtual	Tue	2000	12	12	0	0	0	0	0	0	0	0	0	0	0	0	60.5	-69.2
Virtual	Tue	2100	16	16	0	0	0	0	0	0	0	0	0	0	0	0	56.6	-65.0
Virtual	Tue	2200	12	11	0	1	0	0	0	0	0	0	0	0	0	0	54.2	-64.0
Virtual	Tue	2300	9	8	0	0	0	1	0	0	0	0	0	0	0	0	47.7	-55.7
Virtual	Wed	0000	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Wed	0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Wed	0200	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Wed	0300	4	4	0	0	0	0	0	0	0	0	0	0	0	0	36.5	-48.4
Virtual	Wed	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Wed	0500	9	9	0	0	0	0	0	0	0	0	0	0	0	0	48.9	-56.0
Virtual	Wed	0600	20	15	0	3	0	1	0	1	0	0	0	0	0	0	51.1	-60.0
Virtual	Wed	0700	41	28	3	6	2	1	0	1	0	0	0	0	0	0	52.7	-60.8
Virtual	Wed	0800	129	119	1	9	0	0	0	0	0	0	0	0	0	0	50.8	58.7
Virtual	Wed	0900	75	58	1	16	0	0	0	0	0	0	0	0	0	0	46.8	55.9
Virtual	Wed	1000	44	37	2	2	0	0	1	2	0	0	0	0	0	0	43.5	-54.5
Virtual	Wed	1100	56	52	0	4	0	0	0	0	0	0	0	0	0	0	49.2	57.6
Virtual	Wed	1200	54	51	1	1	1	0	0	0	0	0	0	0	0	0	50.0	56.8
Virtual	Wed	1300	46	39	0	7	0	0	0	0	0	0	0	0	0	0	49.7	-58.5
Virtual	Wed	1400	40	35	0	5	0	0	0	0	0	0	0	0	0	0	50.2	-60.0
Virtual	Wed	1500	134	113	0	21	0	0	0	0	0	0	0	0	0	0	52.5	59.5
Virtual	Wed	1600	123	112	0	11	0	0	0	0	0	0	0	0	0	0	51.4	59.5
Virtual	Wed	1700	105	97	2	6	0	0	0	0	0	0	0	0	0	0	52.6	60.3
Virtual	Wed	1800	74	72	0	2	0	0	0	0	0	0	0	0	0	0	52.1	60.0
Virtual	Wed	1900	52	51	0	1	0	0	0	0	0	0	0	0	0	0	53.8	60.8
Virtual	Wed	2000	44	43	0	1	0	0	0	0	0	0	0	0	0	0	52.5	-59.8
Virtual	Wed	2100	18	16	0	2	0	0	0	0	0	0	0	0	0	0	52.0	-61.3
Virtual	Wed	2200	9	8	0	1	0	0	0	0	0	0	0	0	0	0	54.9	-63.6
Virtual	Wed	2300	3	3	0	0	0	0	0	0	0	0	0	0	0	0	44.3	-48.1
Virtual	Thu	0000	5	5	0	0	0	0	0	0	0	0	0	0	0	0	54.0	-68.5
Virtual	Thu	0100	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Thu	0200	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Thu	0300	4	4	0	0	0	0	0	0	0	0	0	0	0	0	38.5	-48.2
Virtual	Thu	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Thu	0500	11	10	0	1	0	0	0	0	0	0	0	0	0	0	51.9	-59.9
Virtual	Thu	0600	17	14	0	2	0	0	1	0	0	0	0	0	0	0	50.8	-59.5

Virtual	Thu	0700	43	35	0	8	0	0	0	0	0	0	0	0	0	0	0	51.0	-59.2
Virtual	Thu	0800	141	129	1	11	0	0	0	0	0	0	0	0	0	0	0	49.5	59.2
Virtual	Thu	0900	93	71	1	20	1	0	0	0	0	0	0	0	0	0	0	48.0	55.0
Virtual	Thu	1000	85	73	1	11	0	0	0	0	0	0	0	0	0	0	0	48.9	56.9
Virtual	Thu	1100	98	88	1	9	0	0	0	0	0	0	0	0	0	0	0	47.1	56.2
Virtual	Thu	1200	83	79	1	3	0	0	0	0	0	0	0	0	0	0	0	48.3	55.5
Virtual	Thu	1300	66	61	0	5	0	0	0	0	0	0	0	0	0	0	0	44.0	51.5
Virtual	Thu	1400	78	71	0	7	0	0	0	0	0	0	0	0	0	0	0	41.7	50.2
Virtual	Thu	1500	182	161	3	18	0	0	0	0	0	0	0	0	0	0	0	44.7	54.7
Virtual	Thu	1600	135	128	1	6	0	0	0	0	0	0	0	0	0	0	0	47.6	54.6
Virtual	Thu	1700	117	109	2	6	0	0	0	0	0	0	0	0	0	0	0	51.6	60.9
Virtual	Thu	1800	81	78	0	3	0	0	0	0	0	0	0	0	0	0	0	50.0	57.2
Virtual	Thu	1900	62	57	0	5	0	0	0	0	0	0	0	0	0	0	0	54.5	61.4
Virtual	Thu	2000	41	41	0	0	0	0	0	0	0	0	0	0	0	0	0	53.7	-59.4
Virtual	Thu	2100	15	12	0	3	0	0	0	0	0	0	0	0	0	0	0	54.8	-59.9
Virtual	Thu	2200	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	44.4	-52.2
Virtual	Thu	2300	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	51.0	-58.7
Virtual	Fri	0000	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	57.7	-67.0
Virtual	Fri	0100	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Fri	0200	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Fri	0300	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	45.0	-56.6
Virtual	Fri	0400	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Fri	0500	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	58.2	-64.5
Virtual	Fri	0600	18	16	0	2	0	0	0	0	0	0	0	0	0	0	0	51.3	-60.6
Virtual	Fri	0700	39	33	0	6	0	0	0	0	0	0	0	0	0	0	0	53.1	-61.1
Virtual	Fri	0800	115	110	1	4	0	0	0	0	0	0	0	0	0	0	0	51.4	59.2
Virtual	Fri	0900	72	55	0	17	0	0	0	0	0	0	0	0	0	0	0	46.7	56.0
Virtual	Fri	1000	44	41	1	2	0	0	0	0	0	0	0	0	0	0	0	48.9	-58.2
Virtual	Fri	1100	58	52	1	5	0	0	0	0	0	0	0	0	0	0	0	50.4	59.1
Virtual	Fri	1200	42	40	1	1	0	0	0	0	0	0	0	0	0	0	0	51.2	-60.4
Virtual	Fri	1300	54	51	0	3	0	0	0	0	0	0	0	0	0	0	0	49.2	57.3
Virtual	Fri	1400	52	47	1	4	0	0	0	0	0	0	0	0	0	0	0	51.8	59.2
Virtual	Fri	1500	151	131	1	18	0	0	0	1	0	0	0	0	0	0	0	49.7	56.7
Virtual	Fri	1600	98	82	1	15	0	0	0	0	0	0	0	0	0	0	0	53.2	60.9
Virtual	Fri	1700	75	69	0	6	0	0	0	0	0	0	0	0	0	0	0	51.6	58.5
Virtual	Fri	1800	45	42	2	1	0	0	0	0	0	0	0	0	0	0	0	49.3	-56.6
Virtual	Fri	1900	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	49.4	-56.8
Virtual	Fri	2000	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	55.2	-61.1
Virtual	Fri	2100	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	52.4	-62.0
Virtual	Fri	2200	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	51.3	-57.4
Virtual	Fri	2300	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	52.4	-59.2
Virtual	Sat	0000	8	7	0	1	0	0	0	0	0	0	0	0	0	0	0	55.4	-65.8
Virtual	Sat	0100	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	37.3	-49.0
Virtual	Sat	0200	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Sat	0300	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	36.7	-46.4
Virtual	Sat	0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Sat	0500	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	53.0	-55.7
Virtual	Sat	0600	6	5	0	0	0	1	0	0	0	0	0	0	0	0	0	55.0	-59.3
Virtual	Sat	0700	21	19	0	2	0	0	0	0	0	0	0	0	0	0	0	54.4	-61.7
Virtual	Sat	0800	44	41	1	2	0	0	0	0	0	0	0	0	0	0	0	55.0	-60.8
Virtual	Sat	0900	52	45	0	7	0	0	0	0	0	0	0	0	0	0	0	53.9	63.2
Virtual	Sat	1000	76	74	1	1	0	0	0	0	0	0	0	0	0	0	0	51.2	58.7
Virtual	Sat	1100	66	62	0	4	0	0	0	0	0	0	0	0	0	0	0	49.7	59.4
Virtual	Sat	1200	72	66	1	5	0	0	0	0	0	0	0	0	0	0	0	50.9	59.1
Virtual	Sat	1300	51	48	0	3	0	0	0	0	0	0	0	0	0	0	0	53.6	61.8
Virtual	Sat	1400	56	54	1	1	0	0	0	0	0	0	0	0	0	0	0	50.1	59.7
Virtual	Sat	1500	64	62	0	2	0	0	0	0	0	0	0	0	0	0	0	50.0	58.8
Virtual	Sat	1600	79	74	0	5	0	0	0	0	0	0	0	0	0	0	0	50.7	58.6
Virtual	Sat	1700	72	69	0	3	0	0	0	0	0	0	0	0	0	0	0	52.9	59.1
Virtual	Sat	1800	54	52	0	2	0	0	0	0	0	0	0	0	0	0	0	50.8	57.5
Virtual	Sat	1900	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	46.9	-55.5
Virtual	Sat	2000	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	52.9	-59.3
Virtual	Sat	2100	12	11	0	1	0	0	0	0	0	0	0	0	0	0	0	50.4	-53.2
Virtual	Sat	2200	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	50.8	-61.8
Virtual	Sat	2300	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	50.8	-57.5
Virtual	Sun	0000	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	50.0	-56.0
Virtual	Sun	0100	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	44.0	-56.9
Virtual	Sun	0200	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	63.3	-69.3
Virtual	Sun	0300	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	49.0	-56.8
Virtual	Sun	0400	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Sun	0500	3	2	0	1	0	0	0	0	0	0	0	0	0	0	0	42.0	-50.1
Virtual	Sun	0600	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	62.6	-68.0
Virtual	Sun	0700	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	56.2	-61.0
Virtual	Sun	0800	27	27	0	0	0	0	0	0	0	0	0	0	0	0	0	53.3	-61.0
Virtual	Sun	0900	47	47	0	0	0	0	0	0	0	0	0	0	0	0	0	50.1	-57.5
Virtual	Sun	1000	58	55	0	3	0	0	0	0	0	0	0	0	0	0	0	51.9	57.8
Virtual	Sun	1100	73	69	0	4	0	0	0	0	0	0	0	0	0	0	0	49.0	58.1
Virtual	Sun	1200	46	44	0	2	0	0	0	0	0	0	0	0	0	0	0	49.4	-56.1
Virtual	Sun	1300	49	45	0	4	0	0	0	0	0	0	0	0	0	0	0	51.3	-59.7
Virtual	Sun	1400	33	30	1	2	0	0	0	0	0	0	0	0	0	0	0	50.6	-61.0
Virtual	Sun	1500	34	33	0	1	0	0	0	0	0	0	0	0	0	0	0	48.3	-56.6
Virtual	Sun	1600	48	47	0	0	0	0	1	0	0	0	0	0	0	0	0	48.9	-58.4
Virtual	Sun	1700	49	46	0	3	0	0	0	0	0	0	0	0	0	0	0	53.7	-60.7
Virtual	Sun	1800	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	54.3	-58.8
Virtual	Sun	1900	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	50.6	-56.8
Virtual	Sun	2000	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	49.1	-59.5
Virtual	Sun	2100	7	6	1	0	0	0	0	0	0	0	0	0	0	0	0	54.1	-58.7
Virtual	Sun	2200	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Virtual	Sun	2300	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

Appendix C:
Existing Traffic Conditions - Sidra
Analysis

MOVEMENT SUMMARY

Site: Corio-Waurn Ponds Rd - Northbound Carriageway AM

Network: AM Existing

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
 Giveaway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows		Arrival Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %				Vehicles veh	Distance m			
South: Corio-Waurn Ponds Road													
4	L2	16	3.0	16	3.0	0.009	5.6	LOS A	0.0	0.0	0.00	0.58	53.5
5	T1	1519	3.0	1519	3.0	0.397	0.1	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1535	3.0	1535	3.0	0.397	0.1	NA	0.0	0.0	0.00	0.01	59.8
North: Corio-Waurn Ponds Road													
12	R2	73	3.0	73	3.0	0.534	43.3	LOS A	2.0	14.2	0.93	1.06	34.3
Approach		73	3.0	73	3.0	0.534	43.3	NA	2.0	14.2	0.93	1.06	34.3
West: Henry Street													
1	L2	54	3.0	54	3.0	0.388	15.5	LOS A	1.6	11.4	0.84	1.00	40.3
2	T1	29	3.0	29	3.0	0.388	50.4	LOS A	1.6	11.4	0.84	1.00	31.5
Approach		83	3.0	83	3.0	0.388	27.9	LOS A	1.6	11.4	0.84	1.00	38.0
All Vehicles		1691	3.0	1691	3.0	0.534	3.3	LOS A	2.0	14.2	0.08	0.10	56.7

Level of Service (LOS) Method: Degree of Saturation (SIDRA METHOD).

Vehicle movement LOS values are based on degree of saturation per movement

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Corio-Waurn Ponds Rd - Southbound carriageway AM

Network: AM Existing

Staged crossing Stage 2 (Median) at three-way intersection with 5-lane major road.

Give-way behaviour assumed at Stage 2.

Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows		Arrival Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %								
North: Corio-Waurn Ponds Road													
11	T1	856	3.0	856	3.0	0.224	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		856	3.0	856	3.0	0.224	0.0	NA	0.0	0.0	0.00	0.00	60.0
West: Median Storage Area													
3	R2	29	3.0	29	3.0	0.046	3.7	LOS A	0.1	0.8	0.56	0.53	47.8
Approach		29	3.0	29	3.0	0.046	3.7	LOS A	0.1	0.8	0.56	0.53	47.8
All Vehicles		885	3.0	885	3.0	0.224	0.1	LOS A	0.1	0.8	0.02	0.02	59.7

Level of Service (LOS) Method: Degree of Saturation (SIDRA METHOD).

Vehicle movement LOS values are based on degree of saturation per movement

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: Corio-Waurn Ponds Rd - Northbound Carriageway PM

Network: PM Existing

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
 Giveaway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Corio-Waurn Ponds Road													
4	L2	13	3.0	13	3.0	0.007	5.6	LOS A	0.0	0.0	0.00	0.58	53.5
5	T1	1103	3.0	1103	3.0	0.288	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1116	3.0	1116	3.0	0.288	0.1	NA	0.0	0.0	0.00	0.01	59.9
North: Corio-Waurn Ponds Road													
12	R2	61	3.0	61	3.0	0.225	18.5	LOS A	0.8	5.6	0.78	0.93	44.8
Approach		61	3.0	61	3.0	0.225	18.5	NA	0.8	5.6	0.78	0.93	44.8
West: Henry Street													
1	L2	35	3.0	35	3.0	0.149	8.6	LOS A	0.6	4.0	0.65	0.80	47.8
2	T1	23	3.0	23	3.0	0.149	21.5	LOS A	0.6	4.0	0.65	0.80	41.5
Approach		58	3.0	58	3.0	0.149	13.8	LOS A	0.6	4.0	0.65	0.80	46.0
All Vehicles		1235	3.0	1235	3.0	0.288	1.6	LOS A	0.8	5.6	0.07	0.09	58.2

Level of Service (LOS) Method: Degree of Saturation (SIDRA METHOD).

Vehicle movement LOS values are based on degree of saturation per movement

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Corio-Waurn Ponds Rd - Southbound carriageway PM

Network: PM Existing

Staged crossing Stage 2 (Median) at three-way intersection with 5-lane major road.

Give-way behaviour assumed at Stage 2.

Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows		Arrival Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %								
North: Corio-Waurn Ponds Road													
11	T1	1369	3.0	1369	3.0	0.358	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1369	3.0	1369	3.0	0.358	0.0	NA	0.0	0.0	0.00	0.00	59.9
West: Median Storage Area													
3	R2	23	3.0	23	3.0	0.072	9.5	LOS A	0.2	1.2	0.79	0.79	41.5
Approach		23	3.0	23	3.0	0.072	9.5	LOS A	0.2	1.2	0.79	0.79	41.5
All Vehicles		1393	3.0	1393	3.0	0.358	0.2	LOS A	0.2	1.2	0.01	0.01	59.7

Level of Service (LOS) Method: Degree of Saturation (SIDRA METHOD).

Vehicle movement LOS values are based on degree of saturation per movement

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

Appendix D:
Future Traffic Conditions - Sidra
Analysis

MOVEMENT SUMMARY

Site: Corio-Waurn Ponds Rd - Northbound Carriageway AM - Future

Network: AM Future

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Corio-Waurn Ponds Road													
4	L2	22	3.0	22	3.0	0.012	5.6	LOS A	0.0	0.0	0.00	0.58	53.5
5	T1	1519	3.0	1519	3.0	0.397	0.1	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1541	3.0	1541	3.0	0.397	0.1	NA	0.0	0.0	0.00	0.01	59.8
North: Corio-Waurn Ponds Road													
12	R2	86	3.0	86	3.0	0.640	49.2	LOS B	2.6	18.5	0.95	1.11	32.5
Approach		86	3.0	86	3.0	0.640	49.2	NA	2.6	18.5	0.95	1.11	32.5
West: Henry Street													
1	L2	108	3.0	108	3.0	0.732	31.4	LOS C	4.6	32.8	0.89	1.27	34.1
2	T1	53	3.0	53	3.0	0.732	71.2	LOS C	4.6	32.8	0.89	1.27	24.6
Approach		161	3.0	161	3.0	0.732	44.4	LOS C	4.6	32.8	0.89	1.27	31.7
All Vehicles		1788	3.0	1788	3.0	0.732	6.5	LOS C	4.6	32.8	0.13	0.17	53.9

Level of Service (LOS) Method: Degree of Saturation (SIDRA METHOD).

Vehicle movement LOS values are based on degree of saturation per movement

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Corio-Waurn Ponds Rd - Southbound carriageway AM - Future

Network: AM Future

Staged crossing Stage 2 (Median) at three-way intersection with 5-lane major road.
Give-way behaviour assumed at Stage 2.
Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North: Corio-Waurn Ponds Road													
11	T1	856	3.0	856	3.0	0.224	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		856	3.0	856	3.0	0.224	0.0	NA	0.0	0.0	0.00	0.00	60.0
West: Median Storage Area													
3	R2	53	3.0	53	3.0	0.082	3.8	LOS A	0.3	1.5	0.57	0.57	8.9
Approach		53	3.0	53	3.0	0.082	3.8	LOS A	0.3	1.5	0.57	0.57	8.9
All Vehicles		908	3.0	908	3.0	0.224	0.2	LOS A	0.3	1.5	0.03	0.03	59.6

Level of Service (LOS) Method: Degree of Saturation (SIDRA METHOD).

Vehicle movement LOS values are based on degree of saturation per movement

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: TRAFFIX GROUP PTY LTD | Processed: Wednesday, 1 February 2017 12:03:13 PM

Project: P:\Synergy\Projects\GRP1\GRP18820\Project1.sip6

MOVEMENT SUMMARY

Site: Corio-Waurn Ponds Rd - Northbound Carriageway PM - Future

Network: PM Future

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Arrival Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Corio-Waurn Ponds Road													
4	L2	31	3.0	31	3.0	0.017	5.6	LOS A	0.0	0.0	0.00	0.58	53.5
5	T1	1103	3.0	1103	3.0	0.288	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1134	3.0	1134	3.0	0.288	0.2	NA	0.0	0.0	0.00	0.02	59.7
North: Corio-Waurn Ponds Road													
12	R2	102	3.0	102	3.0	0.384	21.4	LOS A	1.5	11.0	0.82	0.99	43.2
Approach		102	3.0	102	3.0	0.384	21.4	NA	1.5	11.0	0.82	0.99	43.2
West: Henry Street													
1	L2	62	3.0	62	3.0	0.251	9.2	LOS A	1.0	7.2	0.67	0.85	47.1
2	T1	35	3.0	35	3.0	0.251	24.6	LOS A	1.0	7.2	0.67	0.85	40.6
Approach		97	3.0	97	3.0	0.251	14.8	LOS A	1.0	7.2	0.67	0.85	45.5
All Vehicles		1333	3.0	1333	3.0	0.384	2.9	LOS A	1.5	11.0	0.11	0.15	57.0

Level of Service (LOS) Method: Degree of Saturation (SIDRA METHOD).

Vehicle movement LOS values are based on degree of saturation per movement

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Corio-Waurn Ponds Rd - Southbound carriageway PM - Future

Network: PM Future

Staged crossing Stage 2 (Median) at three-way intersection with 5-lane major road.
 Give-way behaviour assumed at Stage 2.
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North: Corio-Waurn Ponds Road													
11	T1	1369	3.0	1369	3.0	0.358	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1369	3.0	1369	3.0	0.358	0.0	NA	0.0	0.0	0.00	0.00	59.9
West: Median Storage Area													
3	R2	35	3.0	35	3.0	0.109	9.7	LOS A	0.3	1.8	0.79	0.79	41.4
Approach		35	3.0	35	3.0	0.109	9.7	LOS A	0.3	1.8	0.79	0.79	41.4
All Vehicles		1404	3.0	1404	3.0	0.358	0.3	LOS A	0.3	1.8	0.02	0.02	59.6

Level of Service (LOS) Method: Degree of Saturation (SIDRA METHOD).
 Vehicle movement LOS values are based on degree of saturation per movement
 Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.
 SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Traffic Engineering Assessment

1 Henry Street, Belmont: Proposed Rezoning and Residential Development

Appendix E: Swept Path Diagrams

12.5m Truck Navigation

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5km/h)

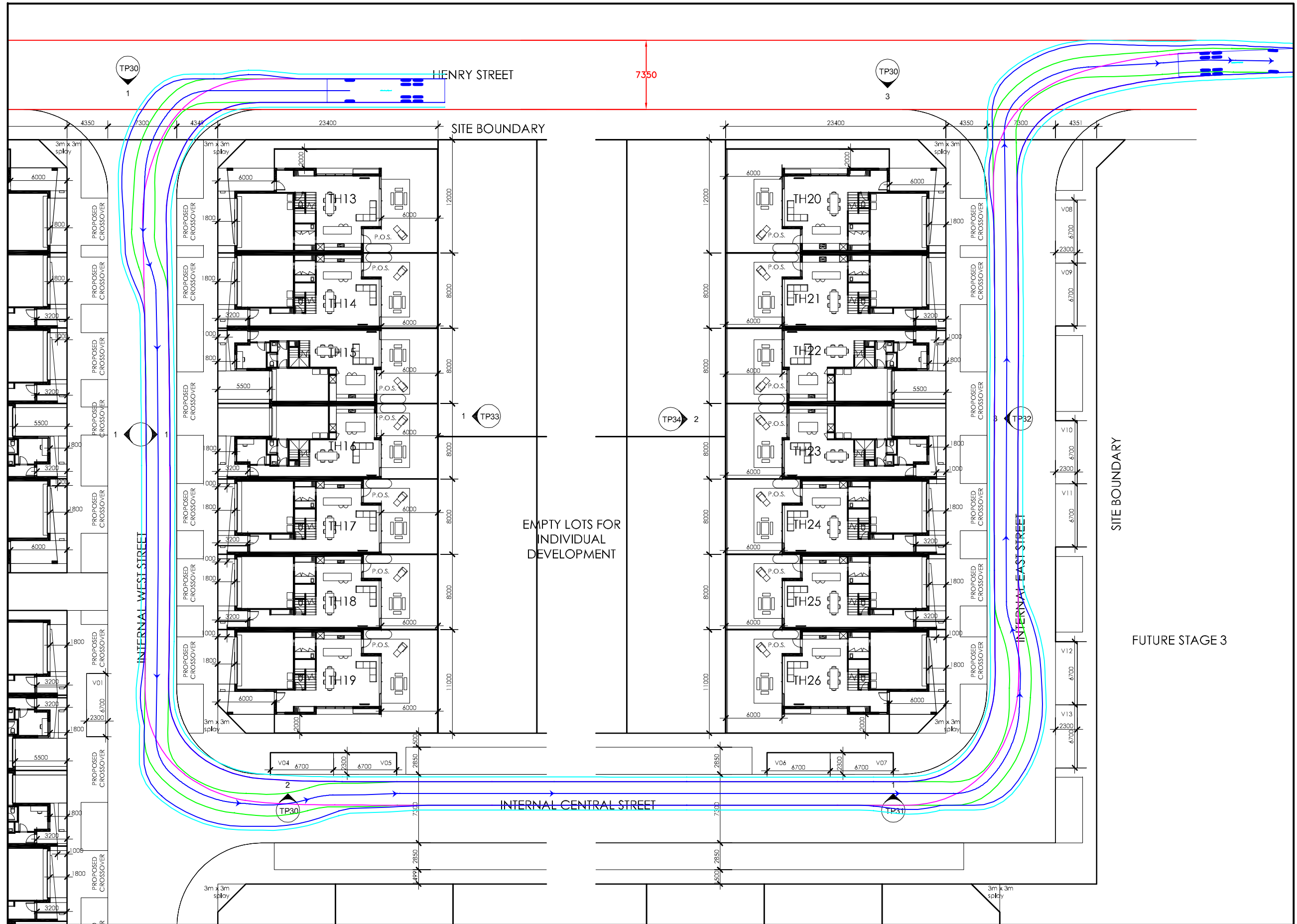
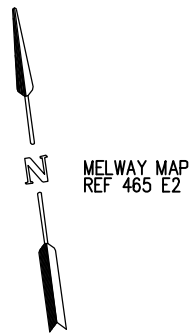
12500

HRV-12.5m-AS-2890

Width : 2500 mm
Track : 2500
Lock to Lock Time : 6.0
Steering Angle : 35.0

LEGEND

- FRONT WHEELS
- REAR WHEELS
- VEHICLE BODY
- BODY CLEARANCE



REV.	REVISION NOTES	REVISION DATE

GENERAL NOTES

1. BASE INFORMATION FROM:
Stage 1 - Sheet - TP11 - GROUND FLOOR PLAN.dwg
PREPARED BY Genton Architecture - received 23-03-2016

DESIGNED:
J. STONE 24 MAR 2016

CHECKED:
L. FURNESS 24 MAR 2016

FILE NAME:
18820-01.DWG

ISSUE:
A

Traffix Engineers and Transport Planners

Suite 8/431 Burke Road TEL: (03) 9822-2888
GLEN IRIS VICTORIA 3146 FAX: (03) 9822-7444

1 HENRY STREET, BELMONT

12.5M HRV SWEEP PATHS

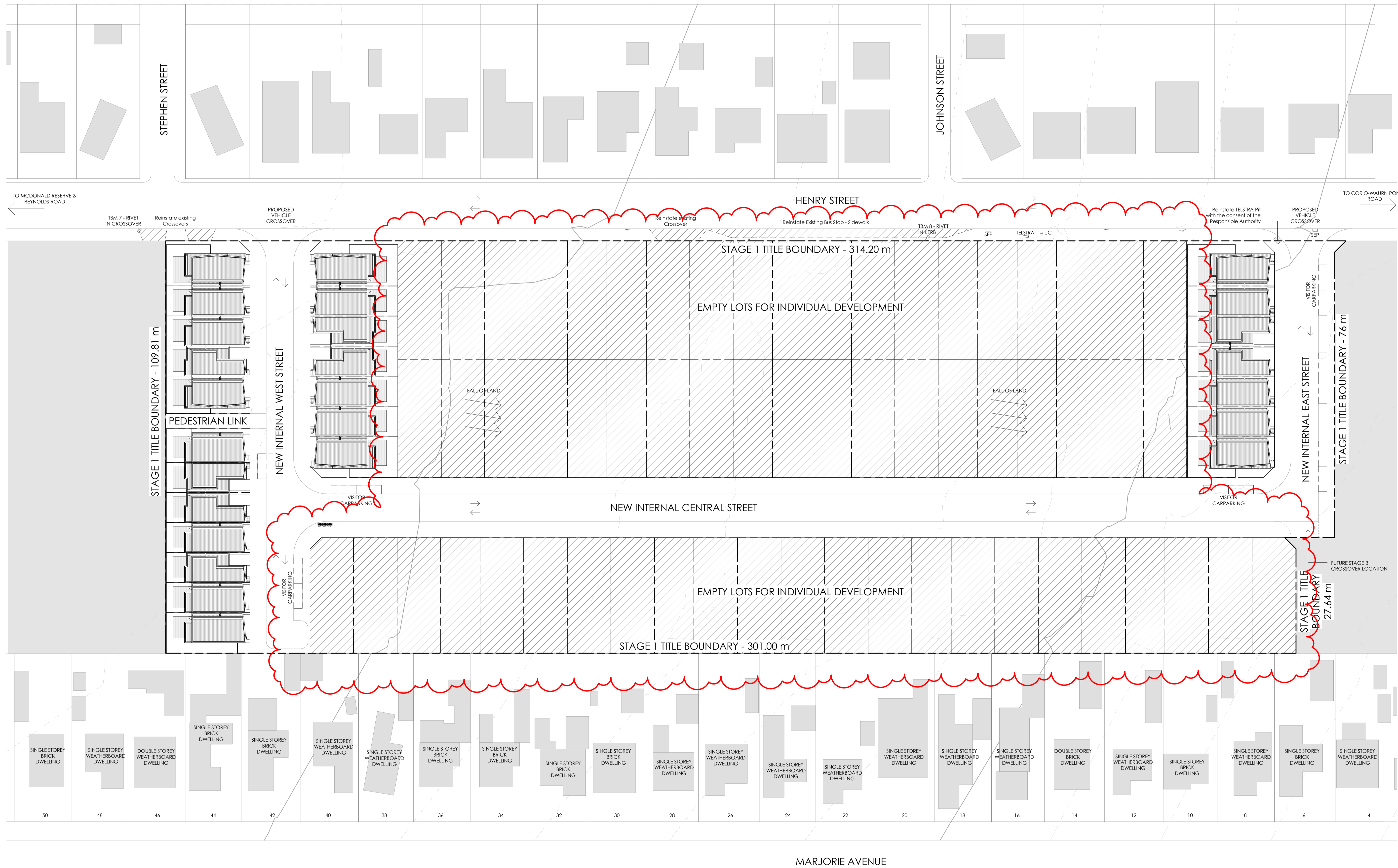
PROPOSED RESIDENTIAL DEVELOPMENT

SCALE 0 4.0 8

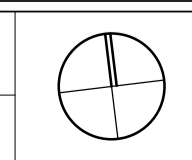
SHEET No. 01/01

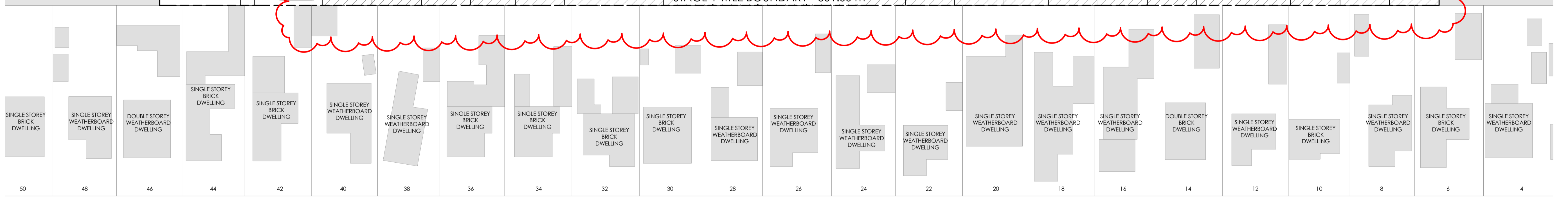
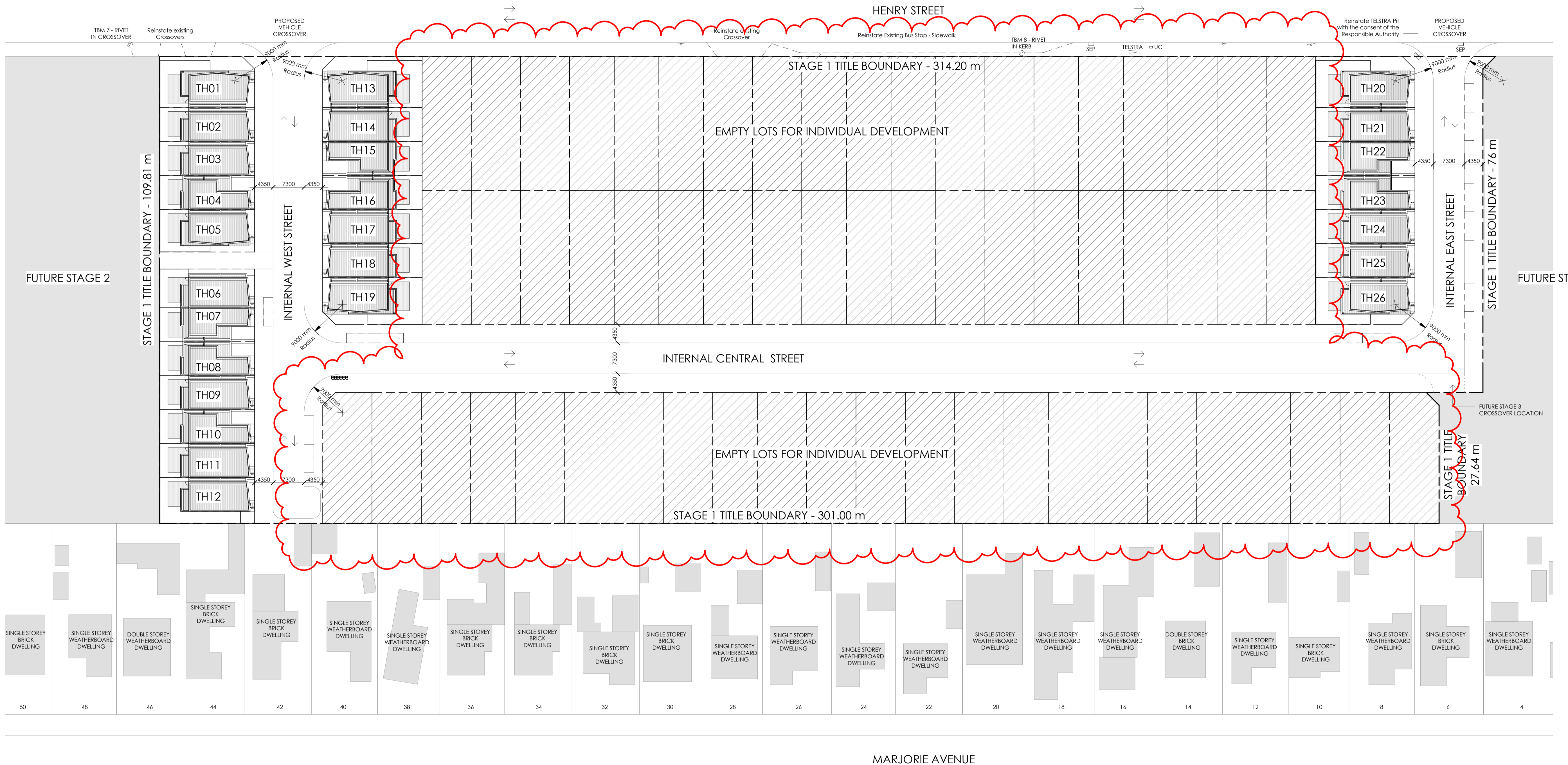
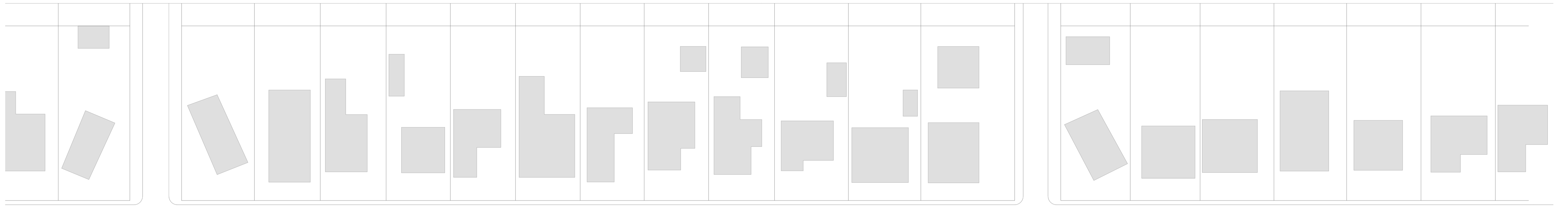
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Appendix B (Appendix)



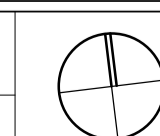
No.	Description
B	EMPTY LOT SUBDIVISION BREAK UP AMENDED. LOTS RE-NUMBERED ACCORDINGLY.





SITE INFORMATION	
TOTAL AREA STAGE 1	33,814 SQM
TOTAL NUM. OF LOTS	87
TOTAL AREA STAGE 1-A	20
TOTAL AREA STAGE 1-B	27
TOTAL AREA STAGE 1-C	40

No.	Description
B	EMPTY LOT SUBDIVISION BREAK UP AMENDED. LOTS RE-NUMBERED ACCORDINGLY.



DEVELOPMENT SUMMARY	
TOTAL AREA STAGE 1	33,814 SQM
PROPOSED UNITS	
- Type A	12
- Type B	8
- Type C	6
TOTAL	26
TOTAL VISITOR CAR PARKING ON THE STREET	13
TH	TYPE
TH01	TYPE C - CORNER
TH02	TYPE A - DOUBLE GARAGE
TH03	TYPE A - DOUBLE GARAGE
TH04	TYPE B - TANDEM GARAGE
TH05	TYPE C - CORNER
TH06	TYPE A - DOUBLE GARAGE
TH07	TYPE B - TANDEM GARAGE
TH08	TYPE B - TANDEM GARAGE
TH09	TYPE A - DOUBLE GARAGE
TH10	TYPE B - TANDEM GARAGE
TH11	TYPE A - DOUBLE GARAGE
TH12	TYPE A - DOUBLE GARAGE
TH13	TYPE C - CORNER
TH14	TYPE A - DOUBLE GARAGE
TH15	TYPE B - TANDEM GARAGE
TH16	TYPE B - TANDEM GARAGE
TH17	TYPE A - DOUBLE GARAGE
TH18	TYPE A - DOUBLE GARAGE
TH19	TYPE C - CORNER
TH20	TYPE C - CORNER
TH21	TYPE A - DOUBLE GARAGE
TH22	TYPE B - TANDEM GARAGE
TH23	TYPE B - TANDEM GARAGE
TH24	TYPE A - DOUBLE GARAGE
TH25	TYPE A - DOUBLE GARAGE
TH26	TYPE C - CORNER

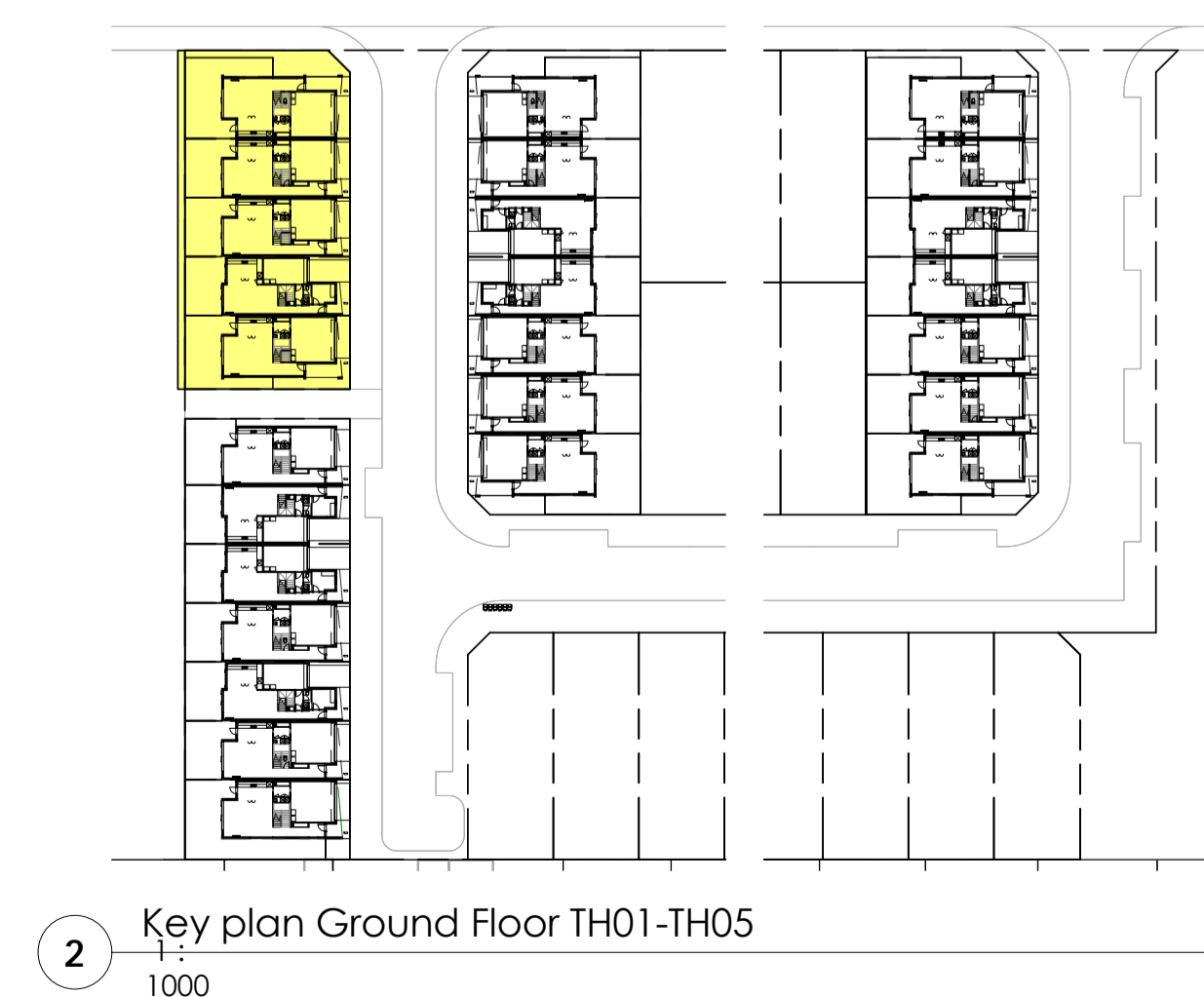


Areas GFA		Areas P.O.S.	
Townhouse	Area	Townhouse	Area
TH01	Ground floor 121 m ² First floor 93 m ² 214 m ²	TH01	Private open space 55 m ²
TH02	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH02	Private open space 40 m ²
TH03	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH03	Private open space 40 m ²
TH04	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH04	Private open space 40 m ²
TH05	Ground floor 117 m ² First floor 93 m ² 210 m ²	TH05	Private open space 50 m ²
TH06	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH06	Private open space 52 m ²
TH07	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH07	Private open space 52 m ²
TH08	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH08	Private open space 42 m ²
TH09	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH09	Private open space 42 m ²
TH10	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH10	Private open space 40 m ²
TH11	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH11	Private open space 40 m ²
TH12	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH12	Private open space 54 m ²
TH13	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH13	Private open space 54 m ²
TH14	Ground floor 121 m ² First floor 93 m ² 214 m ²	TH14	Private open space 66 m ²
TH15	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH15	Private open space 66 m ²
TH16	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH16	Private open space 48 m ²
TH17	Ground floor 121 m ² First floor 93 m ² 214 m ²	TH17	Private open space 48 m ²
TH18	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH18	Private open space 48 m ²
TH19	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH19	Private open space 66 m ²
TH20	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH20	Private open space 66 m ²
TH21	Ground floor 108 m ² First floor 82 m ² 190 m ²	TH21	Private open space 66 m ²
TH22	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH22	Private open space 48 m ²
TH23	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH23	Private open space 48 m ²
TH24	Ground floor 117 m ² First floor 91 m ² 208 m ²	TH24	Private open space 48 m ²
TH25	Ground floor 121 m ² First floor 93 m ² 214 m ²	TH25	Private open space 48 m ²
TH26	Ground floor 121 m ² First floor 93 m ² 214 m ²	TH26	Private open space 48 m ²
Grand total		Grand total	1288 m ²

NOTE:
REFER TO TP12-TP15 FOR DETAILS

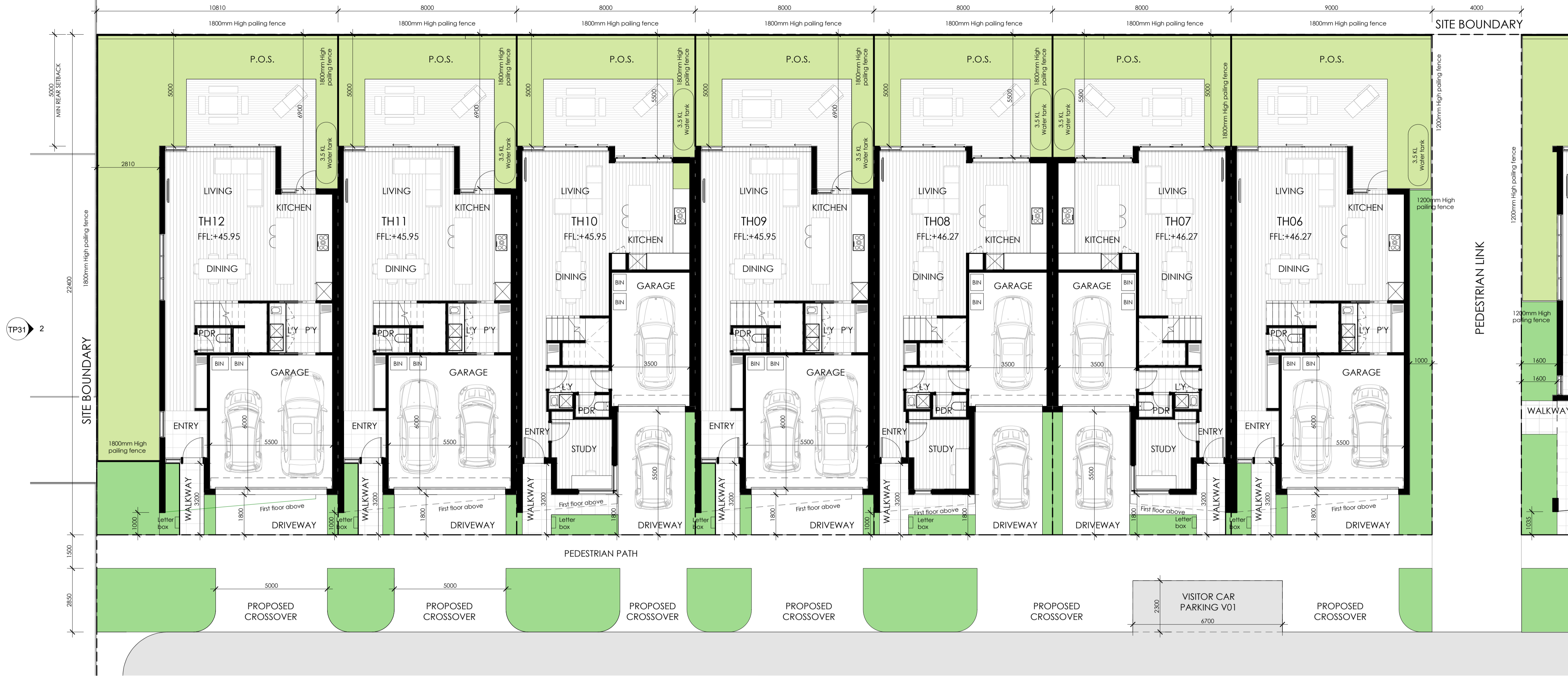


1 Ground Floor TH01 - TH05
1 : 100



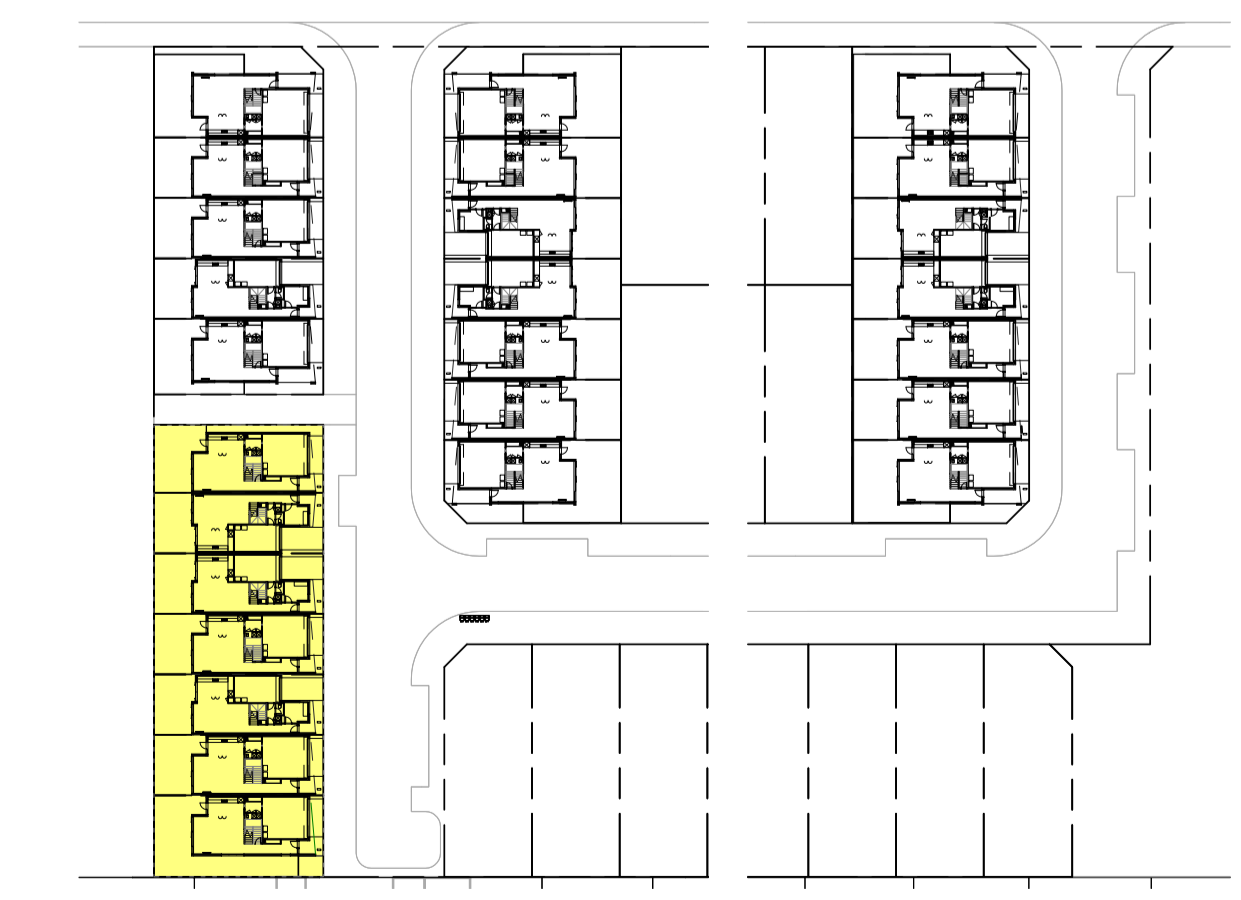
2 Key plan Ground Floor TH01-TH05
1000

TP33
3



1 Ground Floor TH06 - TH12
1 : 100

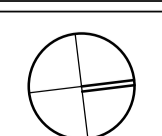
INTERNAL WEST STREET



2 Key plan Ground Floor TH06-TH12
1 : 1000

No.	Description
A	AMENDMENTS AFTER COUNCIL REFERRAL LETTERS. PARAPET HEIGHTS RAISED BY 200mm TYPICALLY.

TITLE
GROUND FLOOR TH06 -TH12
PROJECT Belmont, Geelong



SCALE As indicated @ A1
0 1 2 3 4 5 m

JOB NO. 1503
DATE 08/09/2016
DRAWING NO. **TP13 A**
REV. No.



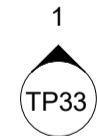
INTERNAL WEST STREET



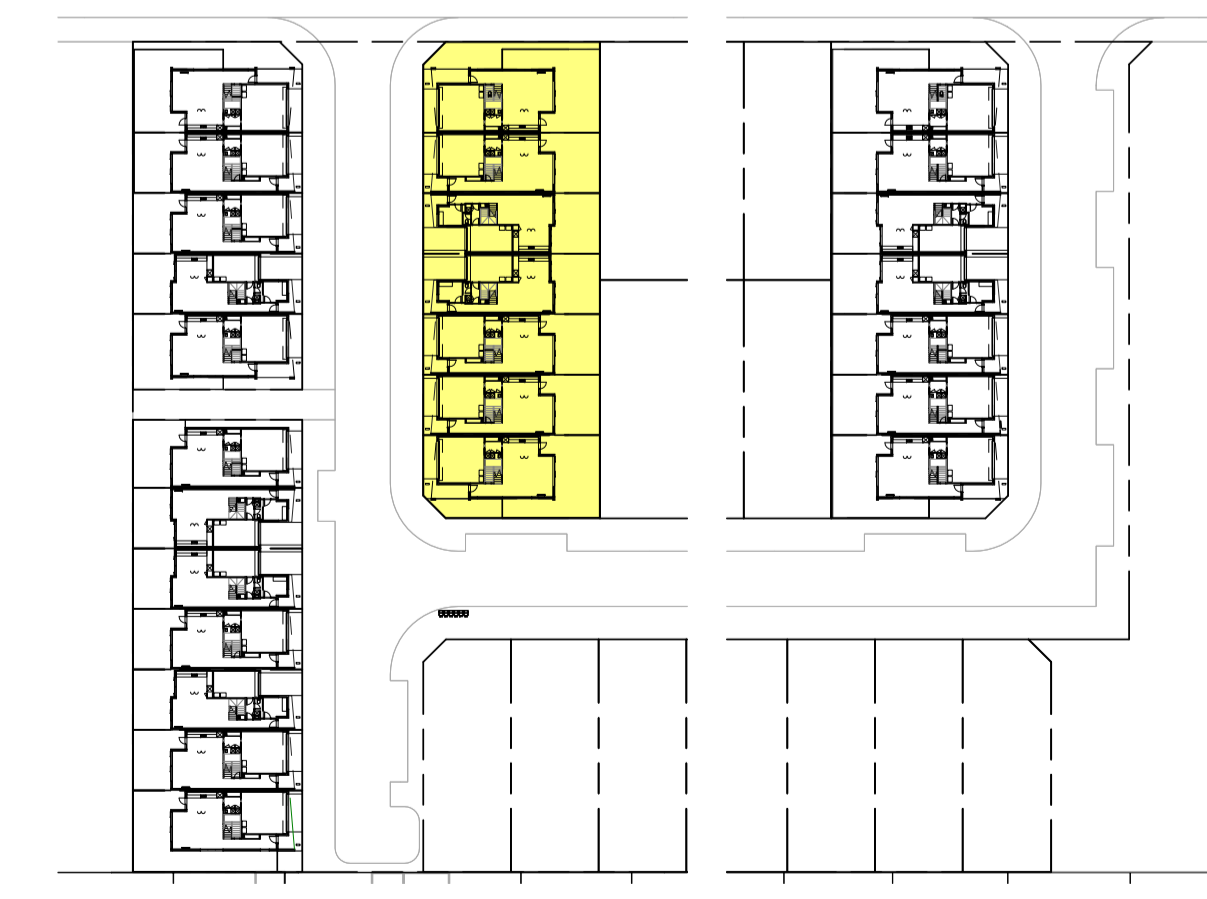
INTERNAL CENTRAL STREET

HENRY STREET

1 Ground Floor TH13 - TH19
1 : 100



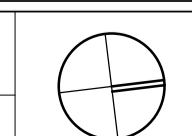
TP33



2 Key plan Ground Floor TH13-TH19
1000

No.	Description
A	AMENDMENTS AFTER COUNCIL REFERRAL LETTERS: PARAPET HEIGHTS RAISED BY 200mm TYPICALLY.

TITLE: **GROUND FLOOR TH13 - TH19**
PROJECT: Belmont, Geelong



SCALE: As indicated @ A1
0 1 2 3 4 5 m

JOB NO.	1503
DATE	08/09/2016
DRAWING NO.	TP14 A
REV. No.	

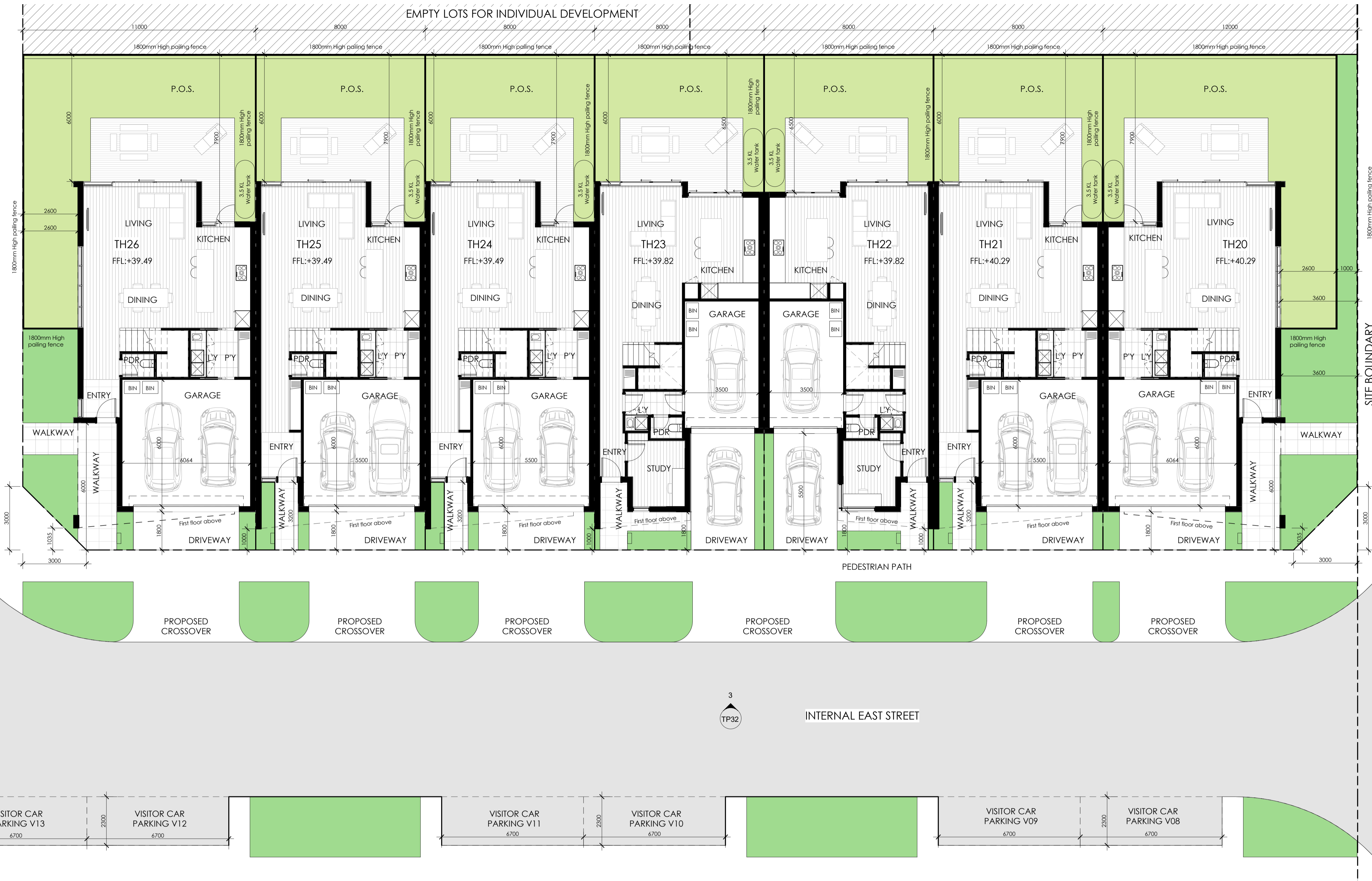
INTERNAL CENTRAL STREET

TP31 1

HENRY STREET

TP30 3

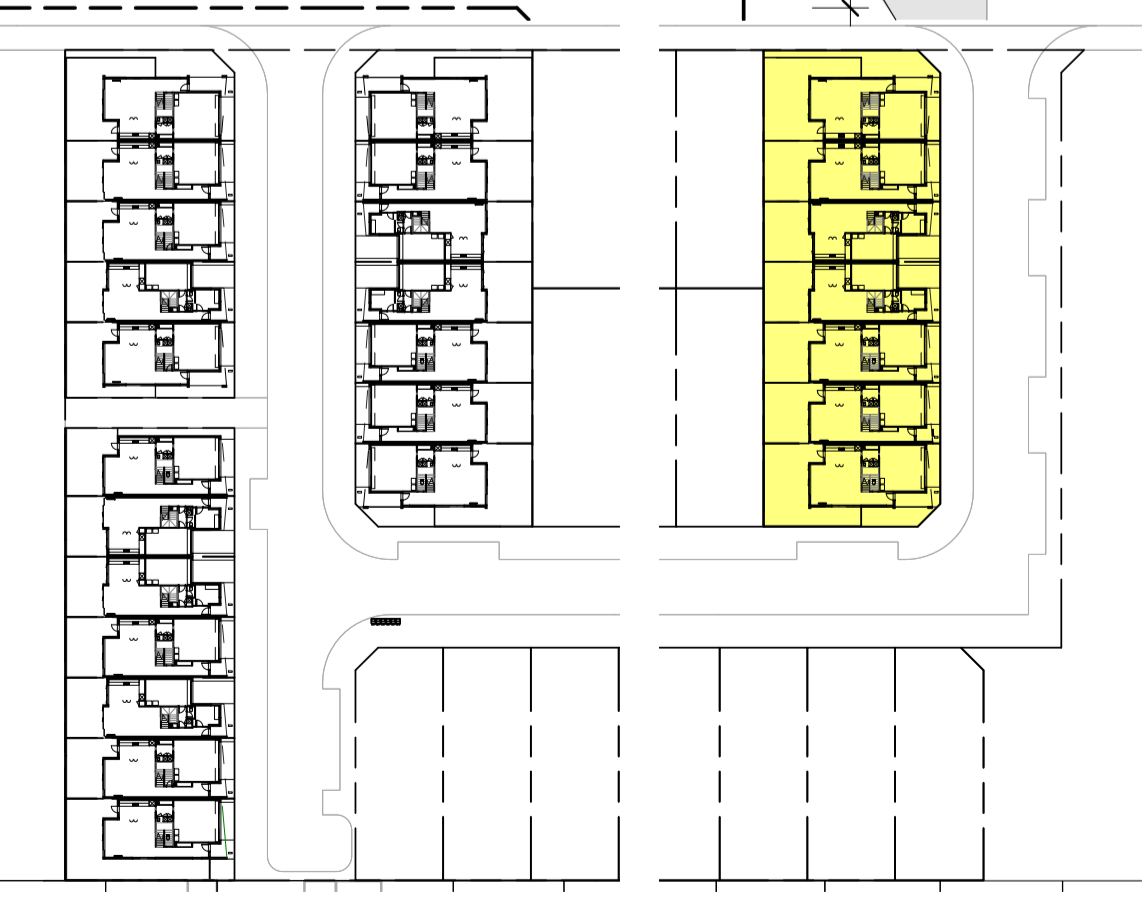
EMPTY LOTS FOR INDIVIDUAL DEVELOPMENT



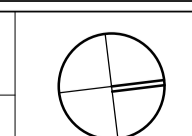
1 Ground Floor TH20 - TH26
1 : 100

SITE BOUNDARY

2 Key plan Ground Floor TH20-TH26
1 : 1000

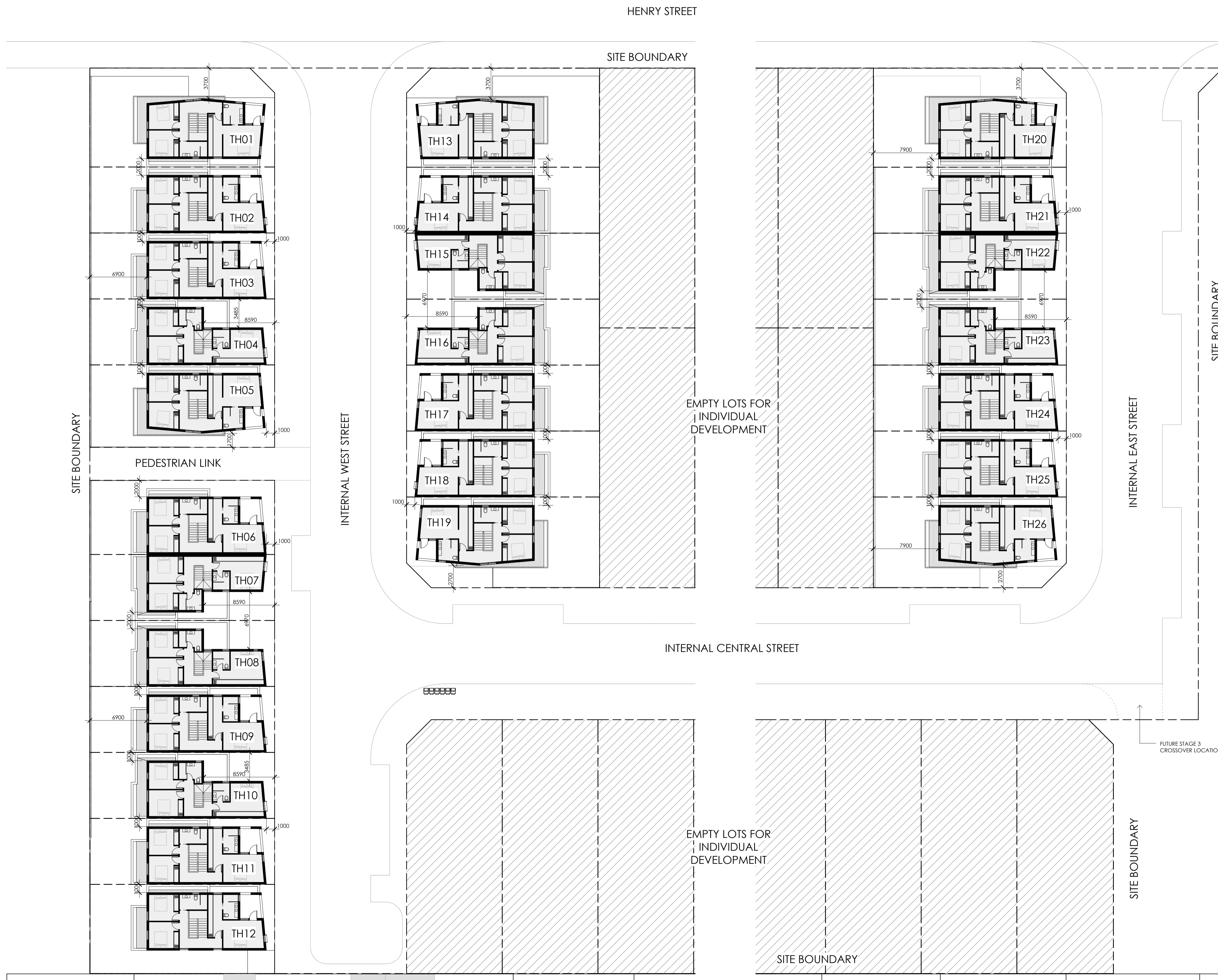


No.	Description
A	AMENDMENTS AFTER COUNCIL REFERRAL LETTERS: PARAPET HEIGHTS RAISED BY 200mm TYPICALLY.



DEVELOPMENT SUMMARY	
TOTAL AREA STAGE 1	33,814 SQM
PROPOSED UNITS	
- Type A	12
- Type B	8
- Type C	6
TOTAL	26
TOTAL VISITOR CAR PARKING ON THE STREET	13

TH	TYPE
TH01	TYPE C - CORNER
TH02	TYPE A - DOUBLE GARAGE
TH03	TYPE A - DOUBLE GARAGE
TH04	TYPE B - TANDEM GARAGE
TH05	TYPE C - CORNER
TH06	TYPE A - DOUBLE GARAGE
TH07	TYPE B - TANDEM GARAGE
TH08	TYPE B - TANDEM GARAGE
TH09	TYPE A - DOUBLE GARAGE
TH10	TYPE B - TANDEM GARAGE
TH11	TYPE A - DOUBLE GARAGE
TH12	TYPE A - DOUBLE GARAGE
TH13	TYPE C - CORNER
TH14	TYPE A - DOUBLE GARAGE
TH15	TYPE B - TANDEM GARAGE
TH16	TYPE B - TANDEM GARAGE
TH17	TYPE A - DOUBLE GARAGE
TH18	TYPE A - DOUBLE GARAGE
TH19	TYPE C - CORNER
TH20	TYPE C - CORNER
TH21	TYPE A - DOUBLE GARAGE
TH22	TYPE B - TANDEM GARAGE
TH23	TYPE B - TANDEM GARAGE
TH24	TYPE A - DOUBLE GARAGE
TH25	TYPE A - DOUBLE GARAGE
TH26	TYPE C - CORNER



Areas GFA			Areas P.O.S.		
Townhouse	Area		Townhouse	Area	
TH01	Ground floor	121 m²	TH01	Private open space	55 m²
TH01	First floor	93 m²	TH02	Private open space	40 m²
		214 m²	TH03	Private open space	40 m²
TH02	Ground floor	117 m²	TH04	Private open space	40 m²
TH02	First floor	91 m²	TH05	Private open space	50 m²
		208 m²	TH06	Private open space	52 m²
TH03	Ground floor	117 m²	TH07	Private open space	42 m²
TH03	First floor	91 m²	TH08	Private open space	42 m²
		208 m²	TH09	Private open space	40 m²
TH04	Ground floor	108 m²	TH10	Private open space	42 m²
TH04	First floor	82 m²	TH11	Private open space	42 m²
		190 m²	TH12	Private open space	40 m²
TH05	Ground floor	117 m²	TH13	Private open space	66 m²
TH05	First floor	93 m²	TH14	Private open space	66 m²
		210 m²	TH15	Private open space	48 m²
TH06	Ground floor	117 m²	TH16	Private open space	48 m²
TH06	First floor	91 m²	TH17	Private open space	48 m²
		208 m²	TH18	Private open space	48 m²
TH07	Ground floor	108 m²	TH19	Private open space	66 m²
TH07	First floor	82 m²	TH20	Private open space	66 m²
		190 m²	TH21	Private open space	48 m²
TH08	Ground floor	108 m²	TH22	Private open space	48 m²
TH08	First floor	82 m²	TH23	Private open space	50 m²
		190 m²	TH24	Private open space	50 m²
TH09	Ground floor	117 m²	TH25	Private open space	48 m²
TH09	First floor	91 m²	TH26	Private open space	48 m²
		208 m²	Grand total		1288 m²
TH10	Ground floor	108 m²			
TH10	First floor	82 m²			
		190 m²			
TH11	Ground floor	117 m²			
TH11	First floor	91 m²			
		208 m²			
TH12	Ground floor	117 m²			
TH12	First floor	91 m²			
		208 m²			
TH13	Ground floor	121 m²			
TH13	First floor	93 m²			
		214 m²			
TH14	Ground floor	117 m²			
TH14	First floor	91 m²			
		208 m²			
TH15	Ground floor	108 m²			
TH15	First floor	82 m²			
		190 m²			
TH16	Ground floor	108 m²			
TH16	First floor	82 m²			
		190 m²			
TH17	Ground floor	117 m²			
TH17	First floor	91 m²			
		208 m²			
TH18	Ground floor	117 m²			
TH18	First floor	91 m²			
		208 m²			
TH19	Ground floor	121 m²			
TH19	First floor	93 m²			
		214 m²			
TH20	Ground floor	121 m²			
TH20	First floor	93 m²			
		214 m²			
TH21	Ground floor	117 m²			
TH21	First floor	91 m²			
		208 m²			
TH22	Ground floor	108 m²			
TH22	First floor	82 m²			
		190 m²			
TH23	Ground floor	108 m²			
TH23	First floor	82 m²			
		190 m²			
TH24	Ground floor	117 m²			
TH24	First floor	91 m²			
		208 m²			
TH25	Ground floor	117 m²			
TH25	First floor	91 m²			
		208 m²			
TH26	Ground floor	121 m²			
TH26	First floor	93 m²			
		214 m²			
Grand total		5294 m²			

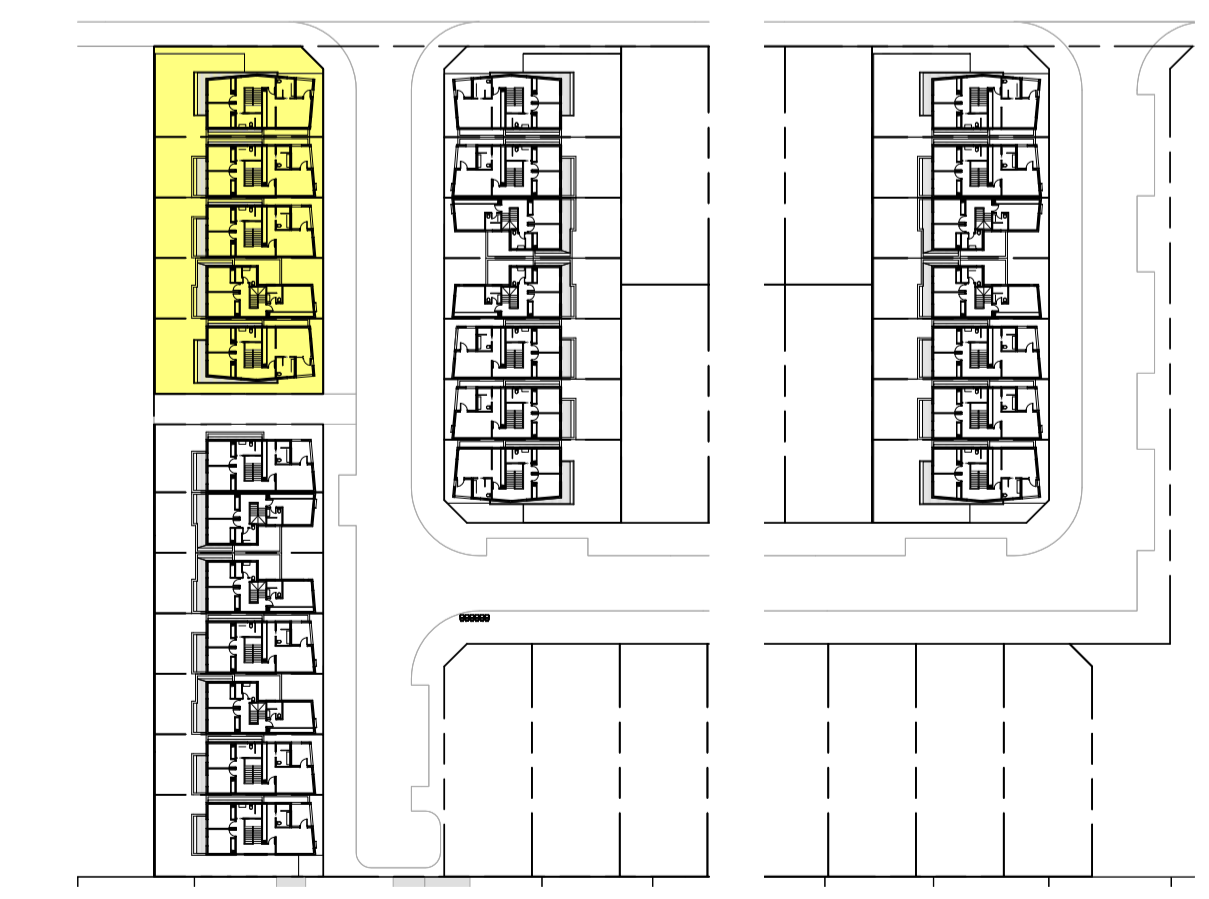
NOTE:
REFER TO TP17-TP20 FOR DETAILS





1 First Floor TH01 - TH05
1 : 100

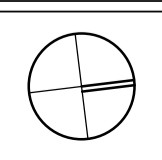
INTERNAL WEST STREET



2 Key plan First Floor TH01-TH05
1000

No.	Description

TITLE: **FIRST FLOOR TH01 - TH05**
PROJECT: Belmont, Geelong



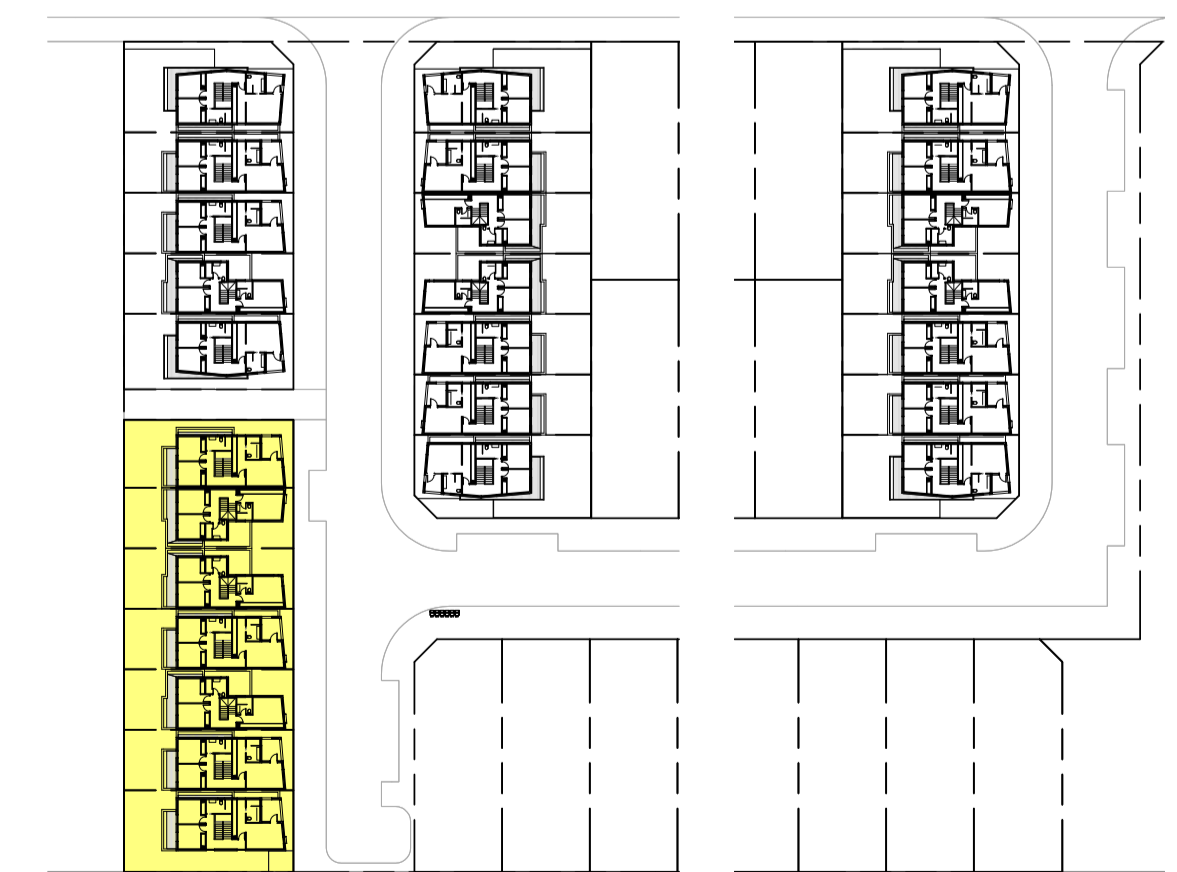
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0 1 2 3 4 5 m

JOB NO. 1503
DATE
DRAWING NO. **TP17** REV. No.



1 First Floor TH06 - TH12
1:100

INTERNAL WEST STREET



2 Key plan First Floor TH06-TH12
1000

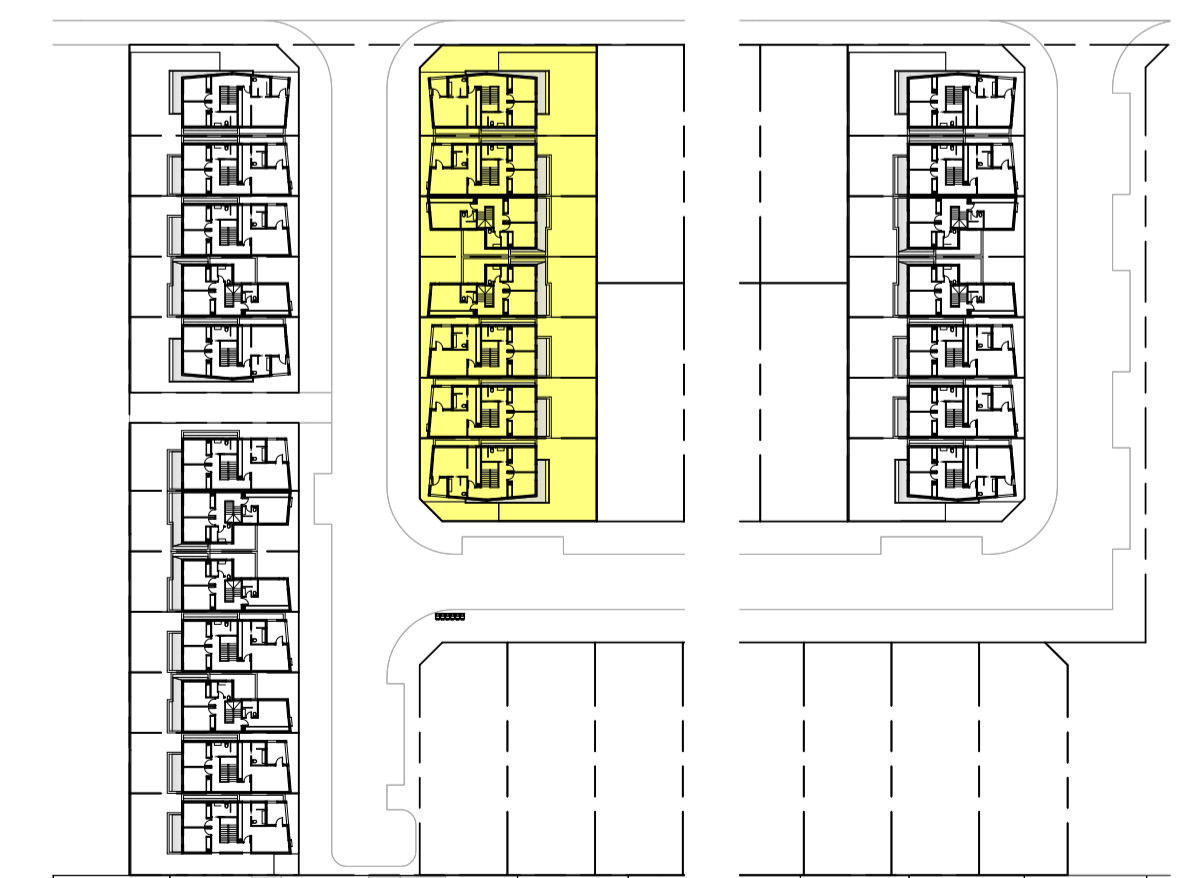
INTERNAL WEST STREET

INTERNAL CENTRAL STREET

HENRY STREET

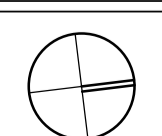


1 First Floor TH13 - TH19
1:100



2 Key plan First Floor TH13-TH19
1000

No.	Description



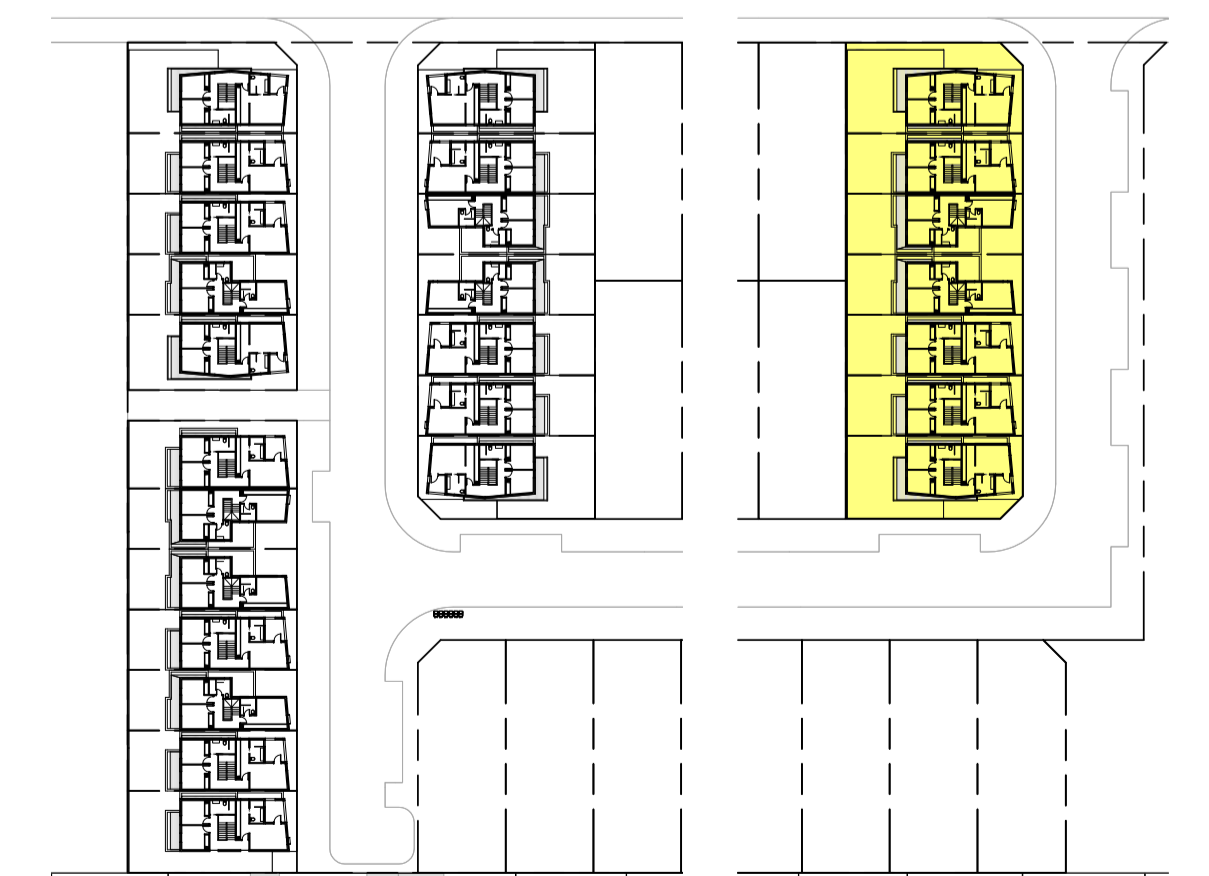
INTERNAL CENTRAL STREET

HENRY STREET



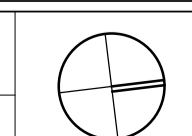
1 First Floor TH20 - TH26
1 : 100

INTERNAL EAST STREET



2 Key plan First Floor TH20-TH26
1 : 1000

No.	Description



DEVELOPMENT SUMMARY	
TOTAL AREA STAGE 1	33,814 SQM
PROPOSED UNITS	
- Type A	12
- Type B	8
- Type C	6
TOTAL	26
TOTAL VISITOR CAR PARKING ON THE STREET	13

TH	TYPE
TH01	TYPE C - CORNER
TH02	TYPE A - DOUBLE GARAGE
TH03	TYPE A - DOUBLE GARAGE
TH04	TYPE B - TANDEM GARAGE
TH05	TYPE C - CORNER
TH06	TYPE A - DOUBLE GARAGE
TH07	TYPE B - TANDEM GARAGE
TH08	TYPE B - TANDEM GARAGE
TH09	TYPE A - DOUBLE GARAGE
TH10	TYPE B - TANDEM GARAGE
TH11	TYPE A - DOUBLE GARAGE
TH12	TYPE A - DOUBLE GARAGE
TH13	TYPE C - CORNER
TH14	TYPE A - DOUBLE GARAGE
TH15	TYPE B - TANDEM GARAGE
TH16	TYPE B - TANDEM GARAGE
TH17	TYPE A - DOUBLE GARAGE
TH18	TYPE A - DOUBLE GARAGE
TH19	TYPE C - CORNER
TH20	TYPE C - CORNER
TH21	TYPE A - DOUBLE GARAGE
TH22	TYPE B - TANDEM GARAGE
TH23	TYPE B - TANDEM GARAGE
TH24	TYPE A - DOUBLE GARAGE
TH25	TYPE A - DOUBLE GARAGE
TH26	TYPE C - CORNER



Areas GFA			Areas P.O.S.		
Townhouse	Area		Townhouse	Area	
TH01	Ground floor	121 m ²	TH01	Private open space	55 m ²
TH01	First floor	93 m ²	TH02	Private open space	40 m ²
		214 m ²	TH03	Private open space	40 m ²
TH02	Ground floor	117 m ²	TH04	Private open space	40 m ²
TH02	First floor	91 m ²	TH05	Private open space	50 m ²
		208 m ²	TH06	Private open space	52 m ²
TH03	Ground floor	117 m ²	TH07	Private open space	42 m ²
TH03	First floor	91 m ²	TH08	Private open space	42 m ²
		208 m ²	TH09	Private open space	40 m ²
TH04	Ground floor	108 m ²	TH10	Private open space	42 m ²
TH04	First floor	82 m ²	TH11	Private open space	42 m ²
		190 m ²	TH12	Private open space	40 m ²
TH05	Ground floor	117 m ²	TH13	Private open space	66 m ²
TH05	First floor	93 m ²	TH14	Private open space	66 m ²
		210 m ²	TH15	Private open space	48 m ²
TH06	Ground floor	117 m ²	TH16	Private open space	48 m ²
TH06	First floor	91 m ²	TH17	Private open space	48 m ²
		208 m ²	TH18	Private open space	48 m ²
TH07	Ground floor	108 m ²	TH19	Private open space	66 m ²
TH07	First floor	82 m ²	TH20	Private open space	66 m ²
		190 m ²	TH21	Private open space	48 m ²
TH08	Ground floor	108 m ²	TH22	Private open space	48 m ²
TH08	First floor	82 m ²	TH23	Private open space	48 m ²
		190 m ²	TH24	Private open space	48 m ²
TH09	Ground floor	117 m ²	TH25	Private open space	48 m ²
TH09	First floor	91 m ²	TH26	Private open space	66 m ²
		208 m ²	Grand total		1288 m ²
TH10	Ground floor	108 m ²			
TH10	First floor	82 m ²			
		190 m ²			
TH11	Ground floor	117 m ²			
TH11	First floor	91 m ²			
		208 m ²			
TH12	Ground floor	117 m ²			
TH12	First floor	91 m ²			
		208 m ²			
TH13	Ground floor	121 m ²			
TH13	First floor	93 m ²			
		214 m ²			
TH14	Ground floor	117 m ²			
TH14	First floor	91 m ²			
		208 m ²			
TH15	Ground floor	108 m ²			
TH15	First floor	82 m ²			
		190 m ²			
TH16	Ground floor	108 m ²			
TH16	First floor	82 m ²			
		190 m ²			
TH17	Ground floor	117 m ²			
TH17	First floor	91 m ²			
		208 m ²			
TH18	Ground floor	117 m ²			
TH18	First floor	91 m ²			
		208 m ²			
TH19	Ground floor	121 m ²			
TH19	First floor	93 m ²			
		214 m ²			
TH20	Ground floor	121 m ²			
TH20	First floor	93 m ²			
		214 m ²			
TH21	Ground floor	117 m ²			
TH21	First floor	91 m ²			
		208 m ²			
TH22	Ground floor	108 m ²			
TH22	First floor	82 m ²			
		190 m ²			
TH23	Ground floor	108 m ²			
TH23	First floor	82 m ²			
		190 m ²			
TH24	Ground floor	117 m ²			
TH24	First floor	91 m ²			
		208 m ²			
TH25	Ground floor	117 m ²			
TH25	First floor	91 m ²			
		208 m ²			
TH26	Ground floor	121 m ²			
TH26	First floor	93 m ²			
		214 m ²			
Grand total		5294 m ²			

