

## **UPDATED TRAFFIC ASSESSMENT**

# PROPOSED SENIORS LIVING DEVELOPMENT 43 OLD SADDLEBACK ROAD KIAMA

PREPARED FOR SADDLEBACK MOUNTAIN ESTATES No. 2 PTY. LTD.
OUR REF: 16-022-5



**NOVEMBER 2019** 

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## **APPENDICES**

- 1. Architectural Plans
- 2. Swept Path Plans

#### 1. INTRODUCTION

#### 1.1 Scope of Assessment

Stanbury Traffic Planning has been commissioned by Weriton Properties Pty. Limited to prepare a traffic assessment to accompany an application for a Site Compatibility Certificate associated with a proposed seniors living development. The development is proposed to comprise 19 detached dwellings within a parcel of land known as 43 Old Saddleback Road, Kiama (Lot 17 DP1210621 formally Lot 100 DP751279, Lot 20 DP1151501 and Lots 1 & 2 DP1165344, herein referred to as 'the subject site').

This aim of this assessment is to investigate and report upon the potential traffic consequences of the development and to recommend appropriate ameliorative measures where required. This report provides the following scope of assessment:

- Section 2 assess the adequacy of the proposed site access arrangements;
- Section 3 provides an assessment of the proposed internal road network arrangements; and
- Section 4 provides an assessment of the operational performance of the surrounding road network and the ability of the road network to accommodate any additional traffic projected to be generated by the development.

The report has been prepared pursuant to State Environmental Planning Policy (Infrastructure) 2007.

#### 1.2 Background

An application was submitted for a Site Compatibility Certificate for a seniors living development within the subject site containing nine dwellings in 2015. A preliminary traffic assessment was prepared by Thompson Stanbury Associates dated the 29<sup>th</sup> of April 2015 in support of this application.

It is understood that following assessment of the abovementioned 2015 application, the Department of Planning & Environment provided advice that the allotments were too large. A development Application (DA No. 10.2017.352.1) was subsequently lodged with Kiama Municipal Council in December 2017 providing for smaller allotments, whereby the residential yield was increased from nine to 21 dwellings. A Traffic Assessment was prepared by this Practice (dated December 2017) in support of the application.

Following preliminary assessment of that application, a letter from Kiama Municipal Council to the applicant) Saddleback Mountain Estates No. 2 Pty. Ltd.) dated 7 February 2018 requested amendments including, but not limited to, the reduction in the number storeys provided for each dwelling from two to one. Further, subsequent concerns with respect to bushfire hazards resulted in the

development yield being reduced from 21 to 19 dwellings. The development application plans were subsequently been amended and are detailed by architectural plans prepared by Coble Stephens Architects, reduced scale copies of a selection of which are attached as **Appendix 1**.

It is however understood that the originally obtained Site Compatibility Certificate has since lapsed, thereby necessitating a further application for a Compatibility Certificate to be submitted. This report forms an Updated Traffic Assessment in support of the amended architectural plans to accompany the required application.

#### 1.3 **Reference Documents**

Reference is made to the following documents throughout this report:

- The preliminary traffic assessment of the 2015 application for nine dwellings within the subject site prepared by Thompson Stanbury Associates;
- State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004;
- Kiama Municipal Council's Development Control Plan 2012 (DCP 2012);
- The Roads & Maritime Services' Guide to Traffic Generating Developments and the supplementary Technical Direction TDT 2013/04a;
- Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections:
- The Australian Department of Health, Housing and Community Services' Australian Model Code for Residential Development (AMCORD);
- The Australian Standard for Parking Facilities Part 1: Off-Street Car Parking (AS28980.1:2004) and Part 2: Off-Street Commercial Vehicle Facilities (AS2890.2:2018); and
- The NSW Rural Fire Service's *Planning for Bushfire Protection*.

## 2. SITE ACCESS ARRANGEMENTS

#### 2.1 Caliope Street Construction

Caliope Street provides a 20m road reservation, extending to the east from Old Saddleback Road at its junction with Greyleigh Drive. It has historically been unformed, however recently has been constructed to form the fourth eastern approach to the intersection of Old Saddleback Road and Greyleigh Drive associated with the provision of access to new dwellings and a subdivision within land to the north. This intersection operates under a major / minor priority controlled arrangement, whereby Old Saddleback Road performs the priority route. Caliope Street primarily provides a pavement width of 6m, accommodating one through lane of traffic in each direction.

The Caliope Street pavement is off-set from the centre of the road reservation (to the south) in order to align as much as is practicable with Greyleigh Drive.

#### 2.2 Safety at Old Saddleback Road / Caliope Street / Greyleigh Drive

The recently constructed layout of the four-way intersection of Old Saddleback Road, Greyleigh Drive and Caliope Street has been approved by Council. However, an assessment of the safety afforded by the intersection, and in particular the fourth eastern (Caliope Street) approach has been undertaken in association with this assessment.

The primary consideration with respect to safety afforded to a public road intersection approach is dependent upon the availability of site distance along the priority road. The Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections specifies desirable sight distance requirements at public road intersections with respect to the speed of traffic within the priority road. Old Saddleback Road is sign posted with a speed limit of 50km/h in the immediate vicinity of the intersection. Austroads provides a Safe Intersection Sight Distance of 90m for a priority roadway speed of 50km/h.

In order to assess the suitability of the sight distance available to / from Caliope Street and vehicles approaching along Old Saddleback Road, an engineering survey of Old Saddleback Road was utilised by others as part of an investigation into a previous application for the subject site as a base to prepare a sight distance diagram which provided the following results:

- The sight distance to the north is greater than 140m; and
- The sight distance to the south is 95m.

This previous assessment has been verified by physical inspections undertaken by staff of Stanbury Traffic Planning as part of this analysis.

The previous assessment, and indeed the inspections undertaken by this Practice indicates that whilst sight distance to the south along Old Saddleback Road is somewhat limited as a result of the variable horizontal and vertical alignment, the available sight distance accords with the Austroads Safe Intersection Sight

Distance requirements. Motorists are accordingly provided with safe conditions with which to undertake access movements to and from Caliope Street at its intersection with Old Saddleback Road and Greyleigh Drive.

#### 2.3 Site Access

A total of 16 of the 19 dwellings are proposed to be serviced by a new crescent shaped private road intersecting twice with Caliope Street approximately 35m and 90m to the east of Old Saddleback Road, accommodating a one-way clockwise traffic movement. This internal roadway is proposed to intersect with Caliope Street under major / minor priority control, with Caliope Street forming the priority route.

The internal road is to provide a 6m wide pavement (including a trafficable 1.5m pedestrian path), providing the same dimensions as that previously approved for the Caliope Street extension servicing the subdivision at No. 15 Caliope Street.

The consistent horizontal and vertical alignment of Caliope Street in conjunction with the low speeds of vehicles within the public road afforded by the proximity of site access roads to the Old Saddleback Road junction is envisaged to result in private road access and egress movements occurring in a safe and efficient manner.

The remaining three dwellings are proposed to provide direct vehicular connection to / from Caliope Street by way of a private access driveway, located approximately 20m, 55m and 180m to the east of Old Saddleback Road, similar in nature to any normal detached residential dwelling. These private access driveways are to provide a width of 6m, allowing for ingress and egress movements to occur between the dwelling and Caliope Street in combination.

## INTERNAL ROAD NETWORK ASSESSMENT

#### 3.1 Internal Private Road Description

The internal private road is proposed to provide a one-way clockwise traffic function, intersecting with Caliope Street twice, approximately 35m and 90m to the east of Old Saddleback Road. The two north-south sections of the internal roadway are proposed to be primarily level whilst the southern east-west roadway connection is proposed to provide a maximum grade of 15% to facilitate a height differential in the order 6m between the two sections of north-south roadway.

The internal road is proposed to service a total of 16 dwellings, each providing a garage capable of accommodating two vehicles, connecting with the internal road via a separate 6m wide access driveways. The dwelling access driveways are to connect with the north-south sections of the internal road in order separate the driveways from the graded east-west section of the internal roadway as much as is practicable, thereby maximising the level of safety afforded to each driveway.

### 3.2 Assessment of Internal Private Road Pavement Design

The internal private road is proposed to provide a pavement width of 6m. This roadway width is to include a 1.5m trafficable pedestrian path provided at the same level as the roadway but providing a different pavement finish to highlight the potential for pedestrian movements. It is noted that a pavement width of 6m is consistent with that recently approved and constructed to service the 16 lot Torrens title subdivision to the north-east and accordingly, is considered to be satisfactory.

Notwithstanding the above, in order to undertake an assessment of the suitability of the proposed internal private road design, reference is made to the Australian Department of Health, Housing and Community Services' Australian Model Code for Residential Development (AMCORD). AMCORD provides 'Design Elements' for physical infrastructure as a guideline for residential development. Design Element 2.0 of AMCORD 'Street Design and On-Street Car Parking' provides a table indicating the characteristics of street types. This table indicates that a 6m wide pavement is readily capable of accommodating an access street function (servicing up to 1,000 vehicles per day). It should be noted here that the 6m wide pavement width is to accommodate two directional traffic (vehicle, pedestrian and bicycle) movements in conjunction with kerb side parking.

The proposed internal private road is to service 16 seniors living dwellings, which according to the Roads & Maritime Services' *TDT 2013/04a Guide to Traffic Generating Developments: Updated Traffic Surveys* are projected to generate in the order of 34 daily vehicle trips. Accordingly, the proposed internal road pavement design is anticipated to provide motorists with a good level of safety, efficiency and residential amenity, being significantly lower than the previously projected indicative maximum daily volume of 1,000 vehicles specified by AMCORD.

The consistency of the proposed internal private road with the approved design of the Caliope Street extension (providing a pavement width of 6m) is such that it is expected to be suitably capable of accommodating service vehicle movements associated with garbage collection, mini-bus, removalist and fire appliance vehicles, the largest of which is Council's refuse collection vehicle providing a length of 9.4m.

The previously presented maximum internal roadway grade of 15% is compliant with the maximum grade specification of 15% provided by the NSW Rural Fire Service' Planning for Bushfire Protection for fire appliances. Further, a desktop ground clearance assessment has been undertaken, indicating that Medium Rigid Vehicles (MRVs) in accordance with AS2890.2:2018 are capable of negotiating the proposed grade profile without scraping. In consideration of this and the above discussion, the proposed internal private road design is considered to be capable of accommodating the likely servicing requirements in a safe and efficient manner.

#### 3.3 Assessment of Private Dwelling Access Driveway

The three dwellings which are not to be serviced by the internal private road are proposed to provide direct connectivity to / from Caliope Street by virtue of separate 6m wide access driveways. These driveways are to connect with Caliope Street approximately 20m, 55m and 180m to the east of Old Saddleback Road. Similar to those dwellings serviced by the internal private road, the dwellings directly serviced by the Caliope Street driveways are to service garages capable of accommodating two vehicles.

The 6m width of the driveways suitably accord with the minimum requirements specified by the Australian Standard for Parking Facilities Part 1: Off-Street Car Parking (AS2890.1-2004), based on the number of vehicles serviced and the residential access function of Caliope Street.

The positioning of the driveways suitably accord with the minimum separation from public road intersections specified by AS2890.1:2004. Further, the consistent vertical and horizontal alignment of Caliope Street on approach and departure from the private access driveways location result in adequate sight distance being provided. In consideration of this and the above discussion, the proposed access driveways connecting directly with Caliope Street are projected to facilitate safe and efficient dwelling access.

#### 3.4 Parking Provision and Arrangements

It has previously been presented that each dwelling is proposed to be serviced by a double vehicle garage, capable of accommodating two passenger vehicles at any one time. Such a parking provision is suitably compliant with State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004, which specifies a minimum parking provision of 0.5 spaces per bedroom.

The double garages and access thereto have been designed to accord with the relevant AS2890.1:2004 and AS2890.6:2009 requirements, providing the following minimum dimensions:

- Internal garage width = 6m;
- Internal garage length = 6m;
- Garage door opening width = 5.2m;
- Internal clearance within garage = 2.55m;
- Garage door opening clearance = 2.35m;
- Maximum grade of driveway connecting garage to public or private roadway
   1:4;
- Maximum change in grade of driveway = 1:8; and
- Minimum length of transitional grade = 2m.

Further to the above resident parking provision, a total of 11 visitor parking spaces are proposed to be provided within an indented arrangement at 90 degrees to both Caliope Street and the internal access road. Such a visitor parking provision accords with locally sensitive parking requirements provided within Chapter 9 of DCP 2012, which requires a minimum of one space per two dwellings.

The visitor parking spaces and access thereto have been designed to accord with the relevant AS2890.1:2004 and AS2890.6:2009, providing the following minimum dimensions:

- Standard parking space width = 2.6m;
- Disabled parking space width = 2.4m (plus adjoining 2.4m wide shared area);
- Parking space length = 5.6m;
- Parking aisle = 6m; and
- Maximum grade through parking space = 1:40.

#### 3.5 Site Servicing

The development is expected to be serviced by refuse collection vehicles, removalist and fire appliance vehicles, the largest of which is Council's refuse collection vehicle providing a length of 9.4m, advised to by Council's Waste Management Officer to provide a turning diameter of 18.1m.

Refuse bins stored within the dwellings are to be wheeled to the left side of the internal access road for collection as required. The swept path plans accompanying this report have been prepared utilising a 9.4m long waste collection vehicle sourced from the Autoturn program, a copy of which is attached as **Appendix 1** for reference. This vehicle provides more onerous turning requirements than Council's refuse collection vehicle (providing a turning

diameter of 19.6m) however has been retained in order to represent a worst case scenario.

The subject site is also proposed to be serviced by a "hail and ride" mini bus service. This service is proposed to service the proposed internal private access road on a daily basis, with designated stops being situated adjacent to proposed dwelling Nos. 3 and 16 in areas that are approximately level and will facilitate wheelchair accessible paths of travel. Notwithstanding this, the mini-bus is also proposed to provide a door-to-door service for future residents when / if necessary. The mini bus is to provide length and manoeuvring specifications similar manner to Small Rigid Vehicles, thereby being smaller and manoeuvring more efficiently than the previously assessed refuse collection vehicle.

## 4. EXTERNAL ROAD NETWORK ASSESSMENT

### 4.1 Surrounding Road Function and Hierarchy

Old Saddleback Road performs a rural / residential access function under the care and control of Kiama Municipal Council. It provides a north-south connection between Bland Street in the north and Saddleback Mountain Road in the south.

To the north of the Greyleigh Drive and Caliope Street, Old Saddleback Road provides an urban residential access function forming a 9m wide pavement providing one through lane of traffic in each direction in conjunction with parallel parking along both kerb alignments. Traffic flow is governed by a sign posted 50km/h urban speed limit.

To the south of the Greyleigh Drive and Caliope Street, Old Saddleback Road provides a rural residential access function forming a variable pavement of between 5.5m – 7.0m with unsealed shoulders. One lane of traffic flow is provided in each direction occasionally separated by a double barrier centre line. Traffic flow is governed by a sign posted 60km/h speed limit.

Adjoining the subject site, Old Saddleback Road forms a cross intersection with Greyleigh Drive and Caliope Street operating under major / minor priority control with Old Saddleback Road forming the priority route. Feature brick paving is provided within the junction in order to highlight the intersection and the transition from a rural function to a more urbanised area.

Greyleigh Drive performs a lower order residential access function providing a vehicular connection between Old Saddleback Road and Bland Street in conjunction with intersecting with other lower order residential access streets. Greyleigh Drive provides an approximate 6m wide pavement providing one through lane of traffic in conjunction with parallel parking along both kerb alignments.

Caliope Street has recently has been constructed to provide a variable pavement width of between 3.5m and 7.0m, forming the fourth eastern approach to the intersection of Old Saddleback Road and Greyleigh Drive associated with the provision of access to four constructed dwellings within a parcel of land to the north. It has however been previously been presented that approval was recently granted by Council for the extension of Caliope Street to the east to form a 6m wide pavement associated with a Torrens title subdivision of land to the northeast of the site.

On a broader scale, the immediately surrounding local road network connects with the Kiama town centre via Bland Street to the north and Saddleback Mountain Road to the south. Bland Street and Saddleback Mountain Road provide an underpass and an overpass across Princes Highway respectively. Bland Street links with the town centre via Shoalhaven Street whilst Saddleback Mountain Road provides connectivity to the town centre via Manning Street.

#### 4.2 Traffic Volumes and Levels of Service

Weekday evening peak hour traffic volume surveys were undertaken at the intersection of Old Saddleback Road, Greyleigh Drive and Caliope Street in 2016 with respect to the Site Compatibility Certificate application in order to ascertain an accurate indication of existing traffic demands. Whilst these surveys are now two years old, recent check surveys indicate that the result remain valid. The following provides a summary of the survey results:

- Old Saddleback Road accommodates peak hour directional traffic demands of approximately 20 – 40 vehicles; and
- Greyleigh Drive and Caliope Street accommodates peak hour directional traffic demands of less than 20 vehicles.

Reference is made to the Roads & Maritime Services' *Guide to Traffic Generating Developments* in order to undertake an assessment of the operational performance of immediately adjoining road network. This publication indicates that a two lane two way carriageway accommodating peak hour directional traffic volumes less than 200 vehicles per hour provides a level of service 'A'. Such a level service indicates free flow where drivers are virtually unaffected by others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is high, and the general level of comfort and convenience provided is excellent.

It has accordingly been observed that motorists are provided with an excellent level of service and are able to undertake turning movements at intersections (and indeed, private allotment access driveways) with minimal delay.

#### 4.3 Development Traffic Generation

The subject seniors living development is projected to generate in the order of 40 daily and 8 peak hour vehicle trips to and from the site, based on average traffic generation rates specified by the Roads & Maritime Services' *TDT 2013/04a Guide to Traffic Generating Developments: Updated Traffic Surveys Guide to Traffic Generating Developments.* 

#### 4.4 External Impacts

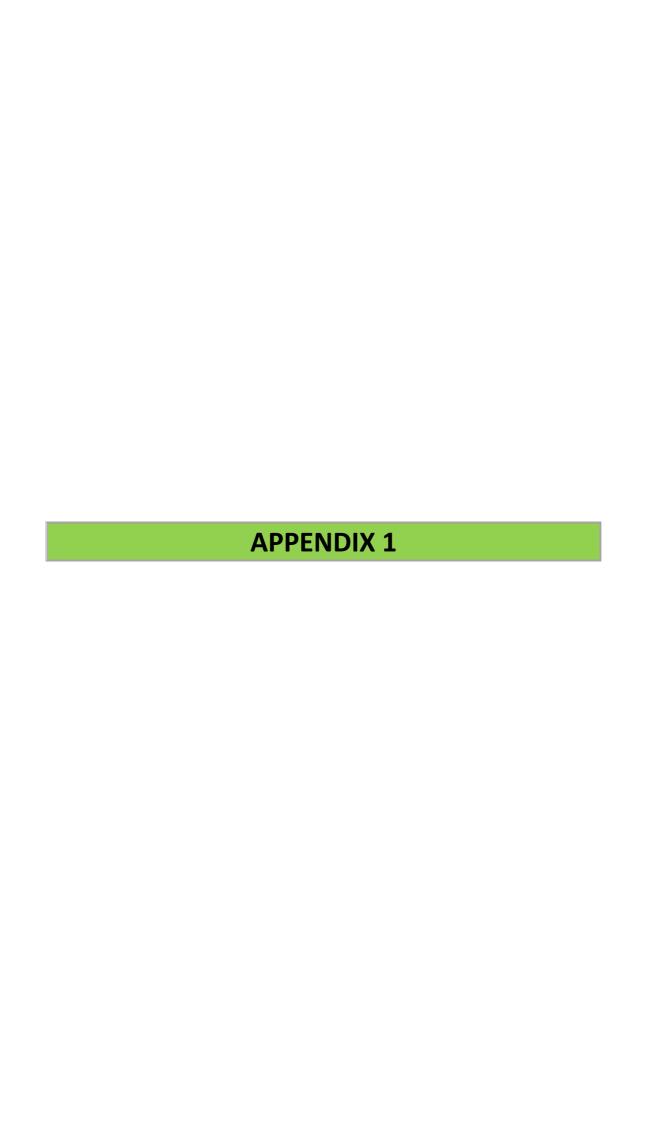
The surrounding road network has been assessed to provide a good level of service with spare capacity. The limited extent of traffic projected to be generated by the subject proposal (8 peak hour trips or approximately one vehicle movement every 7 to 8 minutes), is therefore not projected to have any unreasonable impacts on the safety and efficiency afforded by the surrounding road network.

## 5. CONCLUSION

This report provides an updated traffic assessment of a proposed seniors living development at 43 Old Saddleback Road, Kiama. The following provides a summary of the findings of this assessment:

- The proposed site access arrangements are projected to result in motorists being capable of entering and exiting the subject site in a safe and efficient manner and are capable of accommodating the largest vehicles expected to service the site;
- The internal circulation arrangements are satisfactory to accommodate the scale and nature of the proposed seniors living development, including servicing by Council's 9.4m long refuse collection vehicle;
- The surrounding road network currently provides motorists with a good level of service;
- The subject development has been projected to generate up to 8 peak hour vehicle trips to and from the subject site; and
- The surrounding road network is capable of accommodating the limited additional traffic projected to be generated by the subject proposal.

It is considered, based on the contents of this preliminary report and the conclusions contained herein, there are no traffic related issues that should prevent approval of the Application.





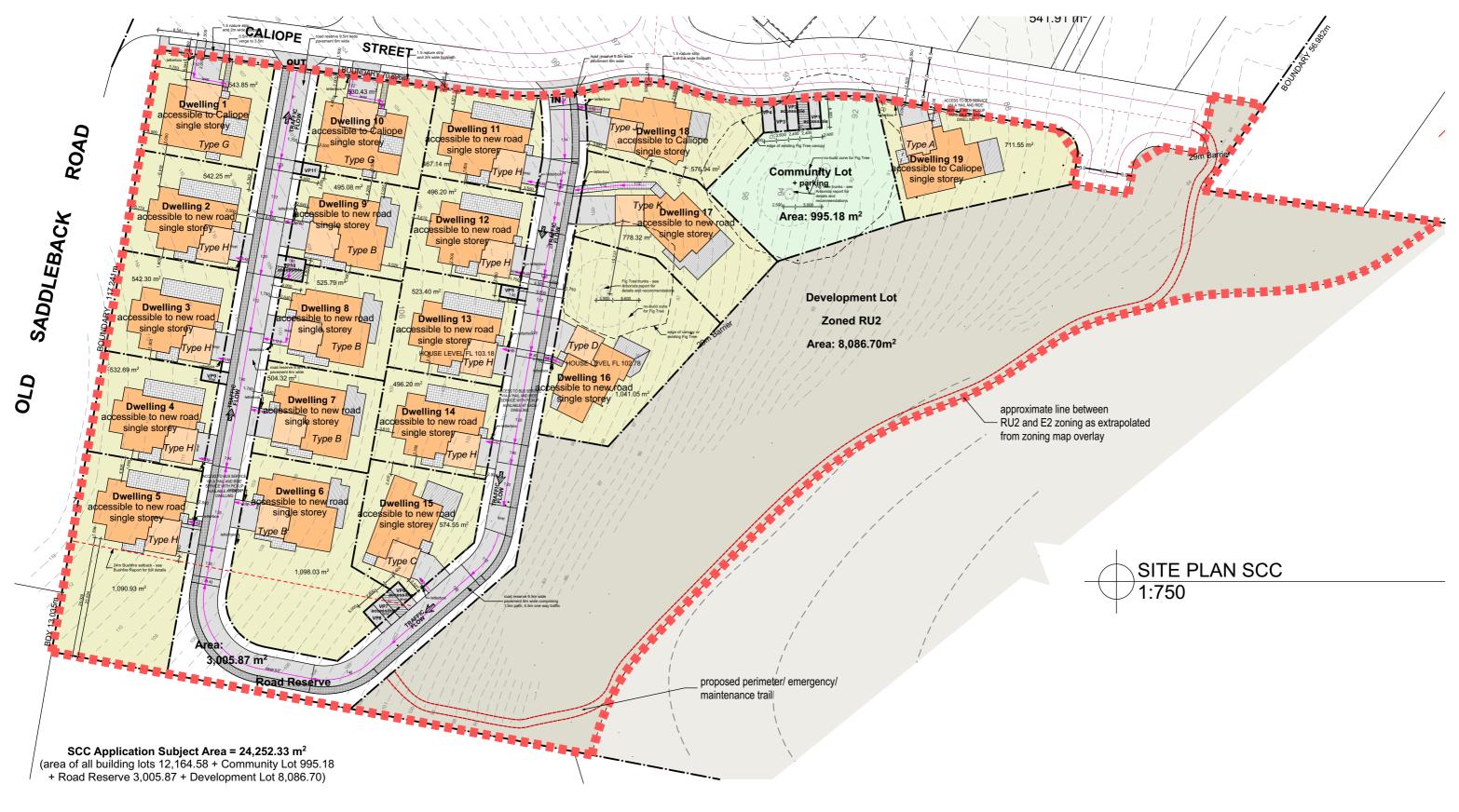
# PROPOSED SENIORS LIVING ESTATE

LOT 17 DP 1210621 (Formerly Part Lot 100 DP 751279), 43 Old Saddleback Road, KIAMA NSW

for WERITON PROPERTIES

SCC SITE LAYOUT - OVERALL





# PROPOSED SENIORS LIVING ESTATE

LOT 17 DP 1210621 (Formerly Part Lot 100 DP 751279), 43 Old Saddleback Road, KIAMA NSW

for WERITON PROPERTIES

# SITE LAYOUT - DETAIL





## **PROPOSED SENIORS** LIVING ESTATE

LOT 17 DP 1210621 (Formerly Part Lot 100 DP 751279), 43 Old Saddleback Road, KIAMA NSW

SITE PLAN - DETAIL HOUSES

for WERITON PROPERTIES



drew Coble Architects Registration 6922 Alison Stephens Architects Registration 6678

**LEGEND** 

magnetic north solar north

11-11-19 SCC-03



## **PROPOSED SENIORS LIVING ESTATE**

LOT 17 DP 1210621 (Formerly Part Lot 100 DP 751279), 43 Old Saddleback Road, KIAMA NSW

<u>SITE PLAN - DETAIL</u> <u>HOUSES 4, 5, 6, 7, 14, 15</u>

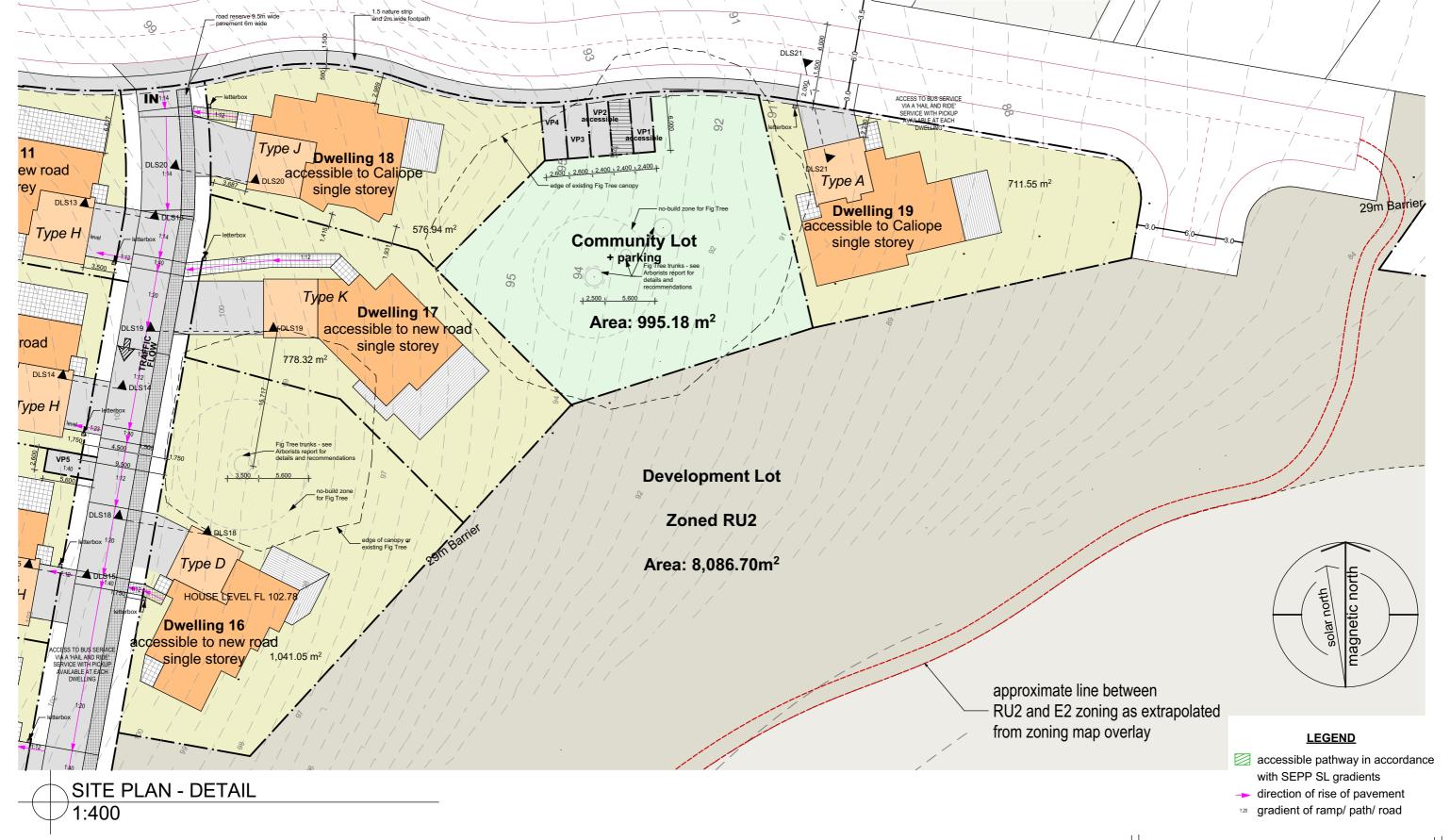
for WERITON PROPERTIES

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**LEGEND** 

nagnetic nort solar north



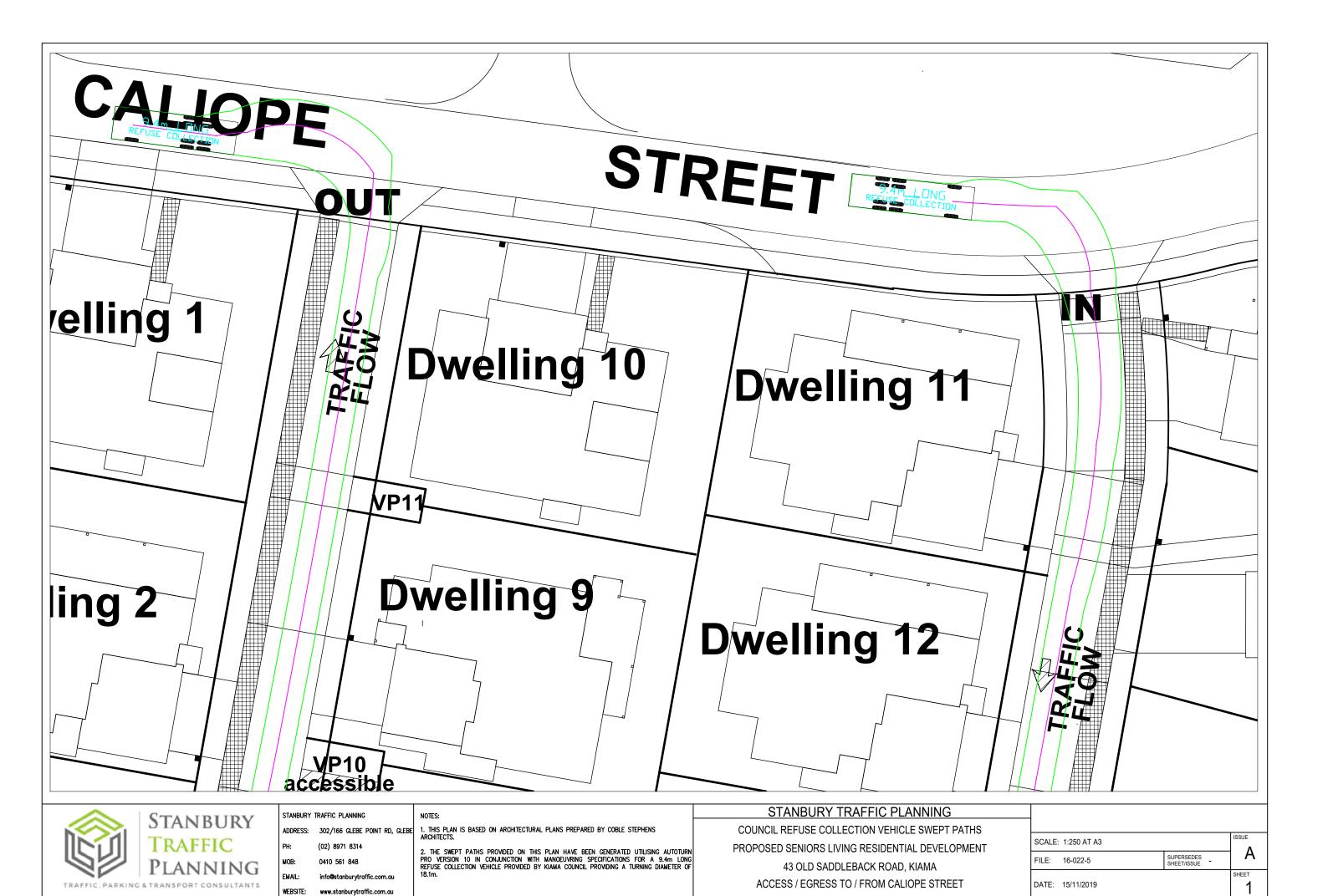
# PROPOSED SENIORS LIVING ESTATE

LOT 17 DP 1210621 (Formerly Part Lot 100 DP 751279), 43 Old Saddleback Road, KIAMA NSW <u>SITE PLAN - DETAIL</u> <u>HOUSES 16, 17, 18 & 19</u>

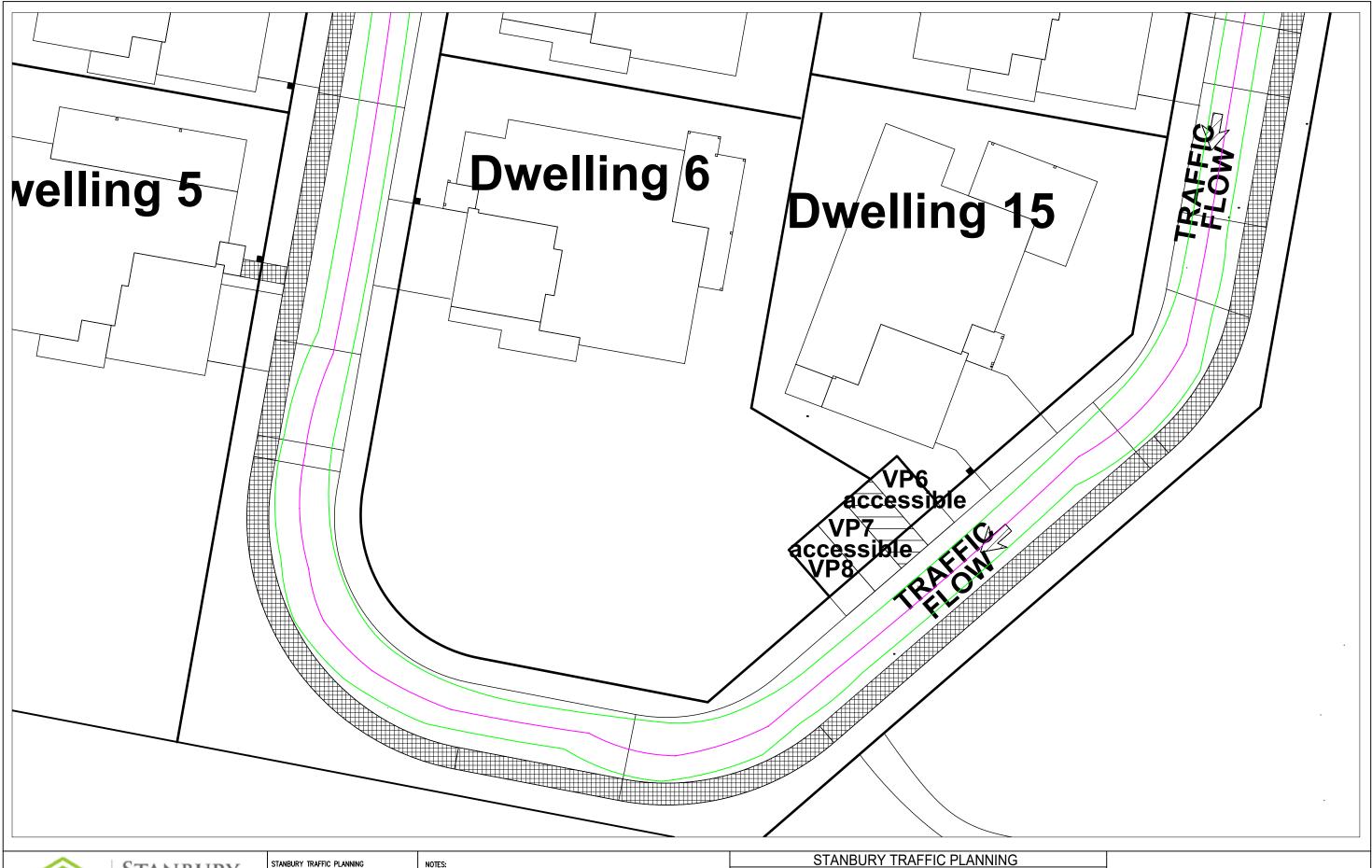
for WERITON PROPERTIES













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1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY COBLE STEPHENS ARCHITECTS.

2. THE SWEPT PATHS PROVIDED ON THIS PLAN HAVE BEEN GENERATED UTILISING AUTOTURN PRO VERSION 10 IN CONJUNCTION WITH MANOEUVRING SPECIFICATIONS FOR A 9.4m LONG REFUSE COLLECTION VEHICLE PROVIDED BY KIAMA COUNCIL PROVIDING A TURNING DIAMETER OF 18.1m.

COUNCIL REFUSE COLLECTION VEHICLE SWEPT PATHS PROPOSED SENIORS LIVING RESIDENTIAL DEVELOPMENT 43 OLD SADDLEBACK ROAD, KIAMA SOUTHERN PORTION OF SITE

SCALE: 1:250 AT A3			ISSUE	
FILE:	16-022-5	SUPERSEDES SHEET/ISSUE -	A	
DATE:	15/11/2019		SHEET 3	