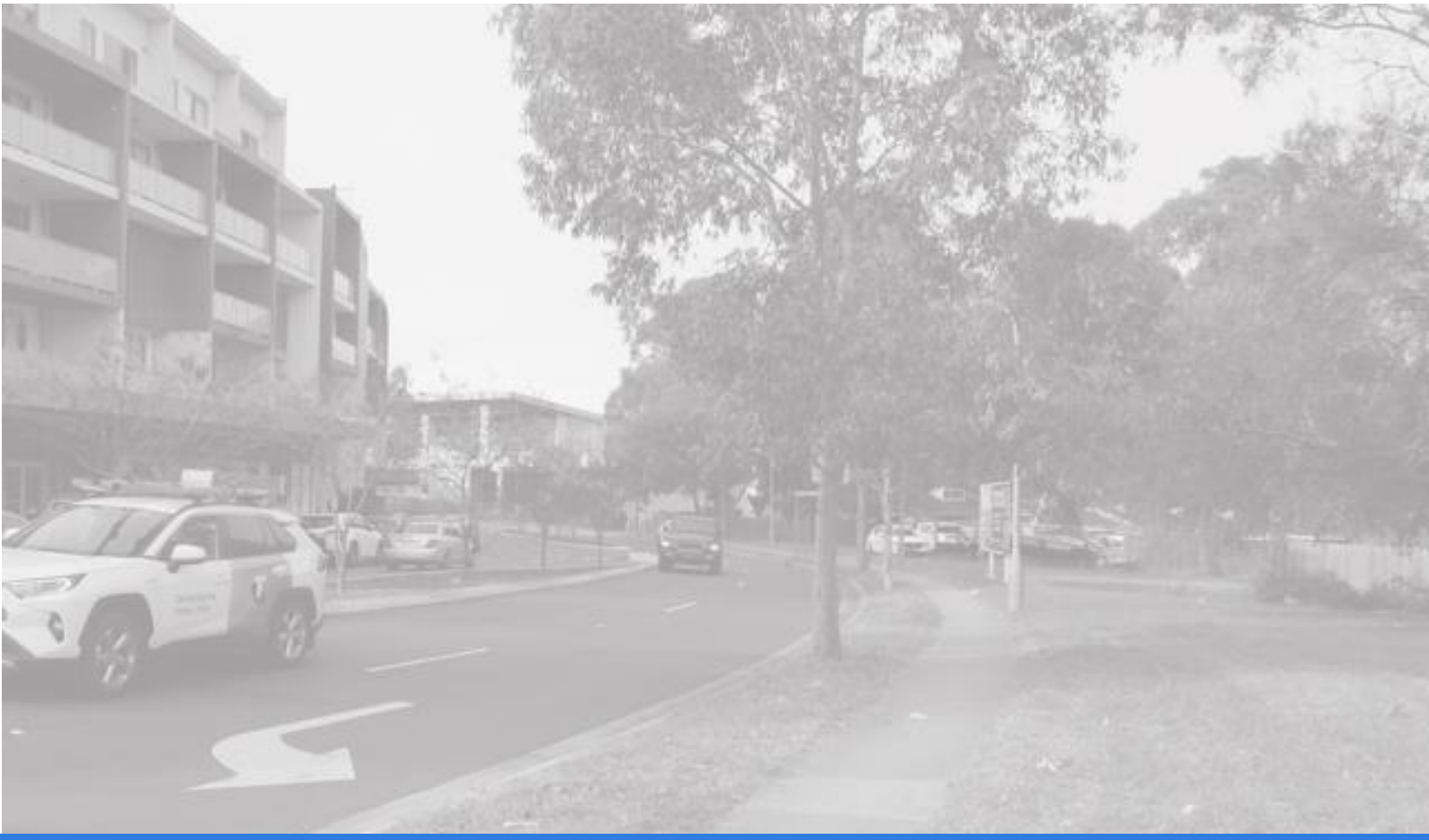

Bonnyrigg Stage 12 to 13 Subdivision
Traffic and Transport Assessment

Prepared for:

NSW Land and Housing Corporation

17 October 2022

The Transport Planning Partnership

Bonnyrigg Stage 12 to 13 Subdivision Traffic and Transport Assessment

Client: NSW Land and Housing Corporation

Version: V03

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Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
V01	12/10/22	Clinton Cheung	Stephen Read	Wayne Johnson	
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V03	17/10/22	Clinton Cheung	Stephen Read	Wayne Johnson	

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APPENDICES

1 Introduction

1.1 Overview

The Transport Planning Partnership (TTPP) has prepared this traffic and transport assessment report on behalf of Land and Housing Corporation (LAHC) to support a Development Application (DA) for a 4 lot, 3 stage super lot subdivision at Bonnyrigg to be submitted to Fairfield City Council (Council). The subdivision is known as the Town Centre Precinct, formerly known as Stage 12 and 13 of the Newleaf Bonnyrigg Project.

The proposal will remove the existing cul-de-sac roads located within the site. The existing access point off Bonnyrigg Avenue will be converted into a new proposed road connecting to Tarlington Parade to provide access to the proposed subdivision area. The proposal will involve the demolition of 109 existing allotments within the subject area. A total of some 616 residential (medium and high density) dwellings would be developed over three stages.

This purpose of this report is to present the findings of the traffic and transport assessment and identify potential impacts of the proposal on the transport network.

1.2 Newleaf Bonnyrigg Project Background

In 2008 the Newleaf Bonnyrigg Project was proposed to provide additional dwellings under a 30-year Public Private Partnership (PPP) arrangement, as part of a renewal of an existing social housing estate of some 81 hectares located in Bonnyrigg. The proposed development initially planned for an increase in development intensity from 936 dwellings to 2,332 dwellings (including 833 social housing dwellings). As part of the DA process, a Transport Management & Accessibility Plan (TMAP) was prepared by Sinclair Knight Merz (SKM) in 2008.

In 2011, the concept plan for the development was further modified to include 2,500 dwellings. GTA Consultants (GTA) was commissioned by Newleaf Communities to provide an updated report in relation to the modified concept plan approval for Bonnyrigg.

In 2015, the PPP was dissolved, and the landowner NSW Land and Housing Corporation (LAHC) continued the redevelopment program.

In November 2017, a further modification to the concept plan proposed an additional 500 dwellings, making it a total of 3,000 dwellings. GTA was commissioned by LAHC to update the previous traffic and transport study in relation to the latest concept plan for Bonnyrigg.

Department of Planning and Environment (DPE) issued Secretary's Environmental Assessment Requirements (SEARs) in March 2018. In response to the proposed additional dwelling yield and changes to the transport network, the SEARs required an update to the 2008 TMAP. GTA

were commissioned by LAHC to update the TMAP and update the traffic modelling for the 3,000 dwellings now expected for the precinct.

A modification to the Bonnyrigg Concept Plan was determined in November 2020 that provided for the following:

- Reconfiguration of the staging plan into 5 precincts with earlier stage 1 to 7 being allocated to Stage 1 of the project
- Increased the total number of dwellings generated by the project from 2,500 to 3000 predominantly due to an additional 3 to 6 storey apartment style buildings in the new precincts adjacent to Bonnyrigg Plaza
- Maintenance of the 70:30 split of private and social housing intended for redevelopment of the estate
- Revised local road network to remove dead ends and cul-de-sacs where possible
- Four kilometres of new dedicated pedestrian and cycle paths including new links to transport, retail and community services

To date, the NSW Land and Housing Corporation (LAHC) has completed the first five stages of the development, delivering 548 new homes, including 212 social homes. Midway through 2021, Stages 6-7 were also completed which included 22 new apartments and 22 new social houses.

Humphries Precinct Stage 8-11 will commence work soon delivering 222 residential allotments in this precinct, along with a new park and roads to improve connections with already completed homes in other stages.

The next phase of the redevelopment program is preparation of a 3-stage super lot subdivision application to Council for the Town Centre Precinct, formerly known as Stages 12 and 13 (this report).

1.3 References

References have been made to, but not limited to, the following documents in preparation of this report:

- Transport Management and Access Plan (TMAP) Bonnyrigg Living Centres (GTA Consultants, 2018).
- Bonnyrigg TMAP Intersection Upgrade Recommendation Technical Note (2019)
- Bonnyrigg TMAP Recommendation VPA for Fairfield Council Technical Note (2019)
- Fairfield City Wide Development Control Plan (DCP) 2013.
- Bonnyrigg Masterplan Part 5 Private Realm Guidelines (2012).

1.4 Report Structure

The report assesses the traffic implications associated with the proposed development and is set out as follows:

- Chapter 2 discusses the existing conditions including a description of the subject site
- Chapter 3 provides a brief summary of the Bonnyrigg strategic context
- Chapter 4 provides a brief description of the proposed development
- Chapter 5 assesses the proposed on-site parking provision and internal layout
- Chapter 6 examines the traffic generation and resultant traffic implications arising from the proposed development
- Chapter 7 reviews the proposed road layout within the subdivision
- Chapter 8 presents the conclusions of the assessment.

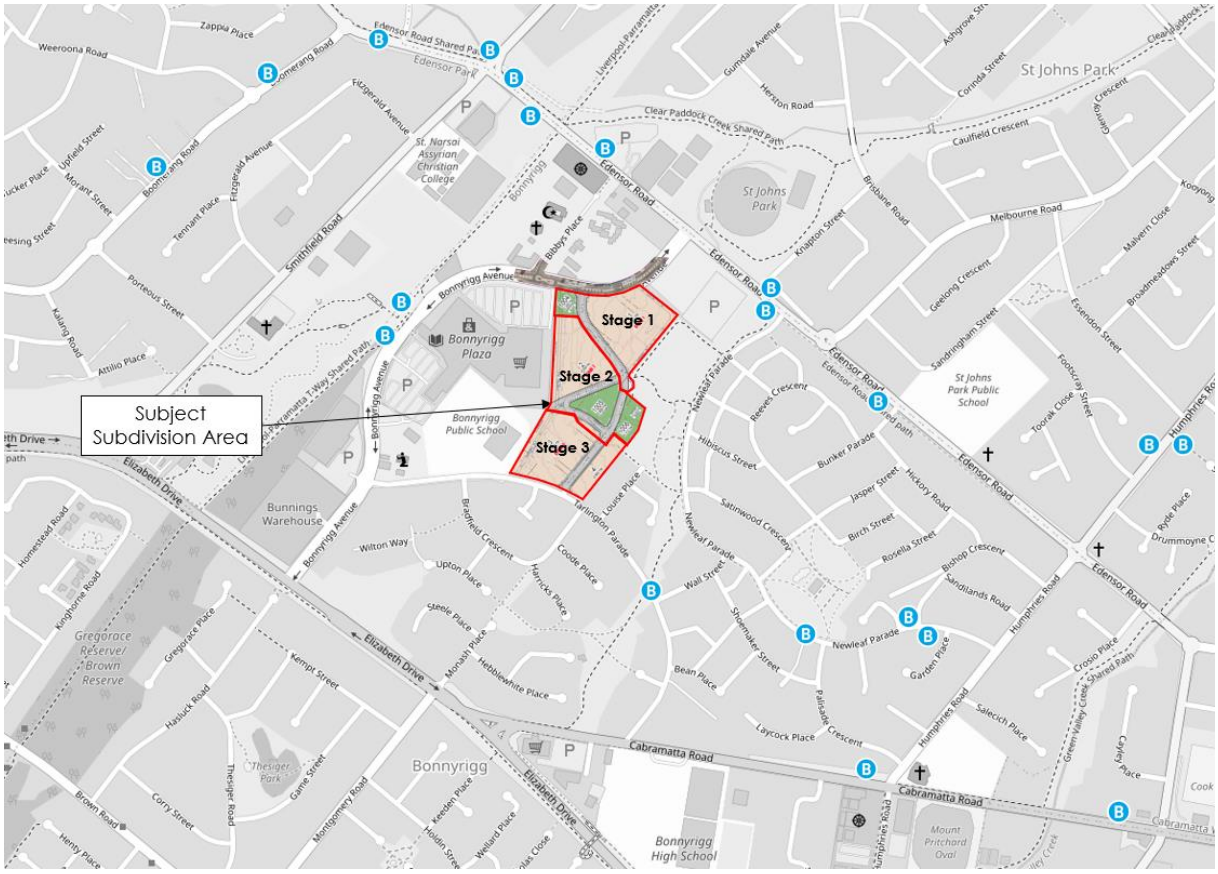
2 Existing Conditions

2.1 Site Description

The subject site is located in the western Sydney suburb of Bonnyrigg and is located within the local government area of City of Fairfield Council (Council). The subject site is bounded by Bonnyrigg Avenue to the north, Tarlington Parade to the south, Tarlington Reserve to the east and Bonnyrigg Plaza to the west. The subject subdivision area which this report relates, and its surrounds is shown in Figure 2.1.

The site is currently occupied by a number of existing social housing dwellings. It is understood there are 2 lots – one lot contains 108 residential dwellings and the other lot a former childcare centre, within the proposed subdivision area. In addition to this, there are a number of existing internal roads within the site.

Figure 2.1: Subject Subdivision Area Locality



Basemap source: Open Street Maps
Subdivision Concept Plan: Premise (plan dated 8/11/2021)

Land uses surrounding the subject area comprise low density residential dwellings. Notably, there are also some retail/commercial uses (e.g. Bonnyrigg Plaza) and educational establishments (Bonnyrigg Public School) located directly adjacent to the west.

The future Western Sydney Airport – Badgerys Creek Aerotropolis will be located approximately 10km west of the subject area and the Western Sydney Employment Area located 6km to the north.

2.2 Abutting Road Network

2.2.1 Bonnyrigg Avenue

Bonnyrigg Avenue is a local road which will provide direct access to the proposed site area to/from the north (as shown in Figure 2.1). Bonnyrigg Avenue connects Edensor Road and Elizabeth Drive to the north and south respectively. The road generally provides two traffic lanes in each direction separated by a central median. Notably, Bonnyrigg Avenue also provides access to the adjacent Bonnyrigg Plaza and Liverpool – Parramatta Transitway (Bonnyrigg T-way) bus station.

Bonnyrigg Avenue has a posted speed limit of 50km/h. Limited on-street parking is provided on both sides of Bonnyrigg Avenue. Within the vicinity of the subject site unrestricted kerbside parking is provided on the western side of Bonnyrigg Avenue fronting the existing shop top housing.

2.2.2 Tarlington Parade

Tarlington Parade functions as a local collector road within Bonnyrigg area and connects Bonnyrigg Avenue to Cabramatta Road W. Tarlington Parade will provide direct access to the proposed site area to/from the south (as shown in Figure 2.1). Unrestricted kerbside parking is generally provided on both sides of the road within the vicinity of the site.

Tarlington Parade has a posted speed limit of 50km/h. However, there is a 40km/h school zone operational during morning and afternoon school peak periods (adjacent to the Bonnyrigg Public School (i.e. 40km/h speed zone between 8:00am-9:30am and 2:30pm-4:00pm School Days).

2.2.3 Edensor Road

Edensor Road is a regional sub-arterial road that runs in a north-west to south-east direction within the vicinity of the subject area. The road is configured as a two-way road with one traffic lane and one kerbside parking lane in each direction. The subject site can be accessed from Edensor Road via Bonnyrigg Avenue.

Edensor Road has a posted speed limit of 60km/h. However, there is a 40km/h school zone operational during morning and afternoon school peak periods adjacent to St Johns Park Public School (i.e. 40km/h speed zone between 8:00am-9:30am and 2:30pm-4:00pm School Days).

2.3 Pedestrian Infrastructure

Within the existing social housing subdivision, no pedestrian footpaths are provided.

Within the wider existing residential subdivision pedestrian footpaths are generally provided on one-side or both sides (for higher order roads). Signalised pedestrian crossings are provided on all approaches at the intersection of Bonnyrigg Avenue – Edensor Road and Bonnyrigg Avenue – Elizabeth Drive. Zebra crossings are also provided across Tarlington Parade and Bonnyrigg Avenue within the vicinity of the schools and Bonnyrigg Plaza.

2.4 Cycling Infrastructure

An extensive cycleway network is available in the vicinity of the site. The existing local cycleway routes provide connectivity to the wider cycleway networks towards Liverpool to the south and Blacktown to the north. These existing cycleway routes surrounding the site are shown in Figure 2.2.

Figure 2.2: Existing Cycleway Network

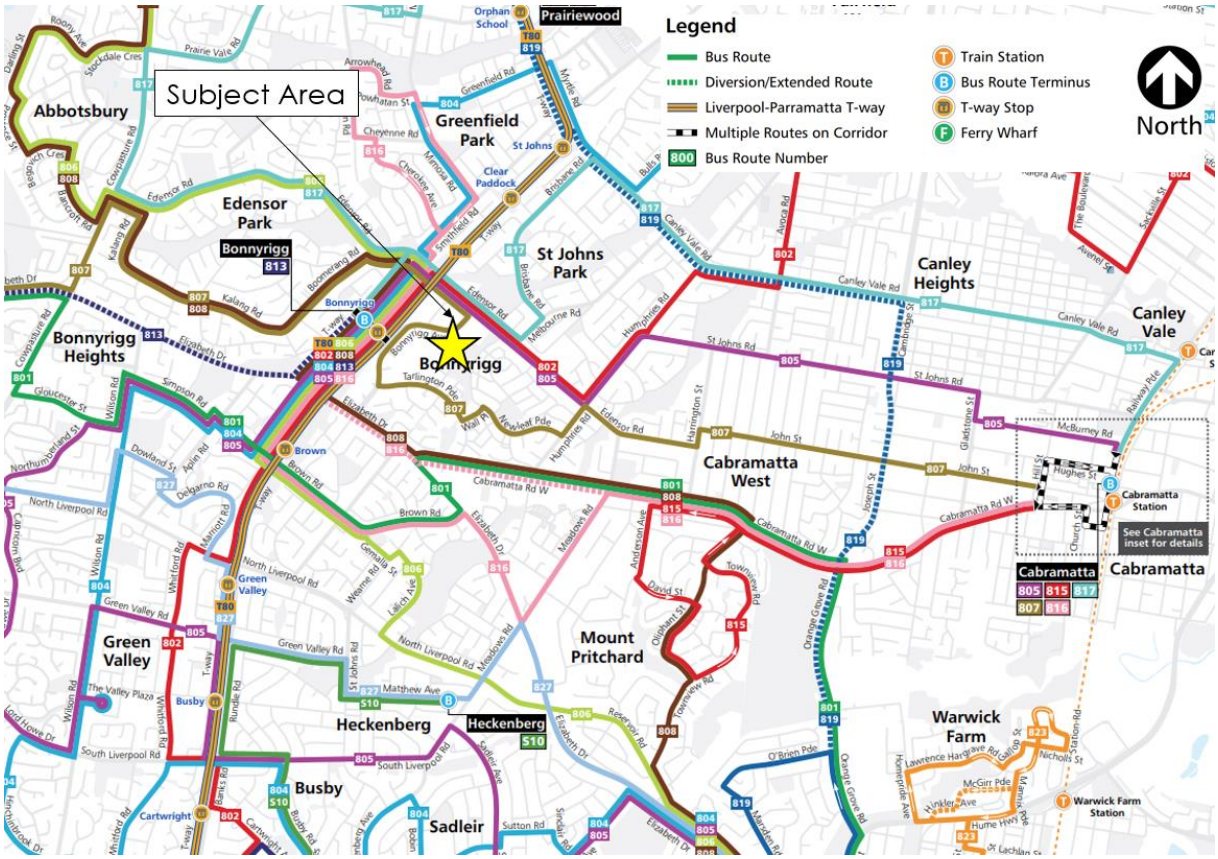
Source: Fairfield City Cycleways 2019

2.5 Public Transport Facilities

The nearest railway station being Cabramatta Station is located approximately 4.5km east of the subject area which is beyond the typical walking distance. However, the site is serviced by buses which feed into Cabramatta Station and the T-way that connects Parramatta to

Liverpool. The whole site is within 400m walking distance of a bus stop with bus stops located along Edensor Road, Bonnyrigg Avenue and Tarlington Avenue. The surrounding public bus route network is shown in Figure 2.3.

Figure 2.3: Existing Bus Network



Source: Transport for NSW

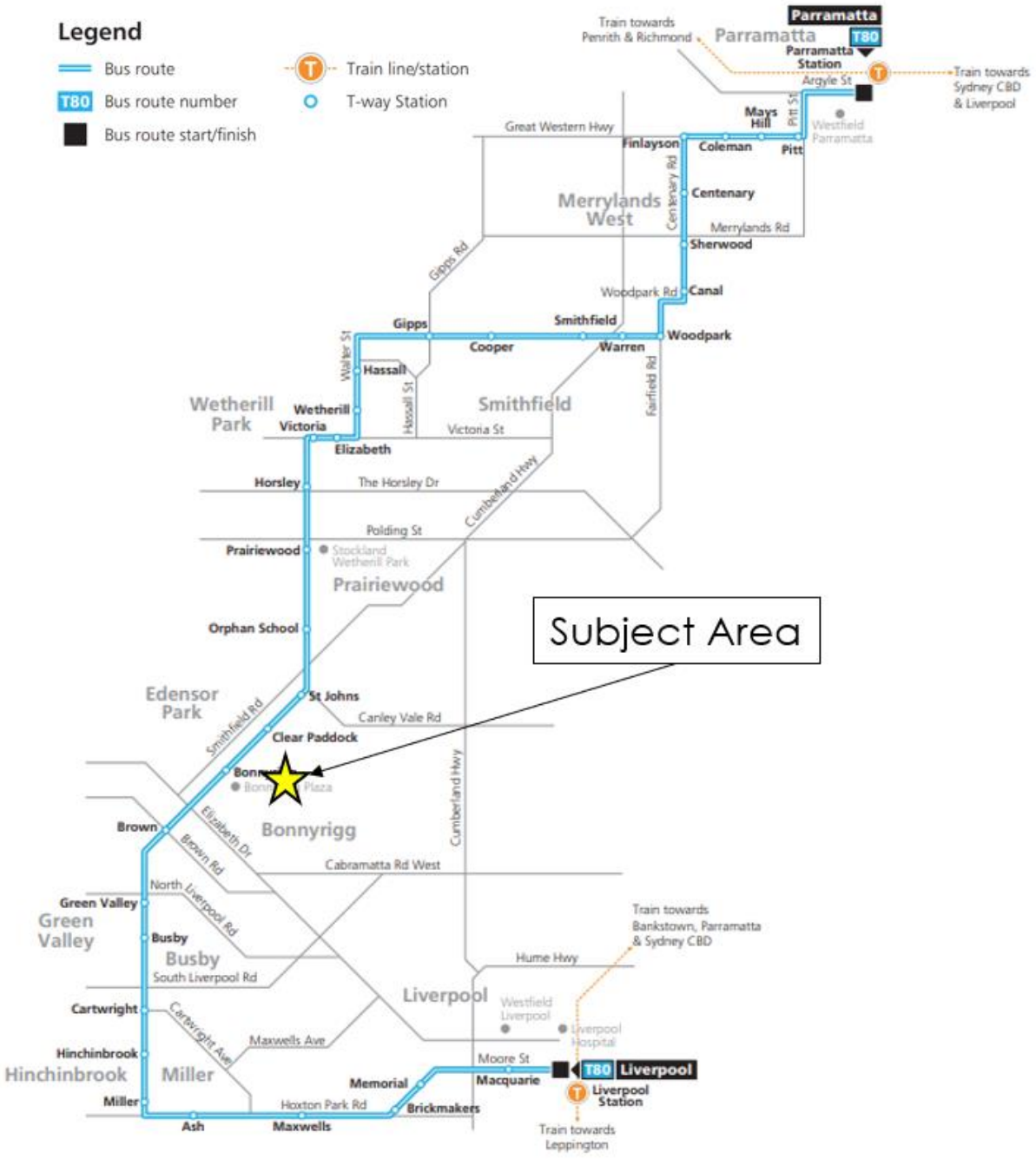
A summary of the public bus services and respective frequencies in proximity of the site is summarised in Table 2.1.

Table 2.1: Public Bus Services

Bus Route	Route Description	Proximity from Site	Weekday Frequency	
			Peak	Off-peak
802	Liverpool to Parramatta via Guildford West	Bonnyrigg T-way Station	30mins	30mins
804	Parramatta to Liverpool via Fairfield West		15mins	30mins
805	Cabramatta to Liverpool via Bonnyrigg Heights		30mins	30mins
806	Parramatta to Liverpool via Abbotsbury		30mins	30mins
807	Cabramatta to Cecil Hills via Bonnyrigg	Bonnyrigg Avenue and Tarlington Parade	30mins	30mins
808	Fairfield to Liverpool via Abbotsbury	Bonnyrigg T-way Station	30mins	30mins
813	Bonnyrigg and Western Sydney Parklands to Fairfield		Limited services	
816	Greenfield Park to Cabramatta		30mins	Hourly
817	Fairfield to Cabramatta via Edensor Park		30mins	30mins
T80	Parramatta to Liverpool via T-Way		10mins	10mins

The Liverpool-Parramatta T-way links Parramatta Station and Liverpool Station, connecting the suburbs of Hoxton Park, Bonnyrigg, Prairiewood, Wetherill Park, Smithfield, Guilford West and South Wentworthville. The T-way consists of a separated bus rapid transitway, bus lanes on general traffic roads and mixed traffic. The Liverpool-Parramatta T-way is illustrated in Figure 2.4.

Figure 2.4: Liverpool – Parramatta Transitway



Source: Transport for NSW

3 Strategic Context – Bonnyrigg Living Communities Development

The proposed Bonnyrigg Living Communities development will consist of 3,000 dwellings in a mix of both social (30%) and private housing (70%). The development is proposed to be delivered throughout 18 stages of works separated into different phases for completion in different years. The proposed development is divided up into 5 precincts of which precinct 1 is currently under construction / near completion.

Figure 3.1: Map of Character Precincts

Source: AJ+C

As of January 2022, delivery of housing in Stages 1 to 5 has produced 548 new properties including 212 social housing homes as well as seven hectares of new and improved parklands. Together with 161 new dwellings completed in Stages 6 and 7 it brings the total to 709 approved new dwellings. Stages 8 to 11 will provide 219 standard lots and 3 superlots and is awaiting subdivision consent before commencing construction in 2023.

The final phase of the development, Stages 12 to 18 will consist of the greatest dwelling yield with 2,038 dwellings with a total of some 3,000 dwellings within the Bonnyrigg Living Communities development. This report relates to Stages 12 and 13.

4 Proposed Development

4.1 Proposal Description

The proposal involves the re-subdivision that would facilitate construction of residential dwellings within the Bonnyrigg Town Centre as part of Stage 12 and 13 Bonnyrigg redevelopment. The development area is currently zoned as R1 General Residential.

A total of some 616 residential (medium and high density) dwellings would be developed over three stages.

Stage 1 works includes two new connections to Bonnyrigg Avenue, a new open space parcel fronting Bonnyrigg Avenue on lot 1004, and construction of the internal road to a temporary turning head at Tarlington Reserve.

Relocation of tenants will continue in Stage 2 whilst apartment buildings on Stage 1 are developed. Completion of the roadworks and delivery of open space lot 1005 and apartments within Stage 2 will then follow.

Stage 3 road works including connection to Tarlington Parade will follow after completion of Stage 2 works.

The existing and proposed subdivision numbers for each stage are summarised in Table 4.1.

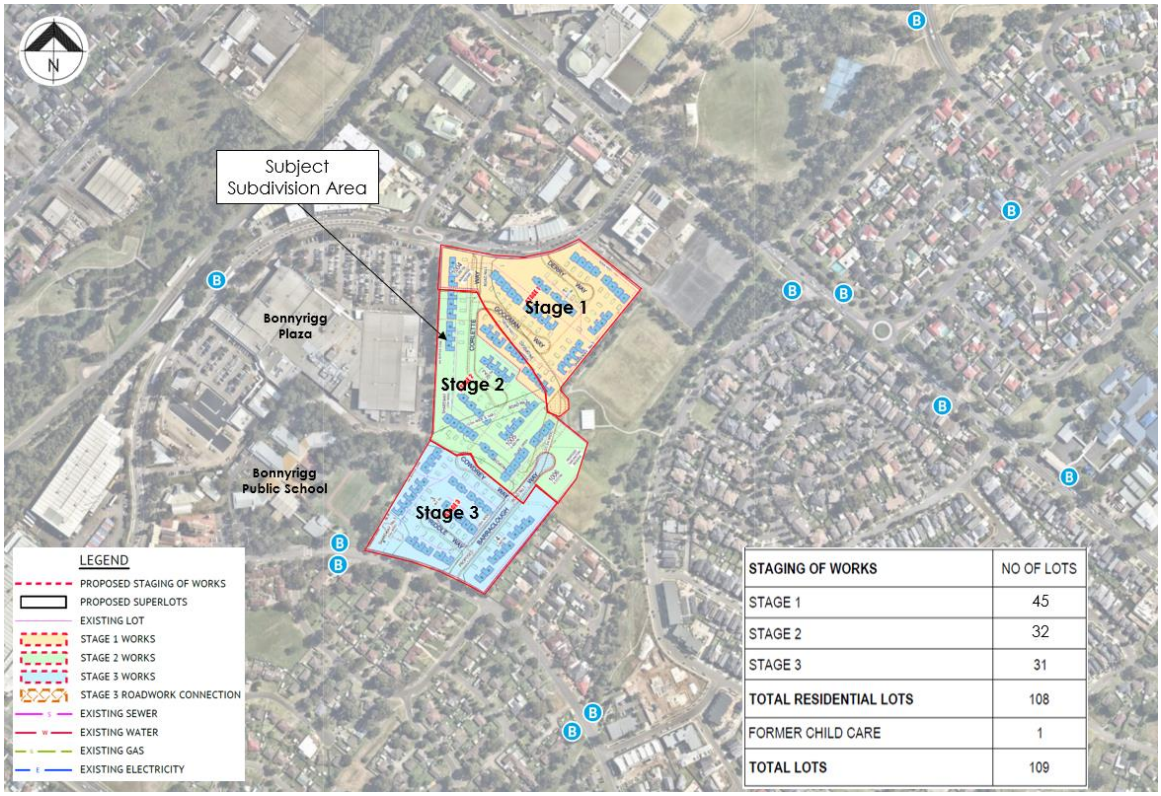
Table 4.1: Existing and Proposed Subdivision

	Stage 1 (Lot 1)	Stage 2 (Lot 2)	Stage 3 (Lot 3 and Lot 4)	Total
Existing	45 dwellings	32 dwellings	31 dwellings	108 dwellings + 1 former child care centre
Proposed	215 dwellings	199 dwellings	202 dwellings	616 dwellings

The existing dwelling and internal road overlay plan are shown in Figure 4.1 while the proposed subdivision with new internal road layout is shown in Figure 4.2.

Full architectural layout plans are provided in Appendix A.

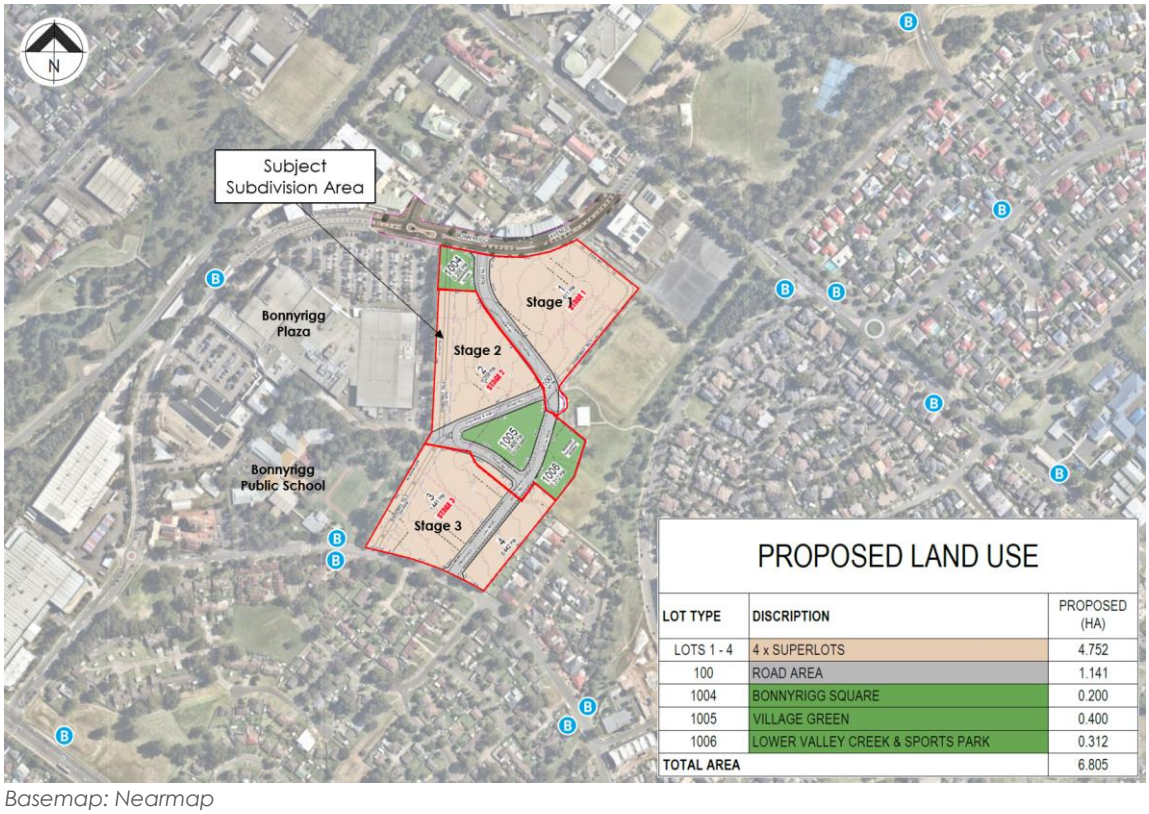
Figure 4.1: Existing Dwelling and Internal Road Overlay Plan



STAGING OF WORKS	NO OF LOTS
STAGE 1	45
STAGE 2	32
STAGE 3	31
TOTAL RESIDENTIAL LOTS	108
FORMER CHILD CARE	1
TOTAL LOTS	109

Basemap: Nearmap
Subdivision Concept Plan: Premise (plan dated 9/2/2021

Figure 4.2: Proposed Development Subdivision Layout



PROPOSED LAND USE

LOT TYPE	DISCRIPTION	PROPOSED (HA)
LOTS 1 - 4	4 x SUPERLOTS	4.752
100	ROAD AREA	1.141
1004	BONNYRIGG SQUARE	0.200
1005	VILLAGE GREEN	0.400
1006	LOWER VALLEY CREEK & SPORTS PARK	0.312
TOTAL AREA		6.805

Basemap: Nearmap

4.2 Internal Roads

As noted above, the existing internal roads would be demolished. A new 18m wide (kerb to kerb) proposed road will link Bonnyrigg Avenue and Tarlington Parade to the north and south respectively as shown in Figure 4.2 above.

Roads adjacent the open space / village green would have a 15m wide road reserve. The internal roads are undivided two-way roads that would allow some kerbside parking. Each medium and high-density building will have its own driveway.

Based on the Fairfield City Wide Development Control Plan, for local roads serving greater than 10 dwellings a 13m (7m pavement and 2 x 3m footpaths) width is required. The proposed carriageway width complies with Council's requirements.

The typical cross section for Road No. 1 is shown in Figure 4.3 and for Road No. 2 in Figure 4.4.

Figure 4.3: Typical Cross Section Road No. 1

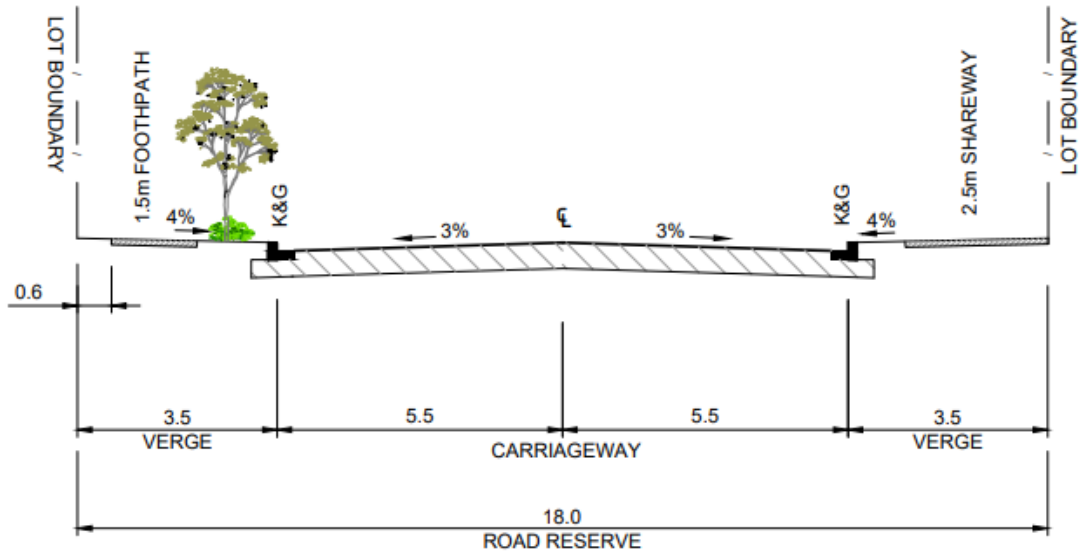
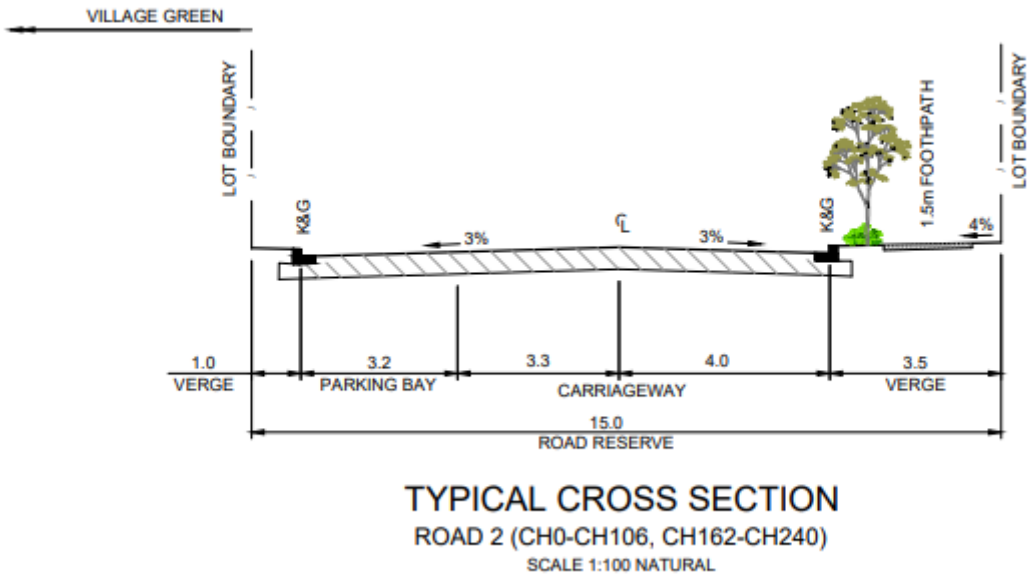


Figure 4.4: Typical Cross Section Road No. 2



Swept path analysis has been undertaken on the proposed internal roads using an 11m Council garbage truck and B99 car. Full swept path analysis is provided in Appendix B and discussion of the future road network is provided in Section 6.

4.3 Pedestrian and Cycling Facilities

Pedestrian footpaths will be provided on both sides of all internal roads.

5 Parking Assessment

5.1 Residential Car Parking

5.1.1 Fairfield City Wide DCP 2013

It is noted that the Fairfield City Wide DCP 2013 does not stipulate residential car parking rates specifically for the Bonnyrigg Living Communities/Newleaf Bonnyrigg area. As such, car parking for the proposed subdivision area would be based on the Fairfield City Wide DCP 2013.

The DCP car parking requirements are summarised below in Table 5.1.

Table 5.1: Estimated Residential DCP Car Parking Requirements

Land Use Type		DCP Minimum Parking Rate
Residential Apartments	Studio	1 space per dwelling
	1-bed	
	2-bed	
	3-bed	
	Visitor	1 space per 4 dwellings
Residential Townhouse [1]	1-bed (<110m²)	1 space per dwelling
	2-bed (<110m²)	
	3-bed (>110m²)	2 spaces per dwelling
	Visitor	1 space per 4 dwellings

[1] Dwelling Location [B] – Greater than 400m from railway station or major bus station

5.1.2 Bonnyrigg TMAP Recommended Car Parking

Appendix D of the GTA TMAP (2018) provides recommendations for car parking rates based on extensive parking surveys of comparable 'greenfield' residential developments within the Sydney Metropolitan area. The survey extent, together with the comparable site choice while also considering the strategic objectives of land use and transport planning were used as justification for the proposed parking rates as summarised in Table 5.2.

Table 5.2: TMAP Proposed Residential Parking Rates

Car Parking Use	Detached Housing	Medium Density	High Density
Resident Parking	2 spaces/dwelling	1 space/ dwelling (1 to 2-bed) 1.5 spaces/ dwelling (3+ bed)	0.6 space/ apartment (1 bed) 0.9 space/ apartment (2 bed) 1.4 space/ apartment (3 bed)
Visitor Parking	On-street	On-street	0.2 spaces/ apartment

Based on the TMAP 2018, a review of the Fairfield City Wide DCP 2013 was assessed and was considered inappropriate for the master planned Bonnyrigg development. It was concluded that application of the DCP rates would contribute to poor outcomes, as they:

- Encouraged the continued use of private motor vehicle as a primary means of transport
- Discouraged the use of alternative forms of transport, such as public transport, cycling and walking
- Created visual impacts of an over-supply of car parking

5.1.3 Other Considerations

Consideration for a number of additional factors affecting car parking rates is appropriate with respect to Bonnyrigg and includes the following:

- It is expected that on-street parking demand will be greater in the vicinity of the medium and high-density development mix.
- Managing car parking by means of supply remains an effective measure to support public transport mode share. This is particularly relevant for the proposed subdivision due to the vicinity of the Parramatta-Liverpool T-Way.

5.2 Non-Residential Car Parking

The Fairfield City Wide DCP 2013 stipulates minimum car parking rates for commercial/retail and café uses. The

Table 5.3: Non-Residential DCP Car Parking Rates

Land Use Type	DCP Minimum Parking Rate
Commercial/Retail	1 space per 40m^2 GFA
Cafe	1 space per 7m^2 GFA

5.3 Motorcycle and Bicycle Parking

The Fairfield City Wide DCP (2013) does not stipulate motorcycle or bicycle parking requirements for residential uses.

6 Road network

The proposed road layout is shown in Figure 6.1. The proposal would create a new link road connecting Bonnyrigg Avenue and Tarlington Parade. A new loop road would also be provided circulating around the proposed open space/village green area. All existing cul-de-sacs within the subdivision would be removed. Road reserves would be 15-18m wide.

Figure 6.1: Proposed Road Layout

Swept paths for cars have been undertaken at key intersections with the standard B99 vehicle and Council garbage trucks. Swept paths at key intersections are shown in Figure 6.2 to Figure 6.3.

Figure 6.2: Bonnyrigg Avenue – Road No. 1

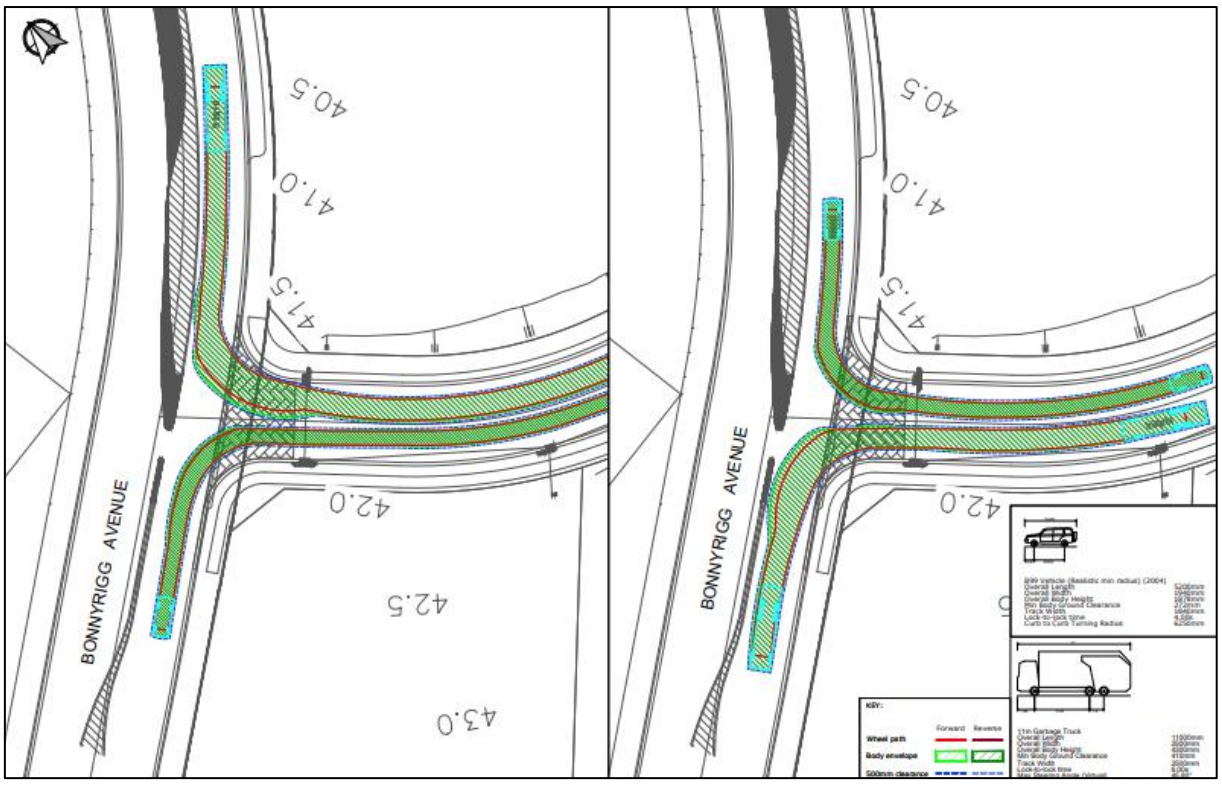
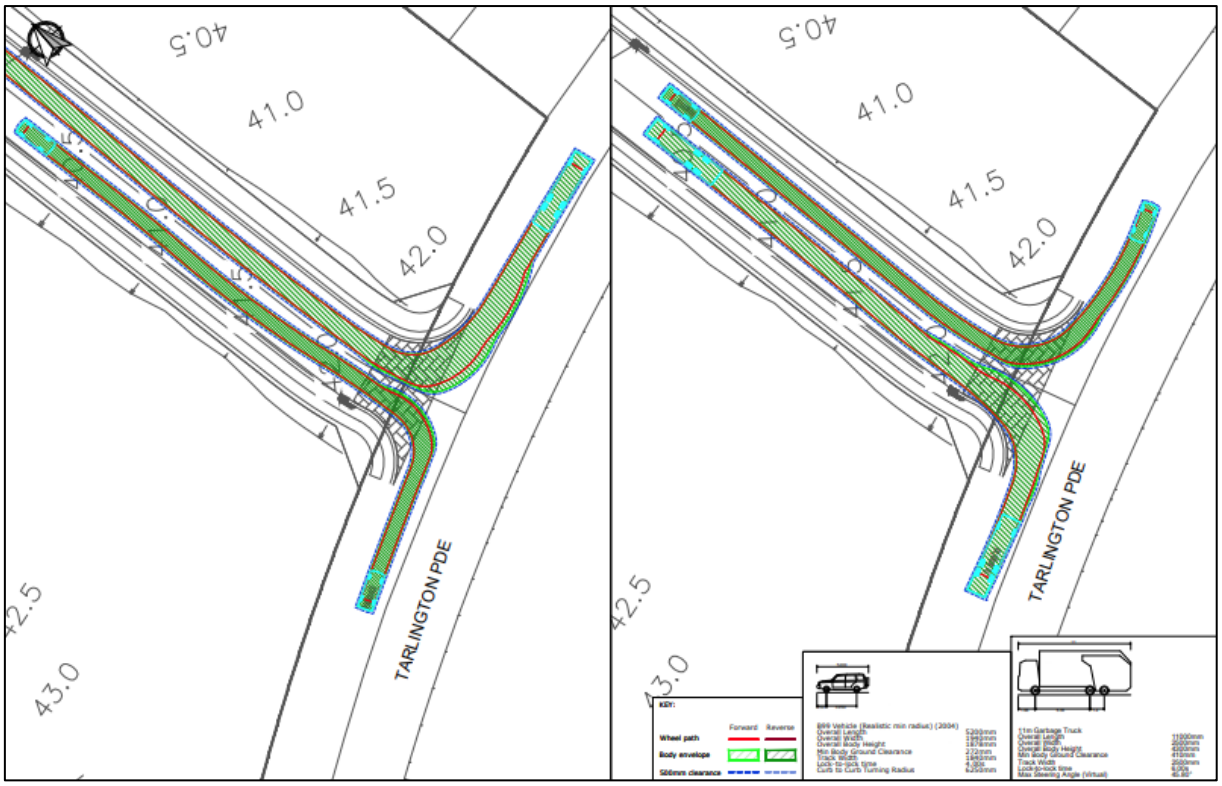


Figure 6.3: Tarlington Parade – Road No. 1



The swept paths show that there would be adequate room at intersections for vehicles to manoeuvre. Swept paths were also tested for a 11m garbage truck through the one way Road No. 2 shown in Figure 6.4 and Figure 6.5

Figure 6.4: Intersection of Road No. 1 and Road No. 2

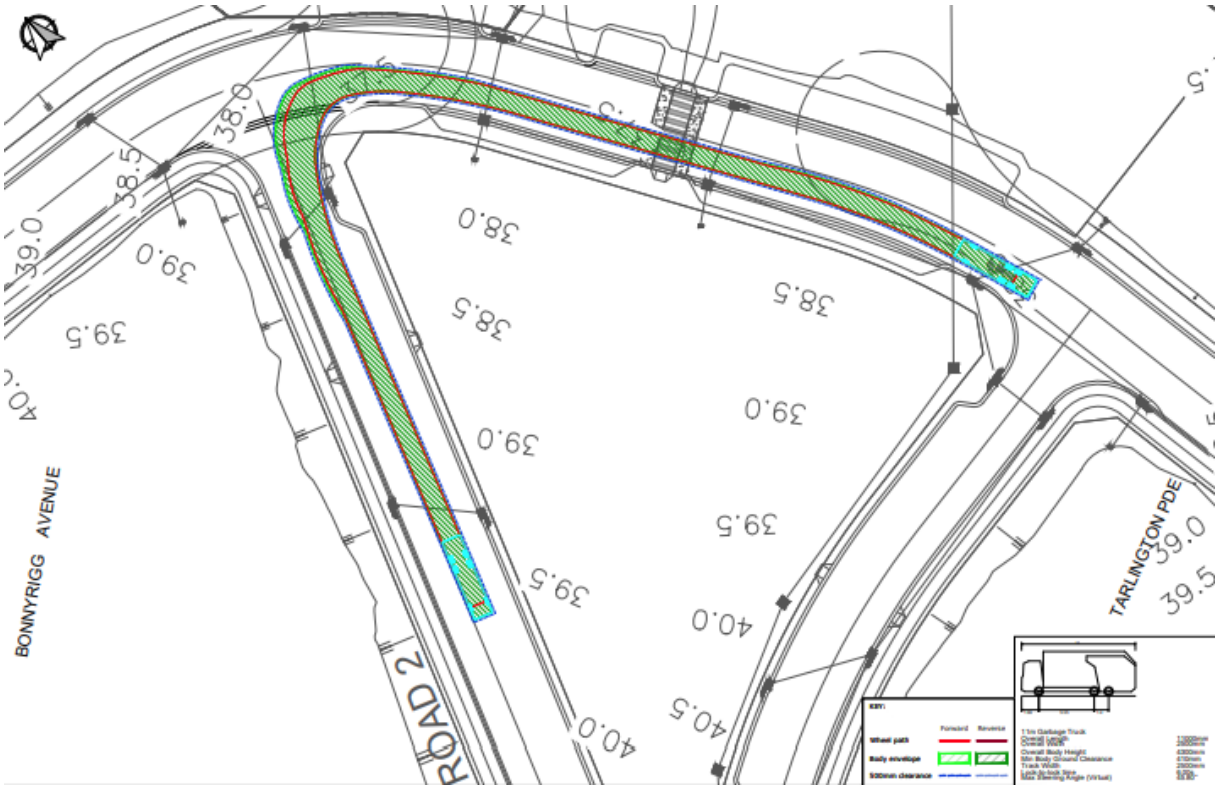


Figure 6.5: Internal Road No. 2

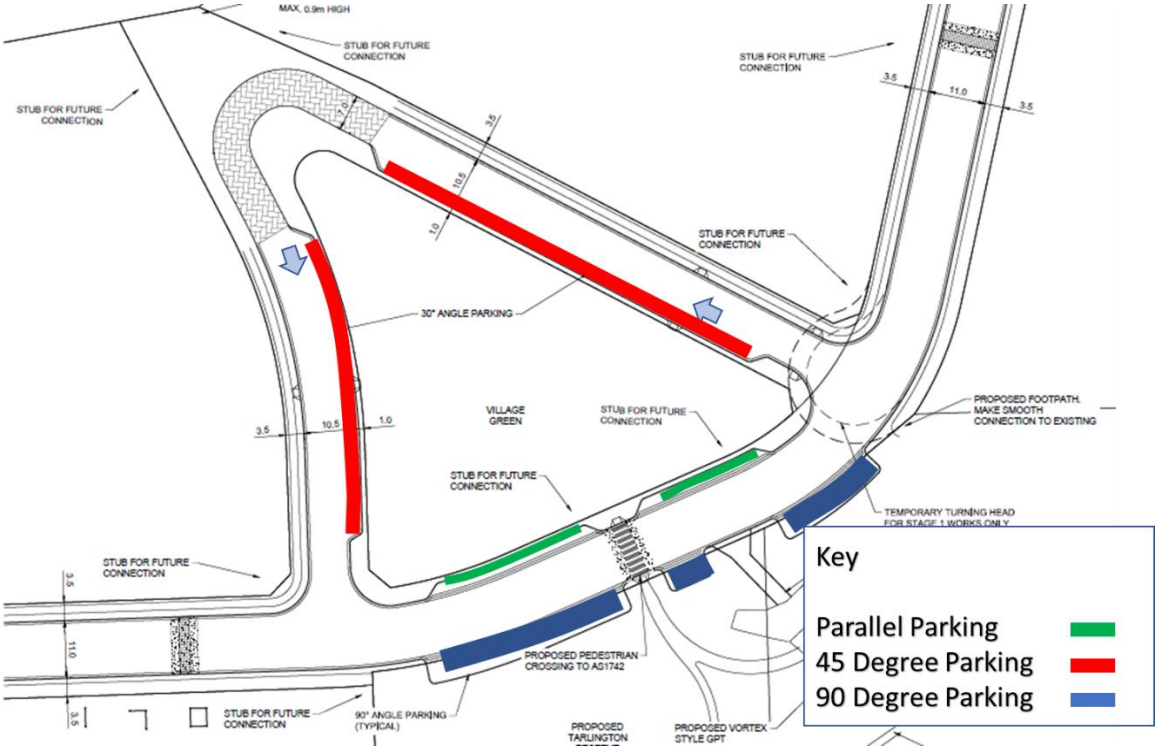
6.1 Internal Shareways

Some of the superlots may include internal access roads identified in previous plans as 'shared ways'. The shared ways are intended to provide both pedestrian and vehicle access and may take the form of a shared zone subject to meeting the relevant warrants. The detailed nature of the shared ways is yet to be determined however it is intended that the shared way would provide access for vehicles, garbage trucks and pedestrians.

6.2 On Street Parking

On-street parking will be provided throughout the development as shown in Figure 6.6.

Figure 6.6: On-street Parking



On street parking is to be provided in accordance with AS2890.5. There will be three types of on-street parking.

- Road 2 – 45 degree parking
- Road 1 – Indented parallel parking 2.5m
- Road 1 – 90 degree parking.

Based on AS2890.5, the 45 degree parking would be 5.6m deep and adjacent carriageway manoeuvring area required is 3.7m requiring a total of 9.3m. This could be accommodated within the 10.5m road width at this location.

The indented parking would be 2.5m wide and is in accordance with AS2890.5.

The 90 degree parking is to be provided adjacent to the public park and playing fields. The roadway will provide 10.6m from the kerb to the road centre line. The minimum requirement is 4.8m deep spaces (allowing overhang of low kerb) and 5.8m requiring a total of 10.6m. Therefore, parking would be in accordance with AS2890.5.

6.3 Pedestrian Crossing

It is proposed to provide a pedestrian crossing midblock on Road No. 1. This crossing is located on a strong desire line between the residential developments and the school and

shopping centre. The crossing is also next to the playing fields that are used on weekends. As such the crossing is likely to attract a high proportion of children on weekdays and weekends.

Installation of pedestrian crossings can be restricted based on not meeting the relevant warrants for pedestrian crossings. In NSW the warrants for pedestrian crossings are based on the number of pedestrians and the number of vehicles two-way. As the site is close to playing fields and a primary school it is recommended that the reduced warrants are used which are:

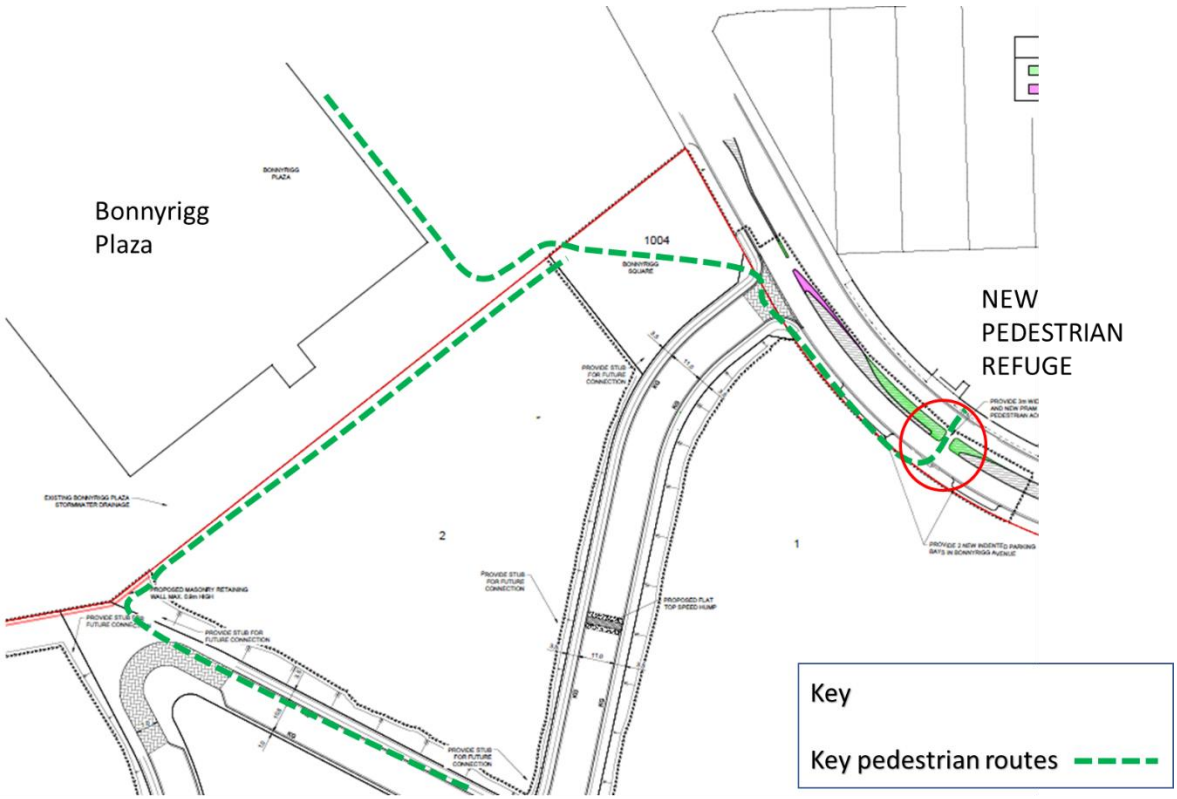
- Pedestrians > 30 per hour
- Vehicles > 200 vehicles per hour

These conditions need to met over two, one hour periods before and after school. As road No.1 has not been completed surveys have not been undertaken. However, given the strong pedestrian desire lines and the playing fields it is most likely that the pedestrian numbers will be significantly higher than 30 people an hour and that vehicle volumes are likely to reach over 100 vehicles per hour in each direction.

6.4 Pedestrian Connections

Pedestrian connections to the Bonnyrigg Shopping Centre has been considered as part to the project. The key pedestrian routes are shown in Figure 6.7.

Figure 6.7: Pedestrian Routes



The routes include a route along road No.2 to the Bonnyrigg Plaza that would travel along the western boundary of the project. Details of the route along the western boundary would be resolved with the development application for the stage 2 superlot.

The modification and closure of Derry Way would allow for the construction of a pedestrian refuge as part of the adjusted median on Bonnyrigg Avenue. This would allow pedestrian connection to the retail development on the northern side of Bonnyrigg Avenue.

6.5 Traffic Calming

Traffic calming is to be implemented along the main road No. 1 that would have speed humps in conjunction with the raised pedestrian crossing. Traffic calming devices are spaced some 80m apart to reduce the speeds along Road No. 1 and reduce the attractiveness of Road No. 1 as a through route.

7 Traffic Assessment

7.1 Overview

The traffic assessment has been based on review of the following reports:

- Transport Management and Accessibility Plan (TMAP) that has been prepared for the Bonnyrigg precinct and is to be endorsed by TfNSW.
- Bonnyrigg TMAP Intersection Upgrade Recommendation Technical Note (2019)
- Bonnyrigg TMAP Recommendation VPA for Fairfield Council Technical Note (2019)

The TMAP (2018) assessed a number of scenarios to understand the existing intersection operation performances, future background traffic growth and various development scenarios. A summary of the modelled scenarios in the TMAP are provided in Table 7.1.

Table 7.1: Modelled TIA Scenarios

Scenario Number	Scenario	Description
1	2017 – Existing Conditions	Existing conditions based on 2017 survey results
2	2027 – No Development	2027 scenario without Bonnyrigg development. A 1.5% p.a. growth factor was sourced from historical Roads and Maritime Annual Average Daily Traffic (AADT) data along Elizabeth Drive south of the Bonnyrigg development.
3	2027 – No Development with mitigation measures	2027 future year with mitigation measures to improve operations and capacity at a number of intersections noted to fail under the previous scenario
4	2027 – Approved Bonnyrigg development (2,500 dwellings)	2027 future year with previously approved 2,500 dwellings on the site to understand the impact of previously approved development on intersections on the mitigation measures for the 2027 base year (Scenario 3).
5	2027 – Approved Bonnyrigg development (2,500 dwellings) with mitigation measures	Mitigation measures modelled to allow key intersection to operate at acceptable levels of service and delay for a 2027 design year with 2,500 dwellings.
6	2027 – Additional Bonnyrigg development (3,000 dwellings)	2027 future year with 3,000 dwellings based on mitigation measures for 2,500 dwellings at select intersections to understand how the extra dwellings will impact the funding of the intersection upgrades.
7	2027 – Additional Bonnyrigg development (3,000 dwellings) with mitigation measures	Mitigation measures modelled previously identified to operate with unacceptable delay for 3,000 dwelling (Scenario 6) to operate at acceptable levels of service

Source: Bonnyrigg TMAP (GTA, 2018)

The traffic modelling scenarios assessed a network of key intersections as follows:

- Smithfield Road / Edensor Road
- Elizabeth Drive / Smithfield Road
- Edensor Road / Bonnyrigg Avenue

- Bonnyrigg Avenue / Elizabeth Drive
- Tarlington Parade / Bonnyrigg Avenue
- Elizabeth Drive / Cabramatta Road
- Tarlington Parade / Cabramatta Road
- Humphries Road / Cabramatta Road
- Humphries Road / Edensor Road
- Elizabeth Drive / Meadows Road.

7.2 Level of Service Criteria

Transport for NSW uses the performance measure level of service to define how efficient an intersection is operating under given prevailing traffic conditions. Level of service is directly related to the delays experienced by traffic travelling the intersection. Level of service ranges from LoS A to LoS F. LoS A indicates the intersection is operating with spare capacity, while LoS F indicates the intersection is operating above capacity. LoS D is the long term desirable level of service.

At signalised intersections, the average delay is the volume weighted average of all movements. For roundabouts and priority (give way and stop sign) controlled intersections, the average delay relates to the worst movement.

Table 7.2 shows the criteria that has been adopted for the SIDRA Intersection assessment of level of service based the TfNSW definitions of level of service.

Table 7.2: TfNSW Level of Service Criteria

Level of Service (LoS)	Average Delay per vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Sign
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Near capacity	Near capacity, accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode.
F	Greater than 70	Unsatisfactory, requires additional capacity	Unsatisfactory, requires other control mode or major treatment

7.3 Intersection Capacity Results

A summary of the intersection modelling results of key scenarios is summarised in Table 7.3.

Table 7.3: Summary of Key Modelling Scenario Results

Intersection	Peak	Scenario 1 – Existing Conditions 2017		Scenario 2 – 2027 No Development		Scenario 6 – 2027 with 3,000 dwelling development		Scenario 7 – 2027 with 3,000 dwelling development + Mitigation Measures	
		Average Delay (sec)	Level of Service	Average Delay (sec)	Level of Service	Average Delay (sec)	Level of Service	Average Delay (sec)	Level of Service
Smithfield Road / Edensor Road	AM	64	E	78	F	50	D	51	D
	PM	78	F	135	F	50	D	50	D
Elizabeth Drive / Smithfield Road	AM	33	C	159	F	60	E	53	D
	PM	33	C	36	C	38	C	38	C
Edensor Road / Bonnyrigg Avenue	AM	35	C	52	D	34	C	35	C
	PM	33	C	67	E	53	C	35	C
Bonnyrigg Avenue / Elizabeth Drive	AM	27	B	63	E	73	F	55	D
	PM	24	B	26	B	29	C	29	C
Tarlington Parade / Bonnyrigg Avenue [1]	AM	14	A	16	B	24	B	24	B
	PM	10	A	17	B	16	B	15	B
Elizabeth Drive / Cabramatta Road	AM	40	C	51	D	42	C	35	C
	PM	40	C	46	D	54	D	50	D
Tarlington Parade / Cabramatta Road	AM	22	B	22	B	29	C	29	C
	PM	23	B	25	B	52	D	28	B
Humphries Road / Cabramatta Road	AM	29	C	32	C	30	C	30	C
	PM	71	F	159	F	36	C	36	C
Humphries Road / Edensor Road [1]	AM	18	B	31	C	27	B	27	B
	PM	23	B	86	F	31	C	31	C
Elizabeth Drive / Meadows Road	AM	46	D	48	D	66	E	55	D
	PM	62	E	69	E	44	D	44	D

Source: Bonnyrigg TMAP (GTA, 2018)
[1] Worst movement reported for unsignalized intersection

Intersection modelling for the base 2027 future year (Scenario 2) and ultimate development scenario (3,000 dwellings) (Scenario 6) indicated that some of the intersections would not operate at acceptable levels of service and could experience significant delay. To accommodate the future growth in overall traffic as well as traffic generated by the proposed development, a number of intersection upgrades were proposed in Scenario 7 and are discussed in section 7.5.

7.4 Required Intersection Upgrades

The required intersection upgrades for the Bonnyrigg development site with 3,000 dwellings as identified in the Bonnyrigg TMAP are summarised in Table 7.4.

Table 7.4: Required Intersection Upgrades for the proposed Bonnyrigg Development (3,000 dwellings)

Intersection	Approach	Required Intersection Upgrades
Smithfield Road / Edensor Road	West	Additional through lane. Additional exit lane New left slip lane
	North-east	Additional exit lane on north-east approach
	South-east	Additional dedicated 150m long exit lane for slip lane from Smithfield Rd Additional 150m long through lane Lane shortening for shared left/through lane to 30m
	South-west	Additional through lane
Elizabeth Drive / Smithfield Road	West	Nil
	North	Widening to allow low angle 30m long left slip lane and separation from right turn lane
	East	Nil
Edensor Road / Bonnyrigg Avenue	North-west	Nil
	South-east	Additional 30m long exit lane
	South-west	Modify existing left turn lane into full length Additional 130m long right turn lane Modify exit lanes for two full lane exit lanes
Bonnyrigg Avenue / Elizabeth Drive	North-west	Nil
	North-east	Modification of exterior exit lane to full length lane Modification of left turn lane to full length lane
	South-east	Additional 30m long right turn lane
Tarlington Parade / Bonnyrigg Avenue	West	Additional circulation lane
	North	Additional full-length exit lane Full length left and through approach lane Additional circulation lane
	East	Additional circulation lane
	South	Additional full-length exit lane Full length left and through approach lane Additional circulation lane
Elizabeth Drive / Cabramatta Road	North-west	Extension of left slip lane to 50m from 30m
	East	Additional 30m long exit lane for slip lane from north-west approach Widening to allow low angle 30m long left slip lane and separation from right turn lane
	South-east	Additional 60m long right turn lane

Tarlington Parade / Cabramatta Road	Nil	Nil
Humphries Road / Cabramatta Road	West	Creation of 100m long right turn lane and modification of shared through and right turn lane to through movement only
	North-east	Creation of 100m long right turn lane and modification of shared through and right turn lane to through movement only
	East	Nil
	South	Creation of 150m long right turn lane and modification of shared through and right turn lane to right turn only
Humphries Road / Edensor Road	North-west	Additional 30m long exit lane Additional 30m long left turn lane
	North-east	Additional 30m long exit lane
	South-east	Nil
	South-west	Additional 30m long left turn lane
Elizabeth Drive / Meadows Road.	North-west	Additional 30m long left turn lane
	North	Nil
	South-east	Additional 50m long right turn lane
	South	Nil

Source: Bonnyrigg TMAP (GTA, 2018)

In the TMAP, LAHC acknowledges that the Bonnyrigg development (3,000 dwellings) will contribute to the overall traffic demand in 2027. However, it estimated this traffic would contribute only a small proportion of the future traffic demand as general future traffic volumes are forecast to increase significantly with local and regional developments including the Western Sydney Airport and Western Sydney Employment area.

The TMAP identified intersection upgrades at two intersections where the development has a clear nexus. Potential intersection upgrades include the intersection of Bonnyrigg Avenue – Elizabeth Drive with an additional right turn lane from Elizabeth Drive into Bonnyrigg Avenue and an extension of the left turn lane on Bonnyrigg Avenue into a full lane. Another identified opportunity is the roundabout intersection of Tarlington Parade – Bonnyrigg Avenue. The proposed roadwork improvements would include extra capacity at the roundabout and approaches on Bonnyrigg Avenue by including an additional full lane on the north and south approaches and an additional circulation lane on the roundabout.

The proposed layouts for the two identified intersections are shown in Figure 7.1 and Figure 7.2.

The modelling results from the TMAP with the ultimate development (Scenario 7) with 3,000 dwellings and proposed mitigation measures indicates that the intersections identified for improvement works would operate at LoS D or better.

Figure 7.1: Bonnyrigg Avenue – Elizabeth Drive Traffic Signal

Source: GTA Technical Note (2019)

Figure 7.2: Bonnyrigg Avenue – Tarlington Parade Roundabout

Source: GTA Technical Note (2019)

8 Conclusion

The Transport Planning Partnership (TTPP) has undertaken a traffic and transport assessment for the proposed re-subdivision of Bonnyrigg Stages 12 and 13. Based on discussions presented within this report, the following conclusions are made:

- A Development Application is to be lodged with Fairfield City Council for a 616 dwelling residential subdivision in Bonnyrigg as part of Stages 12 and 13 of the Bonnyrigg Living Communities development which is to provide a total of 3,000 dwellings by Year 2027.
- The new local street would be 11m wide (kerb to kerb) in a 15m road reserve. Swept path analysis shows that B99 vehicles would be able to pass each other at new intersections. Garbage trucks may need to give way at some locations to allow vehicles to pass.
- Road No. 2 a local road would be a one–way loop with a carriageway width of 7m.
- On-street parking is to be allowed. With indented parking, 90 degree parking and 45 degree angle parking to be provided within the development. Parking is to be compliant with AS2890.5.
- Traffic calming is to be implemented along Road No. 1 in the form of speed humps and a raised pedestrian crossing. The raised pedestrian crossing is to provide a safe pedestrian route between the residential development and retail areas as well as connections to Bonnyrigg Plaza.
- The TMAP for the Bonnyrigg development has identified road upgrades that would be required in the future including an upgrade of the intersection of Bonnyrigg Avenue and Elizabeth Drive with an additional right turn lane from Elizabeth Drive into Bonnyrigg Avenue and an extension of the left turn lane on Bonnyrigg Avenue into a full lane. Another identified opportunity is the roundabout intersection of Tarlington Parade and Bonnyrigg Avenue.

Overall, there would be no adverse traffic implications resulting from the proposed development based on the existing road capacity.

Appendix A

Layout Plan

BONNYRIGG LIVING COMMUNITIES PROJECT
DEVELOPMENT APPLICATION - STAGE 12 &13

PROPOSED STORMWATER, LOT & ROAD WORKS

J. WYNDHAM PRINCE
CELEBRATING
40 YEARS
1982 - 2022

A	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	29/09/22
	AMENDMENT	DES	DRN	CKD	APR	DATE

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BONNYRIGG
STAGE 12 & 13
COVER SHEET

PROJECT No: 110808-01

SHEET No: DA001

AZIMUTH: M.G.A. | DATUM: A.H.D. | ORIGIN: | PLAN No: 110808-01-DA001 | A

Plotted: 12 October , 2022 2:30:53 PM File Name: J:\110808 - Bonnyrigg Stages 12 And 13\01 - Stages 12 And 13\CD\DA\110808-01-DA001.dwg

110808-01-DA050

110808-01-DA052

110808-01-DA051

BONNYRIGG PLAZA

BONNYRIGG PUBLIC SCHOOL

BONNYRIGG

BONNYRIGG SQUARE

PROPOSED THRESHOLD

PROPOSED MEDIAN ALTERATIONS - SEE DA050 FOR DETAILS

ROAD 1

AVENUE

STAGE 2

STAGE 1

PROPOSED FLAT TOP SPEED HUMP

ROAD 2

TARLINGTON

STAGE 3

VILLAGE GREEN

PROPOSED PEDESTRIAN CROSSING

TEMPORARY TURNING HEAD FOR STAGE 1 WORKS

PROPOSED FLAT TOP SPEED HUMP

PROPOSED ENTRANCE TO AMENITIES BUILDING

STAGE 3A

ROAD 1

PROPOSED THRESHOLD

PROPOSED TARLINGTON RESERVE

TARLINGTON RESERVE

STAGE 3

PARADE

LEGEND

- PROPOSED SUPER LOT
- PROPOSED ROAD PAVEMENT
- PROPOSED OPEN SPACE
- EXISTING ROAD PAVEMENT TO BE REMOVED
- STAGE BOUNDARY

1:1000 (AT A1)
1:2000 (AT A3)

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METRES

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B	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	12/10/22
A	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	29/09/22
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BONNYRIGG
STAGE 12 & 13
OVERALL SITE & PAVEMENT PLAN

PROJECT No: 110808-01
SHEET No: DA003

AZIMUTH: M.G.A. | DATUM: A.H.D. | ORIGIN: | PLAN No: 110808-01-DA003 | C

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BONNYRIGG PLAZA

BONNYRIGG PUBLIC SCHOOL

BONNYRIGG

BONNYRIGG SQUARE

ROAD 1

AVENUE

STAGE 2

STAGE 1

TEMPORARY LOW LEVEL RETAINING WALL & BARRIER KERB FOR STAGE 2 WORKS

ROAD 2

TARLINGTON

STAGE 3

TEMPORARY DRIVEWAY ACCESS TO COWDREY WAY FOR STAGE 3A WORKS. ACCESS FROM BARRACLOUGH WAY TO BE CLOSED FOR STAGE 3A.

VILLAGE GREEN

TEMPORARY TURNING HEAD FOR STAGE 1 WORKS

STAGE 3A

ROAD 1

PROPOSED TARLINGTON RESERVE

TARLINGTON RESERVE

PARADE

STAGE 3

LEGEND

- STAGE BOUNDARY
- STAGE 1 WORKS
- STAGE 2 WORKS
- STAGE 3 WORKS
- STAGE 3A WORKS

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100

METRES

C	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	13/10/22
B	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	12/10/22
A	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	29/09/22
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BONNYRIGG STAGE 12 & 13 STAGING PLAN

PROJECT No: 110808-01
SHEET No: DA004

AZIMUTH: M.G.A. | DATUM: A.H.D. | ORIGIN: | PLAN No: 110808-01-DA004 | C

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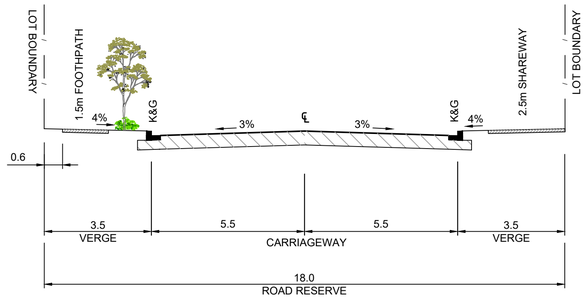
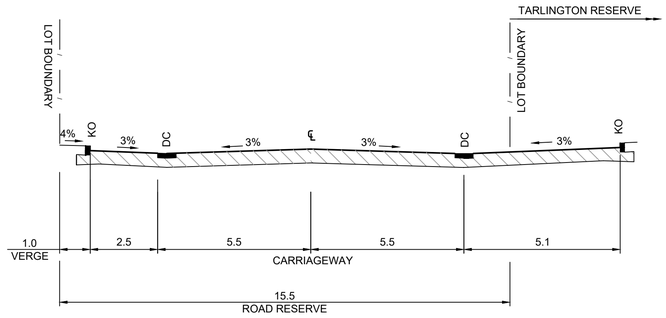
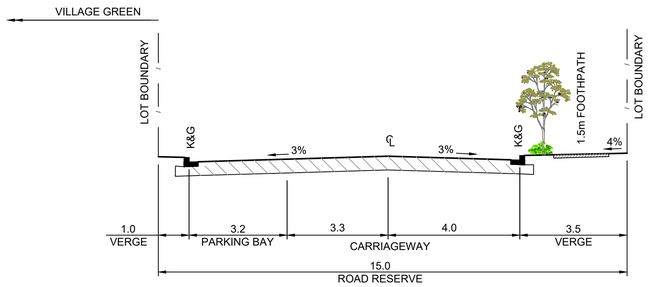


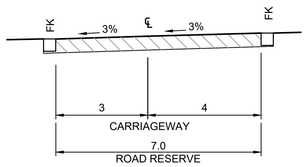
TYPICAL CROSS SECTION
ROAD 1 (CH0-CH160, CH262-CH439)
SCALE 1:100 NATURAL



TYPICAL CROSS SECTION
ROAD 1 (CH160-CH262)
SCALE 1:100 NATURAL



TYPICAL CROSS SECTION
ROAD 2 (CH0-CH106, CH162-CH240)
SCALE 1:100 NATURAL



TYPICAL CROSS SECTION
ROAD 2 (CH106-CH162)
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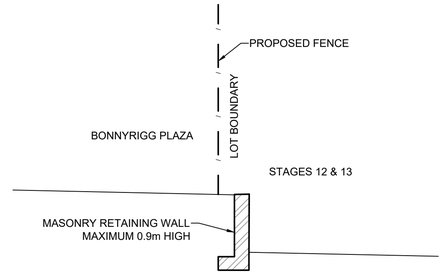

TYPICAL MASONRY RETAINING WALL
N.T.S.

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1:2000 (AT A3)

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METRES

A	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	29/09/22
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BONNYRIGG
STAGE 12 & 13
TYPICAL SECTIONS

PROJECT No: 110808-01
SHEET No: DA005

AZIMUTH: M.G.A. | DATUM: A.H.D. | ORIGIN: | PLAN No: 110808-01-DA005 | A

Plotted: 29 September , 2022 9:31:19 AM File Name: J:\110808 - Bonnyrigg Stages 12 And 13\01 - Stages 12 And 13\CDD\DA\110808-01-DA005.dwg

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BONNYRIGG
STAGE 12 & 13
CUT & FILL PLAN

PROJECT No: 110808-01
SHEET No: DA010

AZIMUTH: M.G.A. | DATUM: A.H.D. | ORIGIN: | PLAN No: 110808-01-DA010 | B

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NOTES
1. ALL NEW WORKS TO MAKE SMOOTH CONNECTION TO EXISTING KERB, PAVEMENT, & FOOTPATH.
2. ALL KERB RETURNS ARE 7.5M RADII.
3. TREES REMOVED ON THIS PLAN FOR CLARITY. REFER TO DA600 FOR TREE RETENTION PLAN & ARBORISTS REPORT.
4. ALL EXISTING STORMWATER PITS & PIPES THAT DO NOT FORM PART OF THE STORMWATER SYSTEM ARE TO BE DEMOLISHED & DISPOSED OF.

LEGEND
- AREA OF MEDIAN TO BE EXTENDED
- AREA OF MEDIAN TO BE REMOVED

BONNYRIGG PLAZA
BONNYRIGG AVE
BONNYRIGG SQUARE
1004
ROAD 1
ROAD 2
1
2
EXISTING BONNYRIGG PLAZA STORMWATER DRAINAGE
EXISTING SECTION OF CORLETTE WAY TO REMAIN FOR STAGE 1 WORKS. MAKE SMOOTH CONNECTION WITH ROAD 1
PROVIDE STUB FOR FUTURE CONNECTION
PROPOSED MASONRY RETAINING WALL MAX. 0.9m HIGH
PROPOSED FLAT TOP SPEED HUMP
PROVIDE 3m WIDE GAP IN MEDIAN AND NEW PRAM RAMPS FOR PEDESTRIAN ACCESS
PROVIDE 2 NEW INDENTED PARKING BAYS IN BONNYRIGG AVENUE
REFER TO DRAWING DA052 FOR CONTINUATION
REFER TO DRAWING DA051 FOR CONTINUATION

1:500 (AT A1)
1:1000 (AT A3)
10 0 10 20 30 40 50
METRES

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A	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	29/09/22
	AMENDMENT	DES	DRN	CKD	APR	DATE

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BONNYRIGG
STAGE 12 & 13
ENGINEERING PLAN
SHEET 1

PROJECT No: 110808-01
SHEET No: DA050

AZIMUTH: M.G.A. | DATUM: A.H.D. | ORIGIN: | PLAN No: 110808-01-DA050 | B

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REFER TO DRAWING DA050 FOR CONTINUATION

REFER TO DRAWING DA052 FOR CONTINUATION

ROAD 1

ROAD 2

RETAINING WALL MAX. 0.9m HIGH

STUB FOR FUTURE CONNECTION

30° ANGLE PARKING

90° ANGLE PARKING (TYPICAL)

VILLAGE GREEN

1005

1006

PROPOSED PEDESTRIAN CROSSING TO AS1742

PROPOSED TARLINGTON RESERVE

TARLINGTON RESERVE

PROPOSED VORTEX STYLE GPT

PROPOSED FOOTPATH. MAKE SMOOTH CONNECTION TO EXISTING

TEMPORARY TURNING HEAD FOR STAGE 1 WORKS ONLY

NEW ACCESS TO MAINTENANCE BUILDING. MAKE SMOOTH CONNECTION TO EXISTING PAVEMENT

EXISTING AMENITIES BUILDING

NEW STORMWATER PIPE UNDER EXISTING WALL. CONNECT TO EXISTING PIT

SEPARATE STORMWATER LINE FOR UPSTREAM CATCHMENT

CONNECT TO EXISTING PIT

EXISTING 1200Ø PIPE

NOTES
1. ALL NEW WORKS TO MAKE SMOOTH CONNECTION TO EXISTING KERB, PAVEMENT, & FOOTPATH.
2. ALL KERB RETURNS ARE 7.5M RADII.
3. TREES REMOVED ON THIS PLAN FOR CLARITY. REFER TO DA600 FOR TREE RETENTION PLAN & ARBORISTS REPORT.
4. ALL EXISTING STORMWATER PITS & PIPES THAT DO NOT FORM PART OF THE STORMWATER SYSTEM ARE TO BE DEMOLISHED & DISPOSED OF.

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
B	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	12/10/22
A	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	29/09/22

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BONNYRIGG
STAGE 12 & 13
ENGINEERING PLAN
SHEET 2

PROJECT No: 110808-01

SHEET No: DA051

AZIMUTH: M.G.A. | DATUM: A.H.D. | ORIGIN: | PLAN No: 110808-01-DA051 | B

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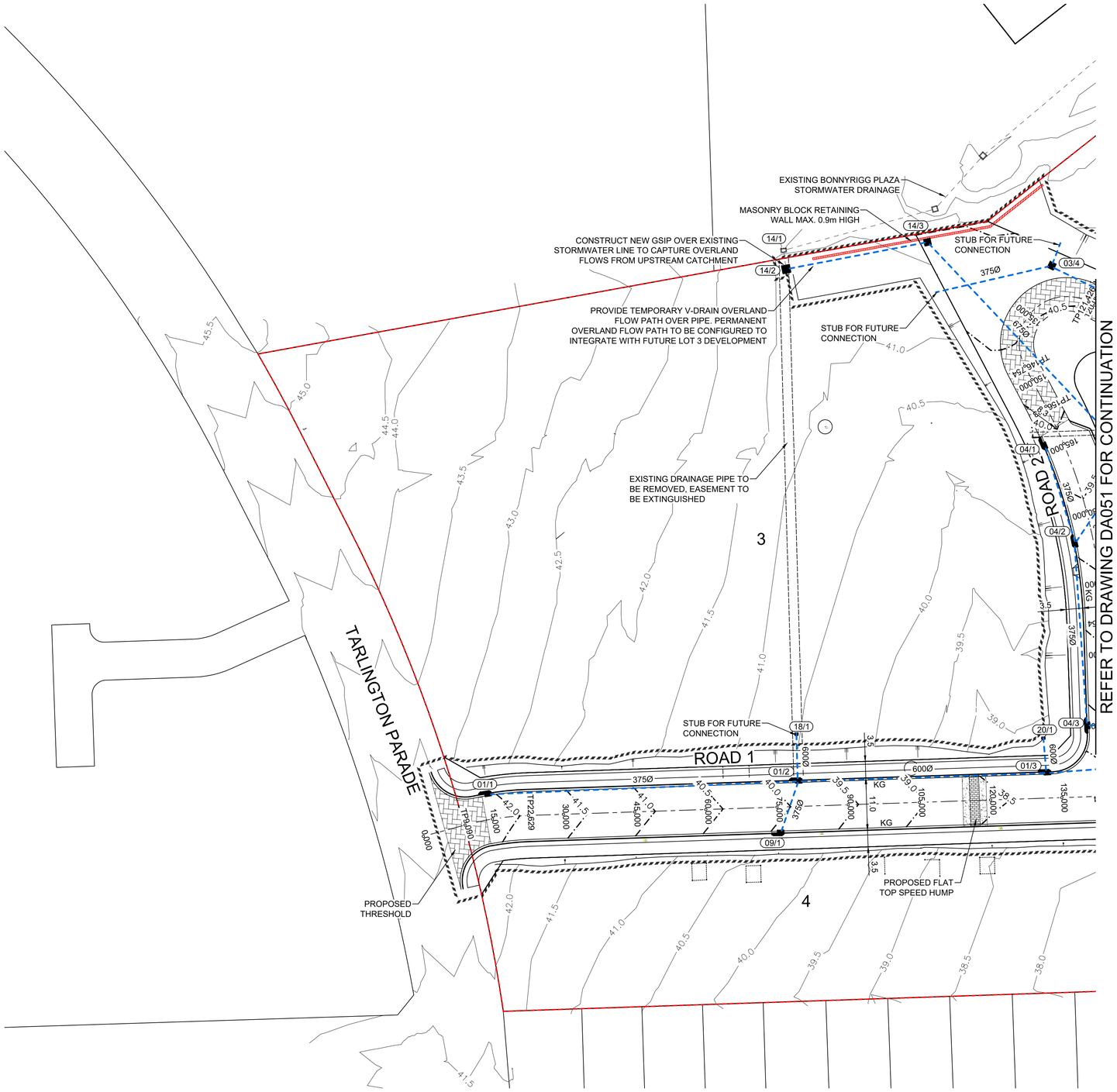


NOTES
1. ALL NEW WORKS TO MAKE SMOOTH CONNECTION TO EXISTING KERB, PAVEMENT, & FOOTPATH.
2. ALL KERB RETURNS ARE 7.5M RADII.
3. TREES REMOVED ON THIS PLAN FOR CLARITY. REFER TO DA600 FOR TREE RETENTION PLAN & ARBORISTS REPORT.
4. ALL EXISTING STORMWATER PITS & PIPES THAT DO NOT FORM PART OF THE STORMWATER SYSTEM ARE TO BE DEMOLISHED & DISPOSED OF.

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

A	ISSUED FOR DA APPROVAL	DG	JM	JB	MS	29/09/22
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

CLIENT: NSW GOVERNMENT Land & Housing Corporation

STATUS: ISSUE FOR DA APPROVAL
NOT FOR CONSTRUCTION
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

BONNYRIGG
STAGE 12 & 13
ENGINEERING PLAN
SHEET 3

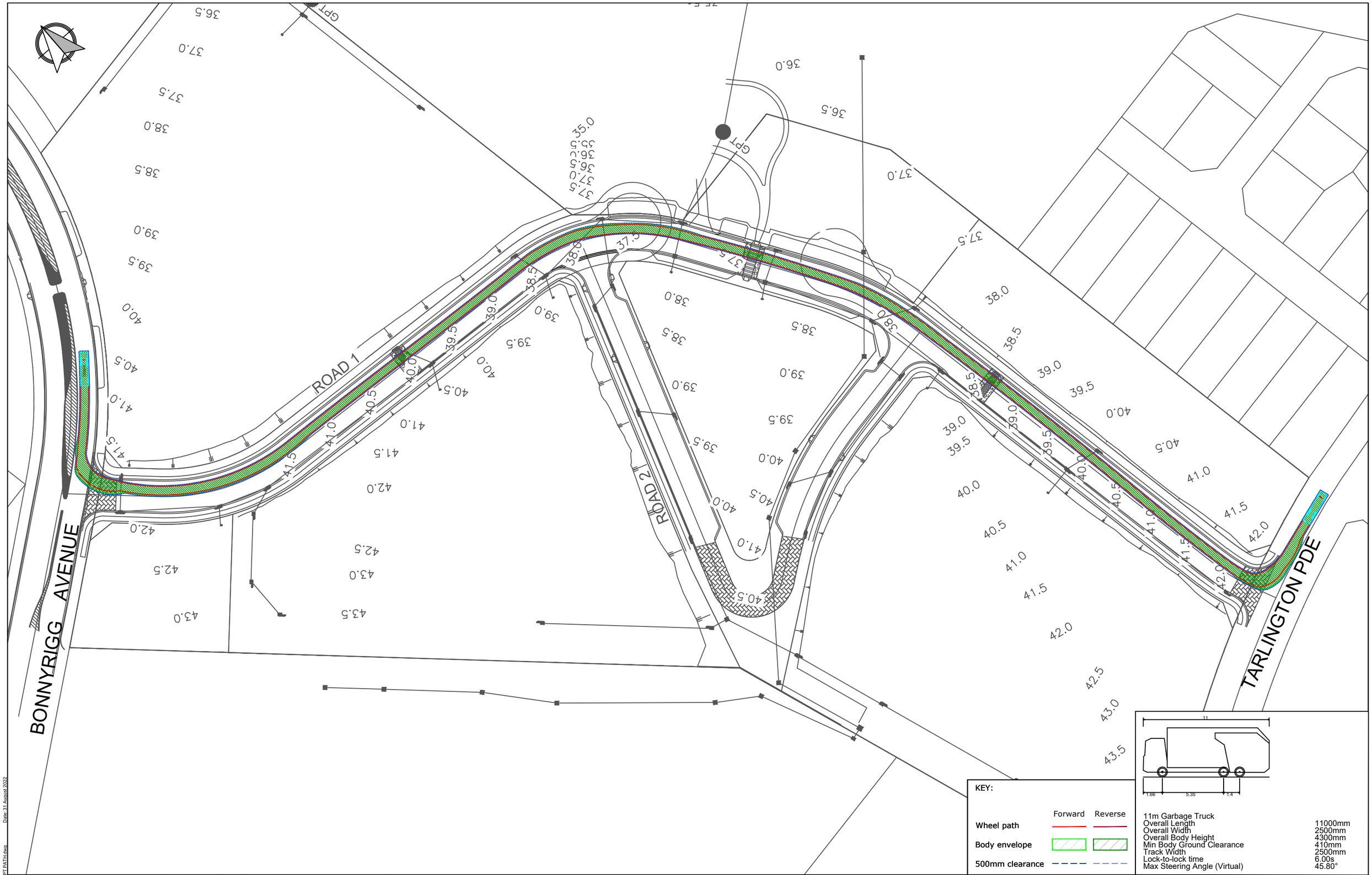
PROJECT No: 110808-01
SHEET No: DA052

AZIMUTH: M.G.A. | DATUM: A.H.D. | ORIGIN: | PLAN No: 110808-01-DA052 | A

Plotted: 12 October , 2022 2:23:53 PM File Name: J:\110808 - Bonnyrigg Stages 12 And 13\01 - Stages 12 And 13\CD\DA\110808-01-DA052.dwg

Appendix B

Swept Path Analysis



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HT	SR	SR	31/08/22

ttpp transport planning

PROJECT

BONNYRIGG STAGES 12 & 13

TITLE

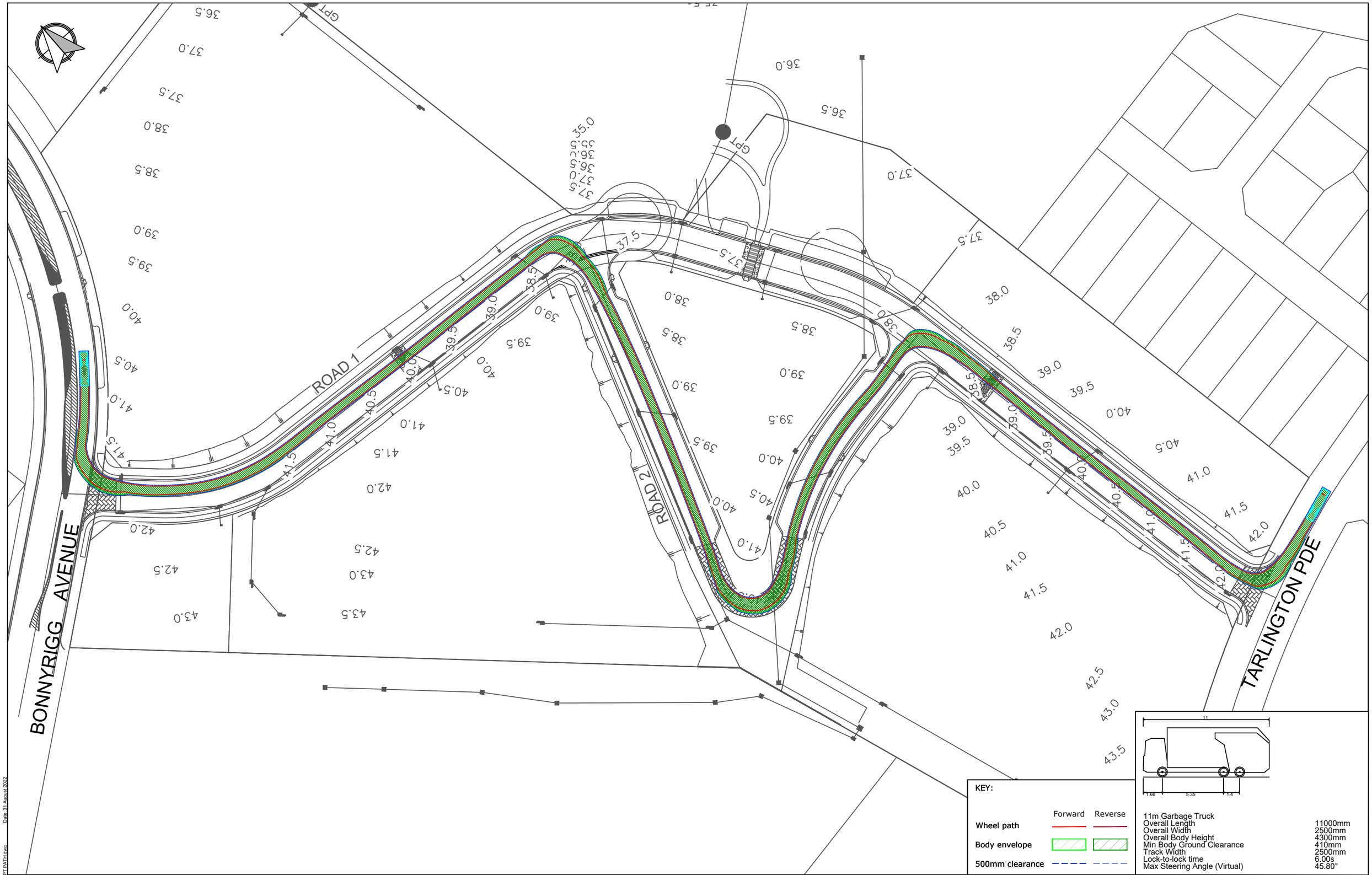
SWEPT PATH ANALYSIS - ROAD 1
11m GARBAGE TRUCK

DWG No. 22002CAD003 FIGURE 1

DATE STAMP 31 AUGUST 2022

PROJECT No.	SCALE	REV.
22002	1:1100 @A3	A

Filename: 22002CAD003-220831-SWEPT PATH.dwg Date: 31 August 2022



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HT	SR	SR	31/08/22

ttpp transport planning

PROJECT

BONNYRIGG STAGES 12 & 13

TITLE

SWEPT PATH ANALYSIS - ROAD 2
11m GARBAGE TRUCK

DWG No. 22002CAD003 FIGURE 2

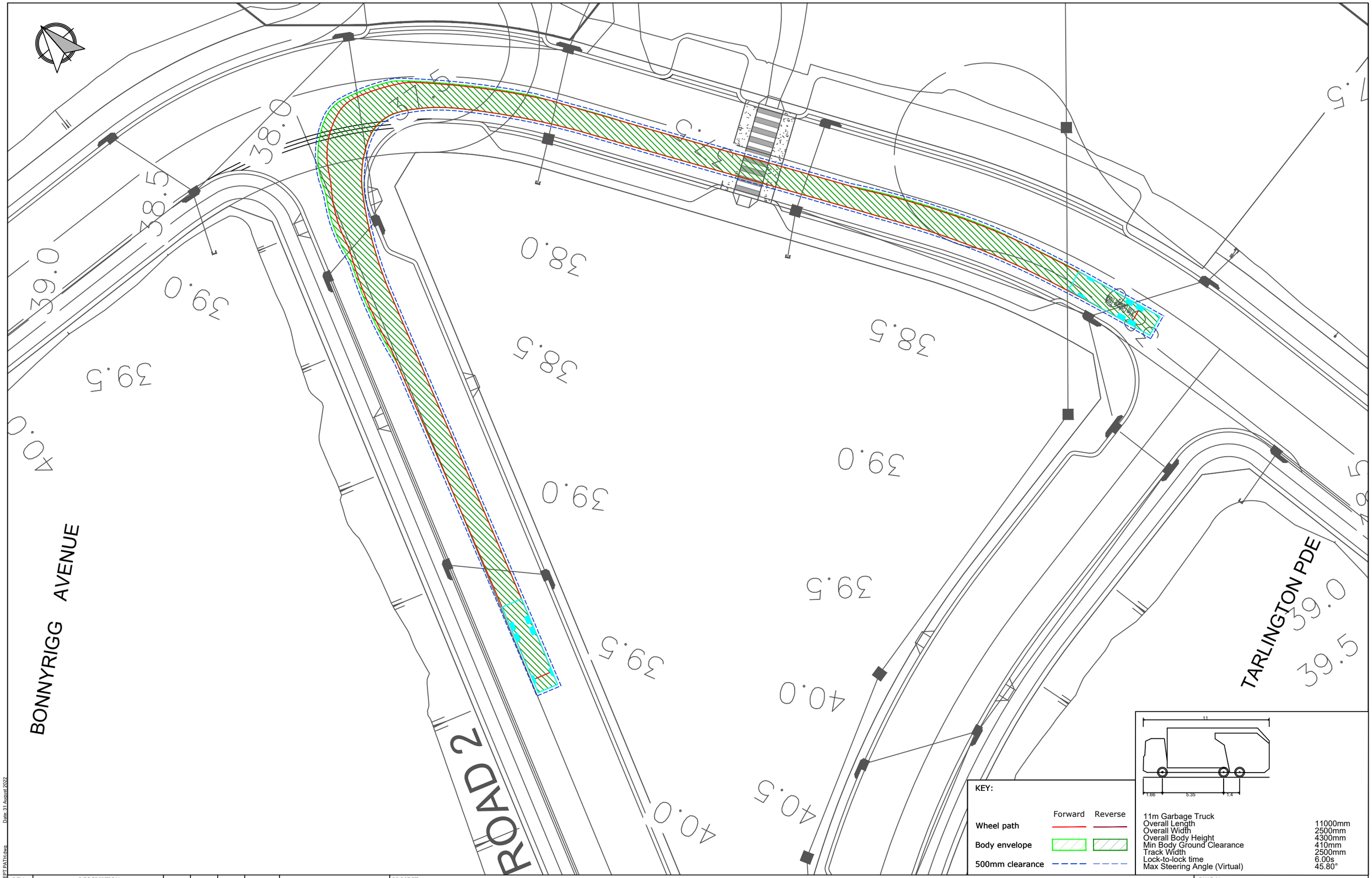
DATE STAMP 31 AUGUST 2022

PROJECT No. 22002

SCALE 1:1100 @A3

REV. A

Filename: 22002CAD003-220831-SWEPT PATH.dwg Date: 31 August 2022



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HT	SR	SR	31/08/22

ttpp transport planning

PROJECT
BONNYRIGG STAGES 12 & 13

TITLE
SWEPT PATH ANALYSIS - ROAD 2
11m GARBAGE TRUCK

DWG No. 22002CAD003 FIGURE 3

DATE STAMP 31 AUGUST 2022

PROJECT No.	SCALE	REV.
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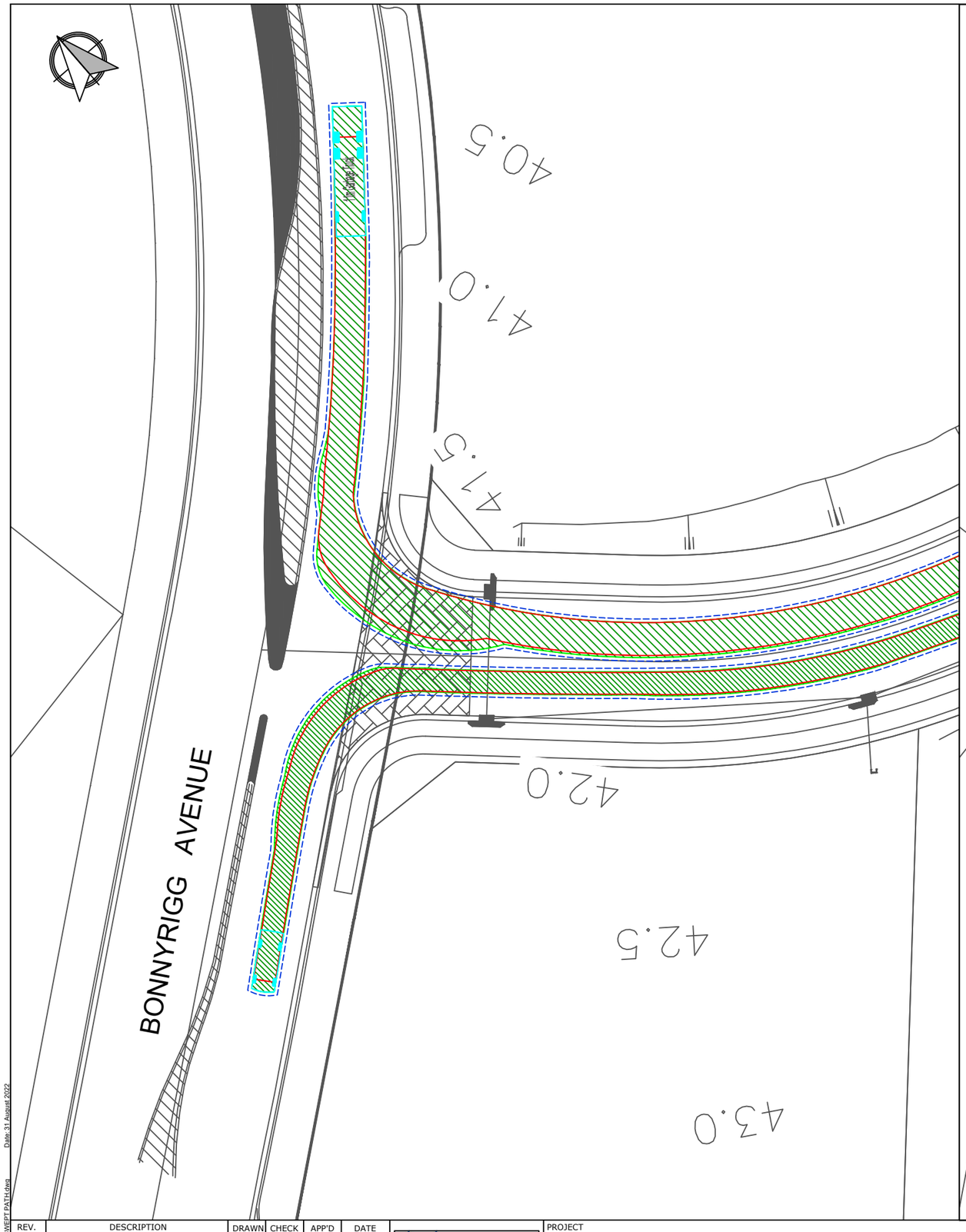
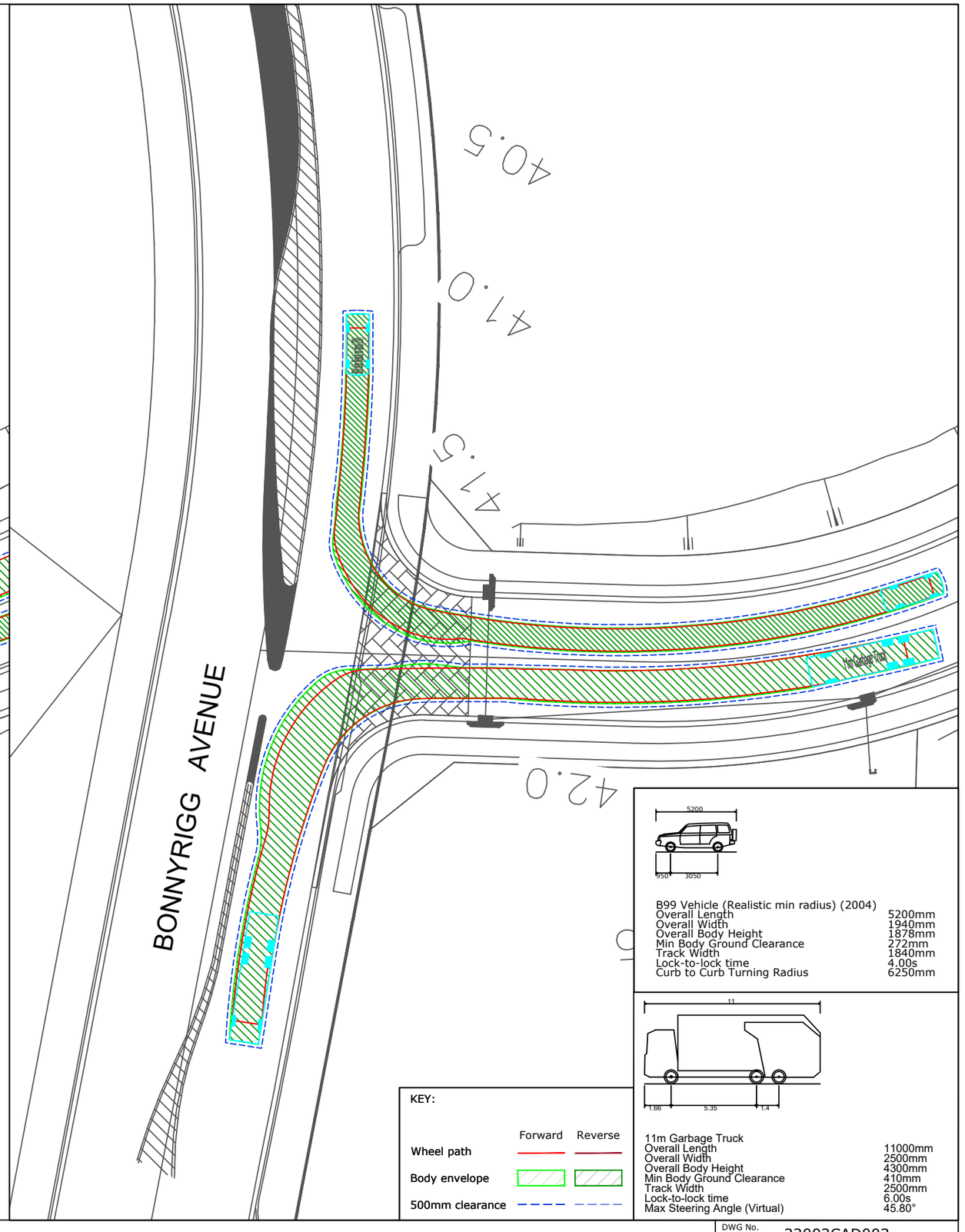
Filename: 22002CAD003-220831-SWEPT PATH.dwg Date: 31 August 2022





B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

11m Garbage Truck

Overall Length	11000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	410mm
Track Width	2500mm
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	45.80°

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HT	SR	SR	31/08/22

ttpp transport planning

PROJECT: BONNYRIGG STAGES 12 & 13

TITLE: SWEPT PATH ANALYSIS - BONNYRIGG AVENUE
11m WASTE TRUCK & AS2890.1 5.2m B99 VEHICLE

DWG No. 22002CAD003 FIGURE 4

DATE STAMP: 31 AUGUST 2022

PROJECT No.	SCALE	REV.
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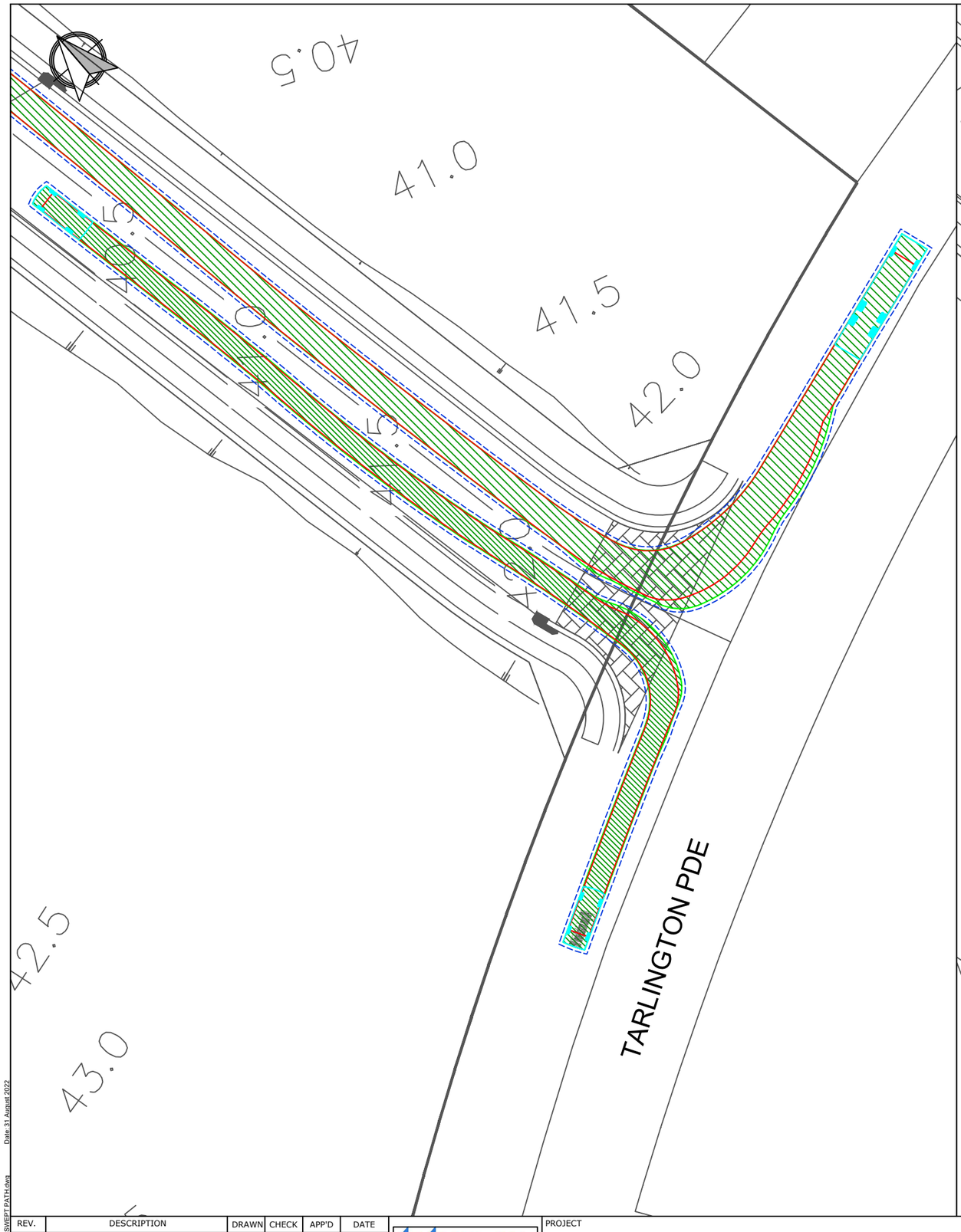
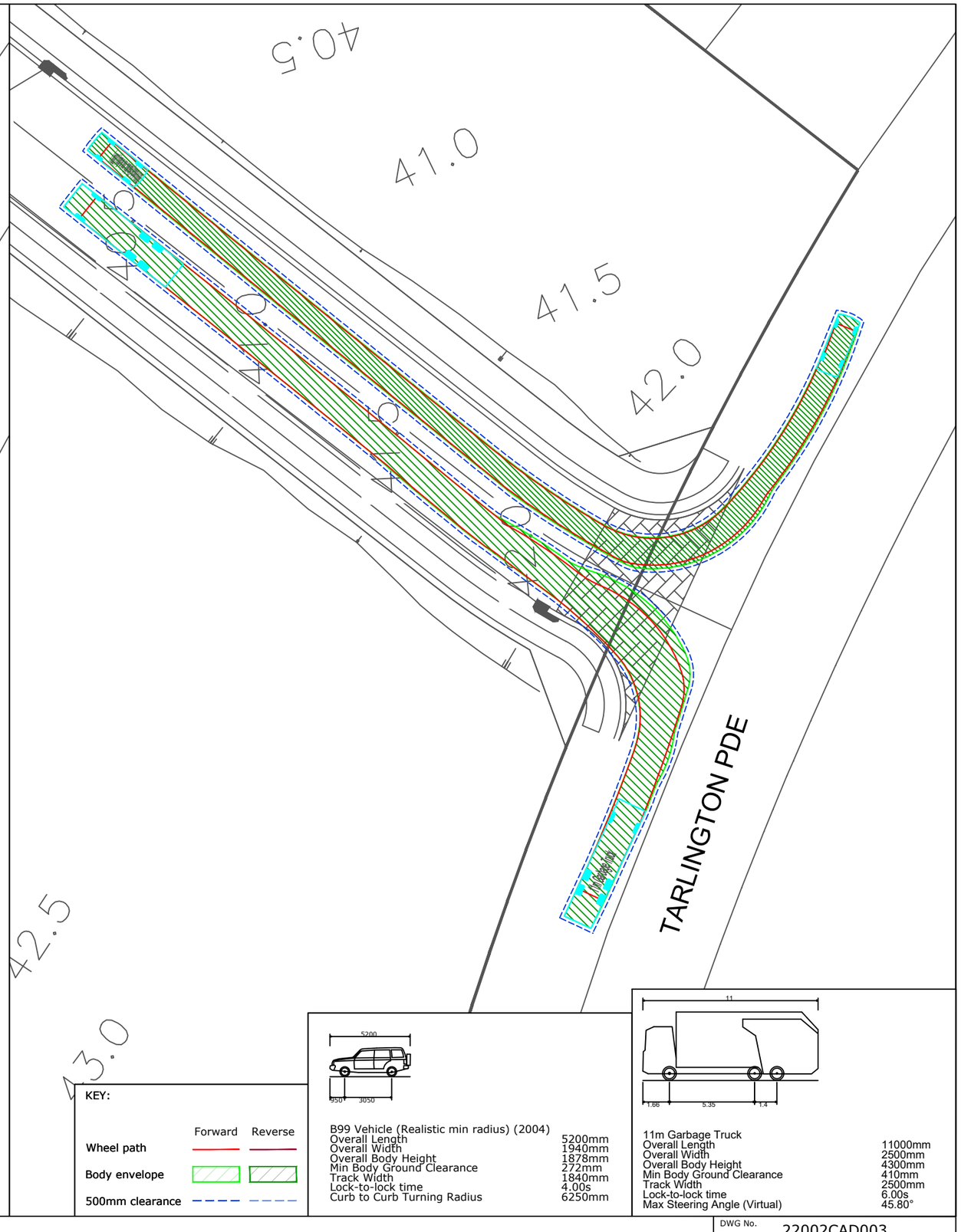
Filename: 22002CAD003-220831-SWEPT PATH.dwg Date: 31 August 2022





KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		

B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

11m Garbage Truck	
Overall Length	11000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	410mm
Track Width	2500mm
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	45.80°

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HT	SR	SR	31/08/22

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PROJECT

BONNYRIGG STAGES 12 & 13

TITLE

SWEPT PATH ANALYSIS - TARLINGTON PARADE
11m WASTE TRUCK & AS2890.1 5.2m B99 VEHICLE

DWG No. 22002CAD003
FIGURE 5

DATE STAMP 31 AUGUST 2022

PROJECT No. 22002 | SCALE 1:400 @A3 | REV. A

Filename: 22002CAD003-220831-SWEPT PATH.dwg Date: 31 August 2022

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