

TRAFFIC AND PARKING IMPACT ASSESSMENT

OF THE PROPOSED RETIREMENT VILLAGE

AT 328A & 330-334 GALSTON ROAD, GALSTON NSW



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| Development Type: | Retirement Village |
|---------------------|--|
| Site Address: | 328a & 330-334 Galston Road, Galston NSW |
| Prepared for: | Planik |
| Document reference: | 18047.01FA |

| Status | Issue | Prepared By | Checked By | Date |
|--------|-------|-------------|------------|--------------------------------|
| Draft | Α | АТ | ММ | 27 th February 2018 |
| Final | Α | AT | ММ | 1 st March 2018 |

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1 INTRODUCTION

M^cLaren Traffic Engineering (MTE) was commissioned by *Planik* to provide a Traffic and Parking Impact Assessment of the proposed Retirement Village of Lot 21 and Lot 22 DP 851940 with address 328a & 330-334 Galston Road, Galston NSW as depicted in **Annexure A** for reference.

1.1 Description and Scale of Development

The proposed development, includes the construction of infrastructure and other works required to facilitate the proposed senior living development consisting of **95 dwellings**. The proposed development has a total area of 39,373m² and will have the following features:

- The development of the majority of Lot 21 and Lot 22 DP 851940 into 95 retirement dwelling;
- The construction of two apartment buildings consisting of 16, two-bedroom apartments along with a Leisure centre for residents;
- The construction of 77 new retirement villas, and the conversion of one existing dwelling into 2 separate villas;
- A construction of a temporary Tennis Court and Bowling Green for residents;
- The construction of new internal roads to facilitate access to the retirement villa and units;

All vehicular access to the site will be from the proposed two-way driveway off Galston Road.

1.2 State Environmental Planning Policy (Infrastructure) 2007

The proposed development does qualify as a traffic generating development with relevant size and/or capacity under Clause 104 of the *SEPP (Infrastructure) 2007*, as the proposal is for 50 or more allotments with proposed access to a classified STATE road (Galston Road). Accordingly, formal referral to the Roads and Maritime Services (RMS) is required.

Preliminary RMS advice has been received on the development and the RMS Response letter is attached in **Annexure B**.



1.3 Site Description

1.3.1 Existing Conditions

The subject site is situated at 328a & 330-334 Galston Road, Galston NSW 2159 and is legally identified as Lot 21 and Lot 22 in DP 851940. The site can be classified as two existing rural residential properties, with a small dam located on site. Vehicular access to the site is currently via two driveways, one for each property, to Galston Road.

The site is generally surrounded by residential dwellings to the west and rural properties in all other directions. Galston's local retail centre is located to the west of the site. The site has road frontage to Galston Road to the south.

1.3.2 <u>Zoning</u>

The subject site is currently zoned RU4 – Primary Production Small Lots under the *Hornsby Local Environment Plan 2013*. The southern edge of the site along Galston Road is zoned as SP2 – Infrastructure (Classified Road) and has been allocated as land reserved for acquisition in the future for expected expansions of Galston Road.



1.4 Site Context

The site location is shown in an aerial photo and a map in Figure 1 & Figure 2 below.



Site Location





Site Location





2 EXISTING TRAFFIC AND PARKING CONDITIONS

2.1 Road Hierarchy

The existing road network within close proximity to the site has the following characteristics:

- 2.1.1 Galston Road
- Classified STATE Road (Road No. 161);
- Approximately 10m wide sealed carriageway facilitating two lanes (one in each direction) and unsealed shoulders on both sides of the road (i.e. no formal kerb);
- Signposted 60km/h carriageway;
- No formal kerbside parking although informal parking within grassed shoulder on both sides of the road may occur;
- Heavy Vehicle 'Length Checking Point', for Galston Gorge located on the northern side of Galston Road, directly in front of the site.

2.1.2 Arcadia Road

- Classified REGIONAL Road (Road No. 332);
- Approximately 10m wide sealed carriageway facilitating two lanes of traffic (one in each direction) and formal kerbside parking on both sides of the road to the north of the intersection of Galston Road / Belbowrie Close / Arcadia Road.
- Some parking restrictions are in place along Arcadia Road, including;
 - A 'Loading Zone' between 9am 4pm, Mon Fri', with 'No Stopping' at any other time on the western side of Arcadia Road;
 - A '*No Parking*' zone along eastern side of Arcadia Road;
 - Unrestricted parking areas further north along Arcadia Road on both sealed and unsealed shoulders along both sides of the road (i.e. no formal kerb);
- Signposted 60km/h carriageway;

2.1.3 <u>Belbowrie Close</u>

- Unclassified LOCAL Road;
- Approximately 6m wide sealed carriageway facilitating two-way passing.
- No sign-posted speed limit Local road 50km/h speed limit applies;
- No formal kerbside parking provided on either sides of the road, although informal 90-degree angled parking may occur within the road reserve on both sides of the



road near the intersection of Galston Road / Belbowrie Close / Arcadia Road and informal parking within the road reserve may occur further to the south.

2.2 Existing Traffic Management

• Roundabout controlled intersection of Galston Road / Arcadia Street / Belbowrie Close.

2.3 Future Road and Infrastructure Upgrades

From *Hornsby Shire Councils Development Application Tracker* and website, it appears that there are no future planned road changes which will affect existing traffic conditions within the vicinity of the subject site.

The Roads and Maritime Service (RMS) is currently undertaking improvements on Galston Road, from Hornsby Heights to Galston. The majority of these upgrades are focused around the Galston Gorge section of Galston Road, and as such there are no planned changes which will affect the existing traffic conditions within the vicinity of the site.

While a road widening corridor runs through the southern edge of the site, along Galston Road, there are currently no plans to widen Galston Road.

2.4 Public Transport

The subject site has access to existing bus route 638 and 637 provided by Hills. The nearest bus stop is located along Galston Road at Arcadia Road (Stop ID 215915), located approximately 300m from the entrance of the site to the west. These bus routes provide access to Castle Hill including Castle Towers Shopping Centre, Dural, Glenorie, Arcadia and Berrilee. The site has no direct access to the Sydney Trains Network. The sites location subject to the surrounding public transport infrastructure is shown in **Figure 3** below.







FIGURE 3: BUS NETWORK MAP



3 PARKING ASSESSMENT

3.1 Council Parking Requirement

Reference is made to the *Hornsby Development Control Plan 2013 – Part 1 – General – Table 1C.2.1(d)* which outlines the minimum car parking requirements for senior housing developments:

<u>Seniors Housing - Minimum</u> Per SEPP (Housing for Seniors or People with a Disability) 2004

As shown above, the minimum number of car parking spaces required for the proposed development are outlined in the SEPP Housing for Seniors or People with a Disability 2004 (SEPP). The car parking requirements outlined within the SEPP are outlined below.

3.2 State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004

Reference is made to Clause 50 of the SEPP (Housing for Seniors or people with a Disability) 2004 – standards that cannot be used to refuse development consent for self-contained dwellings which states the following in relation to car parking provision:

"parking: if at least the following is provided:

- (i) 0.5 car spaces for each bedroom where the development application is made by a person other than a social housing provider, or"
- (ii) 1 car space for each 5 dwellings where the development application is made by, or is made by a person jointly with, a social housing provider.

In addition to the above car parking requirements the following are relevant to note in relation to the ongoing operation of the site:

Expected staffing requirements for the site are as follow:

- 2 x full time ground staff;
- 1 x contracted ground staff during "growing seasons";
- 1 x Hairdresser (once per week);
- 1 x Beautician (once per week);
- 1 x Doctor (once per week);
- 1 x Podiatrist (once per fortnight);
- 1 x Dentist, attending in a 'dental van' (once per month).



Assuming the worst-case scenario in which all employees (full time staff and contractors) are on site, the parking demand would require eight (**8**) parking spaces to be provided.

The resulting parking requirements are summarised in **Table 1** below.

| Туре | Sca | lle | Rate | Spaces Required |
|---------------------|----------------|-----|--------------------|--------------------|
| Dwelling Houses | 1-bedroom | 0 | | 0 |
| | 2-bedroom | 41 | | 41 |
| | 3-bedroom | 36 | 0.5 per bedroom | 54 |
| | 4-bedroom | 0 | bouloom | 0 |
| | 5-bedroom | 2 | | 5 |
| Residential Flat | 1-bedroom | 0 | 0.5 per | 16 |
| Building | 2-bedroom | 16 | bedroom | 10 |
| Subtotal | - | 95 | - | 116 |
| Staff | 8 employees | - | 1 per employee | 8 |
| Total | - | - | - | 124 |

TABLE 1: PARKING REQUIREMENTS

As shown above, the development requires a total of **124** car parking spaces. The site plan indicates a total of **119** car parking spaces for senior villa dwellings, **21** spaces within the residential flat buildings and an additional **22** car parking spaces separate from all buildings, provided as 90 degree angled parking within the subdivision. This results in a parking provision of **162** car parking spaces, giving a numeric surplus of **38** spaces based on the SEPP requirement and requirements for staff.

It is envisaged that all residential parking will be contained wholly within each dwelling and will be detailed further during the development application stage of each dwelling.

3.3 Bicycle & Motorcycle parking Requirements

Council's DCP does not outline any bicycle car parking requirement for low density residential dwellings. As such it is envisaged that if residents require bicycle parking this can be stored within each dwelling / garage. Council requires medium and high density residential dwelling to provide 1 bicycle space for each 5 unit for residents and 1 space per 10 units for visitors. Based upon the 16 residential flat buildings, this would result in three (3) residential bicycle spaces and two (2) visitor bicycle spaces.



Council's outlines the following motorcycle parking requirements for developments outside Town Centres:

x. In all buildings that provide onsite parking

- 1 space suitable for motor cycles should be provided per 50 car parking spaces, or part thereof.
- Motorcycle parking should be available as part of the common property for use by residents and visitors.

Based upon the proposed 16-unit residential flat building the site requires the provision of one (1) motorcycle parking space. The development provides a surplus of **14** car parking spaces (22 less 8) separate from all buildings, which can accommodate for the one (1) motorcycle parking space required.

3.4 Servicing & Loading

Council's DCP specifies a range of requirements for servicing and loading for developments, and outlines the following measures applicable to this site:

Service Vehicles

m. On site pick up and manoeuvring areas for waste collection vehicles should be provided in accordance with the waste collection provisions at Section 1C.2.3 of the DCP.

General waste collection will occur on site at 4 designated waste collection points throughout the site and in front of the residential flat building and leisure centre. The general waste collection will be conducted by a 11.5m length Heavy Rigid Vehicle and will occur on a weekly basis. Swept path tests have been conducted of the circulation ability of an 11.5m HRV, and have been deemed successful, refer to **Annexure C** for swept path testing.

Sewage will be removed via a pump out system, which will require a 19m length Articulated Vehicle (AV) to access the pump out point and to manoeuvre safely through the site. It is recommended that the proposed access from the internal roundabout and the sewage loading area be chevron linemarked to ensure the safe operation of the internal roundabout. Swept path analysis has been conducted and deemed successful, refer to **Annexure C** for reference.

3.5 Disabled Parking

The Council DCP does not specifically outline any disabled parking for seniors living developments, though it is expected that the development will meet the minimum requirement for Adaptable Housing as per the *Hornsby Council DCP. Part 3, Section 3.2.10* of the DCP outlines that 10% of dwellings should be Adaptable Housing, and as such each adaptable dwelling should be provided with a minimum of one **(1)** disabled car space designed in accordance with the requirements outlined in *AS 4299-1995 – Adaptable Housing*.



The compliance of the individual dwelling houses to these standards will be conducted in their individual DA submissions.

The application of the Adaptable Housing requirement for the residential flat building component of this development, requires that there is a minimum of two (2) adaptable dwellings provided. As such a minimum of two (2) disabled car spaces are required and are adequately provided for within the residential flat building carpark. The site provides a total of four (4) car parking spaces, giving a numeric surplus of two (2) spaces based on requirements for adaptable housing within the apartment component.

3.6 Driveway Locations and Sight Distances

The proposed access to the site is via a two-way driveway from Galston Road. This intersection will operate as a Priority Give-Way intersection. Galston Road has an average daily traffic volume of approximately 6,500 vehicles (both directions) and a 60km/h speed restriction, which requires a minimum sight distance of 65m as per AS2890.1 *Figure 3.2.*

The proposed driveway location provides sight distances far in excess of 65m, with vision for approximately 190m to the east and 200m to the west as shown in **Annexure D** for reference. The proposed driveway locations, therefore, provide adequate sight distances for exiting drivers.

3.7 Car Park Design & Compliance

It is envisaged that the design of the car parking and access facilities for the residential flat building and senior living dwellings will be assessed during the development applications stage for each dwelling and have not been assessed as part of this report.



4 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

4.1 Traffic Generation

The estimated traffic generation level for the residential subdivision for 95 proposed dwellings is based upon the RMS *Guide to Traffic Generating Developments October 2002* and more recent supplements. The RMS publicised updated housing for seniors traffic generation rates within the *Technical Direction TDT 2013/04a*, and will be applied to the subdivision development. The expected traffic generation is summarised in **Table 2** below.

| Development Type | Scale | Peak Period | Rate | Peak Traffic Generation | Trip Assignment ⁽¹⁾ |
|------------------|-------|-------------------|----------|----------------------------|--------------------------------|
| Dualling Llausse | 05 | AM ⁽²⁾ | 0.4 per | 38 | 8 IN; 30 OUT |
| Dwelling Houses | 95 | PM | dwelling | 38 | 30 IN; 8 OUT |

TABLE 2: EVENING PEAK HOUR TRAFFIC GENERATION

Note (1): Assumes 20% inbound & 80% outbound during AM peak (shown above). Vice versa for PM. (2) AM morning peak hour does not generally coincide with the network peak hour

As shown above, the traffic generated by the site equates to **38** vehicles trips in both the AM (8 IN; 30 OUT) and PM (30 IN; 8 OUT) peak periods respectively. As stated with the RMS surveys the traffic generation for senior living dwellings does not generally coincide with the peak AM period.

This level of traffic will have no adverse effect on any nearby intersections and can be readily accommodated within the existing road network with minimal impact in terms of traffic flow efficiency, residential amenity and road safety considerations.



5 ROAD DESIGN

5.1 Design Standards

The proposed retirement village includes the provision of private road infrastructure for vehicles and pedestrians. Reference is made to Council DCP *Part 6 – Subdivisions of the Hornsby Development Control Plan 2011* which outlines the following road and access requirements for Subdivisions:

6.5 Road Design

Prescriptive Measures

a. The design of public roads should comply with Council's Civil Design and Construction Specification.

The Hornsby Shire Council outlines specifics for road design within the document *Development Design Specification 0041 – Geometric Road Layout.* **Figure 4** below shows Council's design requirements for various types of roads.

| Road Type | Carriageway Width (m) ⁽¹⁾ | Parking Provisions Within Road Reserve | Kerbing | Footpath Requirement (5), (9) | Bicycle path Requirement (10) | Road Reserve Width | Comments |
|-------------------------------|---|---|-----------------------------|---|---|--------------------------|---|
| Access Street | Single Lane: ⁽²⁾ 3.5 | 1 verge space per 2 allotments ⁽²⁾ | Integral kerb and gutter | No | No | See Note | |
| | Two Lane:5.5 | Carriageway | As Above | No | No | See Note | |
| Local Street | 7.5 (Cul-de-sac end) | Carriageway | As Above | 1.2m wide ⁽⁴⁾ footpath(s) | No | 14.5m | 2x3.5m nature strip, paved one side 1.2m. |
| | 9.0 (Through road) | Carriageway | As Above | As Above | If on a bicycle route provide 2.5m bicycle/pedestrian path one side | 16.0m | 2x3.5m nature strip, paved one side 1.2m |
| Collector Street | 11.0 | Carriageway or Indented parking. | As above | 1.2m wide footpath both sides. | 2.5m bicycle/pedestrian path one side only in the verge | 20.0m ⁽⁸⁾ | 2x4.5 nature stirp to allow for local widening. 2.5m paved cycleway one side, 1.2m paved footpath other side |
| Local Sub-Arterial Road | 13.0 | Parking not permitted on carriageway ⁽⁶⁾ | As above | If required 1.2m wide footpath, and/or 2.5m bicycle path one side only ⁽⁷⁾ | 2.5m bicycle/pedestrian path one side only in the verge or two 1.5m wide bicycle lanes marked on carriageway. | 22.0m ⁽⁸⁾ | 2x4.5 nature strip to allow for local widening. 2.5m paved cycleway one side, 1.2m paved footpath other side |

Based upon the above, the internal residential layout based upon Councils DCP should provide 9m carriageway widths. The internal road layout is not expected to be open as public land and as such Council's DCP does not strictly apply. Reference is made to AMCORD *Part 2 Design elements Physical Infrastructure* which outlines the following characteristics of street types shown in **Figure 4** below.



| Table 1 | | | |
|-----------------|----|--------|-------|
| Characteristics | of | street | types |

| Street type | maximum traffic volume | Target speed & design speed (km/h) (2) | Street reserve width minimum (m) (3) | Carriageway width (m) (4) | Verge width minimum (m) each side (5) | Parking provision within street reserve | Kerb type (20) | Entrance kerb return minimum (m) | Property access | Street longitu- dinal gradient maximum s% | Footpath | Cycles |
|--------------------------------|------------------------------|--|--|---|--|--|----------------------|--|--------------------------------|---|---|---|
| ACCESS S Access lane | TREETS 100 | 15 | varies | See note (6) | Not specified | No | Not required | NA | Rear | NA | No | Share with vehicles |
| Access place (7) | 0–300 | 15 | 10.0 | | See note (9) | 1 Hard standing verge space per 2 dw. with scope for extra space | Layout flush | 5 (10) | Access to all sites (21) | 17 (11) | No | Share with vehicles |
| Access street | 0-300 (1) | 40 | 12.0 | 5.0 only | 3.5 | Carriageway | Layback | 4 | Access to all sites (2 | | No (12) | Share with vehicles |
| Access street | 300-1000 | 40 | 13.0 | 5.0–5.5 only (14) | 4.0 | Carriageway | Layback | 5 | Access to all sites (2 | | No | Share with vehicles |
| Access street | 1000–2000 | 40 | 13.5 | 5.5or7.0 | 4.0 | Carriageway | Layback | 5 | Access to all sites (2 | 1) | 1.2m wide one side (13) | Share with vehicles |
| COLLECTO Minor collector | | 50(20 at desig- nated ped-cyc. crossing) | 16.50 | 7.0–7.5 or 6.0–6.5 plus indented parking | 4.5 | Carriageway or indented | Layback (15) | 6 | Access to all sites (1) | 7) | 1.2m wide both sides located away from kerb | Provide within street pavement (22) |
| Major Provide | 3000-6000 | | | | Design us | ing the perform | nance criteria | а | | | | 1.2m wide |
| collector | | | | | | | | | | | located away from kerb (18) | within street pavement (22) |

FIGURE 4: AMCORD CHARACTERISTICS OF STREET TYPES

Based upon the above design requirements the 95-dwelling development for seniors would generate 200 vehicle trips per day, resulting in a design requirement of 5.0m wide carriageway widths. The site layout includes the provision of 5.5m wide roadway widths complying with this requirement.

5.2 Roadway Design & Compliance

The proposed internal roadways have been assessed to be in compliance with the relevant sections of AS2890.1:2004 and AMCORD. The infrastructure works such as road construction, service installation and the like would be subject to further detailed review and assessment at construction certificate stage.

The design includes:

- Internal circulation roadways with a width of 5.5m, with additional width at corners to provide passing around corners;
- An internal roundabout to facilitate forward entry and exit onto Galston Road;



- Circulation roadway designed to enable a 11.5m length HRV Waste Collection vehicle to enter and exit the site as well as servicing the four (4) onsite waste reciprocals;
- Circulation roadway designed to enable up to a 19m length Semi-Trailer vehicle to enter and exit the site in a forward direction;
- A 15m wide driveway frontage onto Galston Road facilitating access for private vehicles and Commercial Vehicles that are required to serve the site.

The proposed retirement village layout is reproduced in **Annexure A** with swept paths of critical turns reproduced in **Annexure C** for reference.



6 CONCLUSION

In view of the foregoing, the proposed senior living development (as depicted in **Annexure A**) is fully supportable in terms of its traffic and parking impacts. The following outcomes of this traffic impact assessment are relevant to note:

- The proposed conceptual road layout is adequately designed according to AMCORD requirements.
- The proposed subdivision requires the provision of **116** residential car parking spaces. The site layout does not provide concept plans for the individual dwelling houses, however there is ample site area in each lot to provide the required number of car parking spaces. The operation of the site would demand a maximum of eight (8) staff car parking spaces if all staff members arrived on the same day which is unlikely. The on-street car parking provision of **22** spaces can fully accommodate this parking demand.
- The traffic generated by the site equates to **38** vehicles trips in both the AM (8 in; 30 out) and PM (30 IN; 8 OUT) peak periods respectively. The traffic generated by the proposed development will be of a low order and will not detrimentally impact the ongoing operation of the existing road network.
- Road safety evaluation will follow within each development application for each lot and residential flat building to ensure that lots can be adequately served in terms of potential individual driveway locations and car parking design.
- On-street parking spaces have been designed in accordance with the relevant Australian Standards including AS2890.1.



ANNEXURE A: CONCEPT SITE PLANS (SHEET 1 OF 1)





ANNEXURE B: PRELIMINARY RMS ADVICE (SHEET 1 OF 2)



23 November 2017

Our Reference: SYD17/01491 Your ref: DA/850/2011

nik@planik.com.au

Planik PO BOX 577 Gymea NSW 2227

Attention: Nicole Lennon

Dear Madam,

PROPOSED RETIREMENT VILLAGE DEVELOPMENT 328A – 334 GALSTON ROAD, GALSTON

Reference is made to your email dated 23 October 2017 and regarding the abovementioned Pre-DA which was referred to Roads and Maritime Services (Roads and Maritime) for comment.

Roads and Maritime has reviewed the submitted proposal and notes that there is an existing approval for DA/850/2011. It is also noted that the new proposal includes the acquisition of 328A Galston Road to incorporate into the development along with minor changes to the previously approved development. Therefore, Roads and Maritime has reviewed the proposal against current practice and provides the following comments:

1. Roads and Maritime advises that current practice is to limit the number of vehicular conflict points along the arterial road network to maintain network efficiency and road safety. This current practice is reflected in Section 6.2.1 of Roads and Maritime current publication of the Guide to Traffic Generating Developments, which states 'access across the boundary with a major road is to be avoided wherever possible'. Furthermore, the Australian Guidelines "Planning for Road Safety" is based on the widely accepted principle of conflict reduction by separating the traffic movement and land access functions as much as possible. Galston Road is a major arterial road, which carries a high volume of traffic, where transport efficiency of through traffic is of great importance. The number of access points should be minimised. Therefore the proposed development is to have one access point only.

Roads and Maritime would be supportive of the development proposal upon receipt of amended plans that demonstrate a singular access point into the site. The proposed access should meet Australian Standards inclusive of satisfactory swept paths demonstrating vehicles entering and exiting the site in a forward direction.

It is emphasised that the comments provided above are informal and of a Pre-DA nature. They are not to be interpreted as binding upon Roads and Maritime and may change following formal assessment of a submitted development application from the appropriate consent authority.

Roads and Maritime Services

27-31 Argyle Street, Parramatta NSW 2150 | PO BOX 973 Parramatta NSW 2150 |

www.rms.nsw.gov.au | 13 22 13



ANNEXURE B: PRELIMINARY RMS ADVICE (SHEET 2 OF 2)

Should you have any further inquiries in relation to this matter, please do not hesitate to contact me on telephone 8849 2076 or by email at development.sydney@rms.nsw.gov.au Yours sincerely, Hans Pilly Mootanah A/Senior Land Use Planner Network Sydney North West Precinct





19m Articulated Vehicle entry into the development Tested @ 5km/h Successful





(Shoot 2 of 5)

2 x B99 vehicles passing 19m Articulated Vehicle at proposed sewage collection area.

Tested @ 5km/h Successful

Recommend providing the loading area as chevron linemarking to detour internal vehicles towards the roundabout such that





(Sheet 3 of 5)

19m length Articulated Vehicle circulating within site Tested @ 5km/h Successful – subject to traffic controller to ensure vehicle opposes AV during its circulation route out of the development site.





11.5m length Heavy Rigid Vehicle circulating within subdivision Tested @ 5km/h Successful





B99 passing B85 along all corners Tested @ 5km/h Successful



ANNEXURE D: SIGHT LINE ASSESSMENT



190m sight line to the east of the proposed site driveway



200m sight line to the west of the proposed site driveway