

PROPOSED RURAL INDUSTRY DEVELOPMENT

1799a Great South Road | Bombay | Auckland

Transportation Assessment Report

Prepared For

Vernon Developments Limited

Date of Issue

16 December 2024

team


Executive Summary

This executive summary provides an overview of the traffic engineering assessment of the proposal to operate a rural contractors depot (rural industry) from the site. The activity will utilise the existing metalled hardstand for the parking and storage of trucks and machinery.

There are two businesses operating from the site and the entrance and access have been upgraded to accommodate large heavy vehicles. A consent application has recently been lodged for an activity in the northwest corner of the property whilst this activity will occupy the central area.

The configuration of the existing Common Accessway is acceptable and will accommodate all vehicular movements.

The property is in a rural environment and there are no pedestrian facilities on Great South Road, hence pedestrian movements around the site are expected from staff who drive to the site.

The rubbish, servicing, loading, and fire appliance access arrangements have been assessed and will be appropriate for the intended use.

The traffic generated by the development is expected to be low and no operational issues are expected within the site or adjacent roads.

In summary, the proposed development is considered acceptable from a traffic engineering perspective. It meets the requirements and standards for parking, accessways, cycle facilities, intersections, pedestrian connections, and service access.

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Quality Assurance & Version Management

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1. Introduction

This report examines and describes the traffic and parking effects of a proposal to redevelop a portion of the existing property at 1799a Great South Road in Bombay. Reporting includes an assessment of the proposal against the Auckland Unitary Plan (AUP) Chapter E27 rules and requirements.

The legal description of the site is Lot 6 DP 156089, with a total land area of approximately 8.673 ha. According to the AUP zoning maps, the site is located within a Rural – Mixed Rural Zone.

The location of the site relative to the surrounding road network and neighbouring properties is shown in Figures 1 and 2 below.

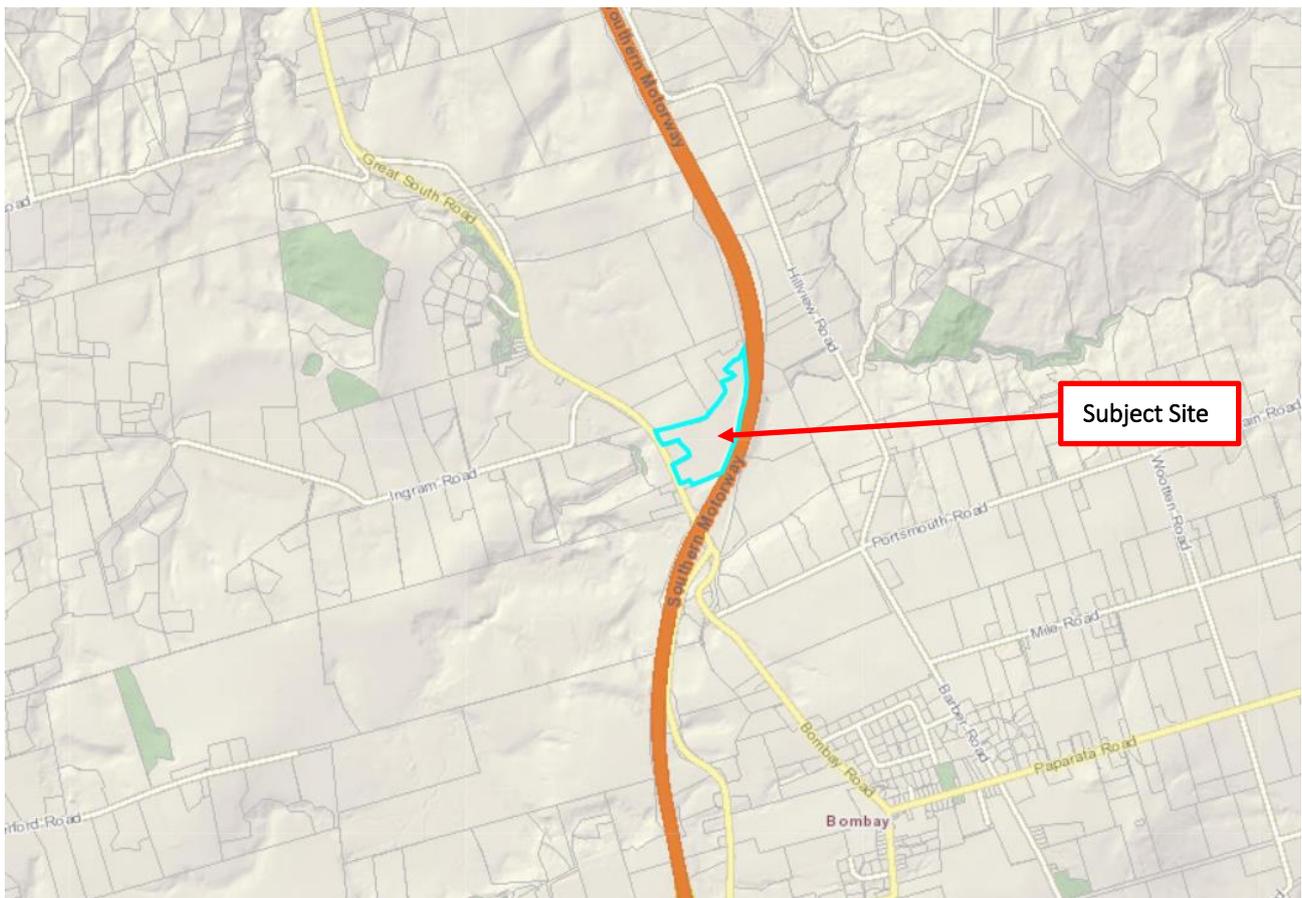


Figure 1: Subject site in relation to surrounding road network

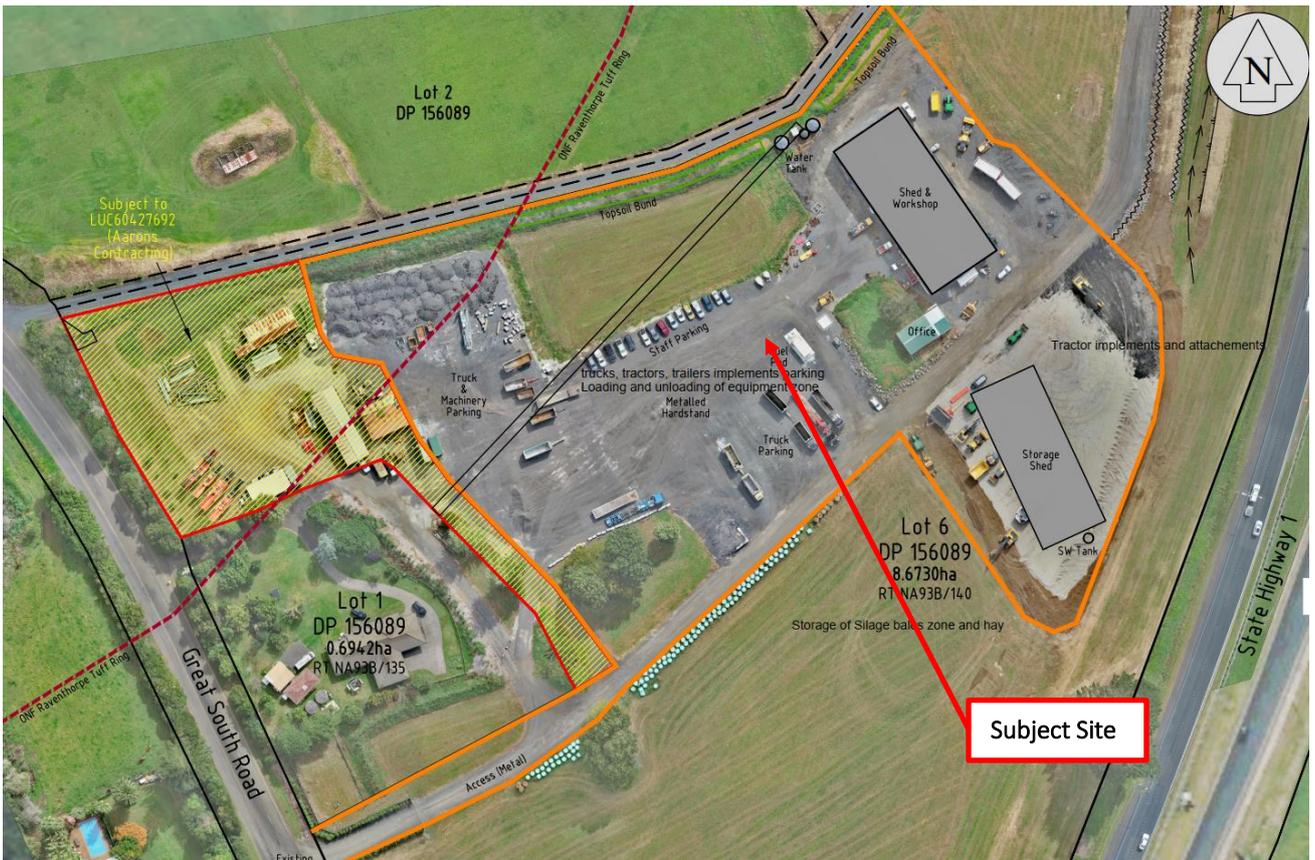


Figure 2: Subject site in relation to neighbouring properties

Figure 3 below shows the site within the AUP zoning map.



Figure 3: Subject site within AUP zoning map

2. Existing Situation

Great South Road generally runs in a north–south direction and the subject site is located on the eastern side of Great South Road.

The property's entrance has recently been upgraded to accommodate large heavy vehicles and the access has also been designed to carry large trucks.

A consent application has recently been lodged to operate a mulching activity from the northwestern portion of the site. The activities are being carried out from the site at present and this application is to formalise the operation and improve amenities on the site.

2.1 Roading Characteristics

Great South Road is classified as a Collector Road in the Auckland Council GIS system. Great South Road adjacent to the property generally runs in a north-south direction and the property is located between the motorway and Great South Road.

The road reserve is approximately 21.4 metres wide whilst the carriageway on Great South Road is circa 11.4 metres wide and consists of one lane in the northbound direction and two lanes in the southbound direction. The lanes are separated by double yellow no overtaking lines. There are edge lines marked along the sides of the seal. Parking is permitted on both sides of Great South Road, although this road is within a rural environment with no kerb or channel and parking can be dangerous.

The seal width consists of two traffic lanes that are circa 3.5 metres wide and there are sealed shoulders on both sides of the road that are approximately 0.5 metres wide.

This section of Great South Road is relatively straight and flat with a sweeping horizontal curve north of the entrance.

2.2 Traffic Counts

Auckland Transport has copies of traffic surveys carried out throughout the region. There have been no traffic surveys undertaken on Great South Road.

The Mobile Road App is an alternative system that contains data showing the anticipated volume of vehicles that Auckland Transport believes, various roads around the region to be carrying. The app was consulted to see the volume of vehicles using Great South Road and AT expected there to be 1,773 vehicles per day.

According to ATCOP Chapter 4, Collector Roads are expected to carry traffic volumes in excess of 10,000 vehicles per day. Great South Road typically has one lane in each direction and the existing volumes are within the capacity of the road.

The current volume is appropriate for the environment in the vicinity of the subject site and the carriageway is expected to be able to cater for any additional traffic generated by the activities from this development.

2.3 Speed Environment

Great South Road has a posted speed limit of 80 km/h. Where no speed measurements are available the Guidelines for Visibility at Driveway RTS 6 recommends that the 85th percentile speed is calculated by adding 15 per cent to the posted speed limit. Where the posted speed limit is 80 Km/h, the calculated 85th percentile speed is 92.0km/h.

An 85th percentile vehicle speed of 92 km/h will be used for visibility calculations.

2.4 Crash History

A study has been made of the crash record maintained by NZTA for the full five-year period 2019 to 2023 inclusive. Also included in the search were the crashes that have been processed and were on file for 2024.

The crash search area covered the section of Great South Road extending 200 metres on each side of the entrance.

There were no reported crashes within the searched area and period.

On this basis, the crash record indicates that there are no inherent safety or operational concerns with the layout of Great South Road in the vicinity of the subject site.

2.5 Passenger Transport Amenities

There are no bus services near the property.

There are very limited public transport options for staff, and it is expected that all staff will drive to the site.

2.6 Bicycle Amenities

There are no cycling facilities near the site, however, local roads are considered safe and appropriate for cyclists to use, and the topography of the area is relatively flat, and locals will be able to cycle if they so desire. However, given Great South Road has limited sealed shoulder width, it is unlikely that staff would cycle to the site.

2.7 Walking

The Austroads "Guide to Traffic Engineering Practice Part 13 – Pedestrians" indicates that the practical walking distance for non-recreational walking trips is in the order of 1.5 km. The primary walking catchment area for pedestrians has therefore been based on a 1.5 km radius of the centre of the site as shown in the figure below.

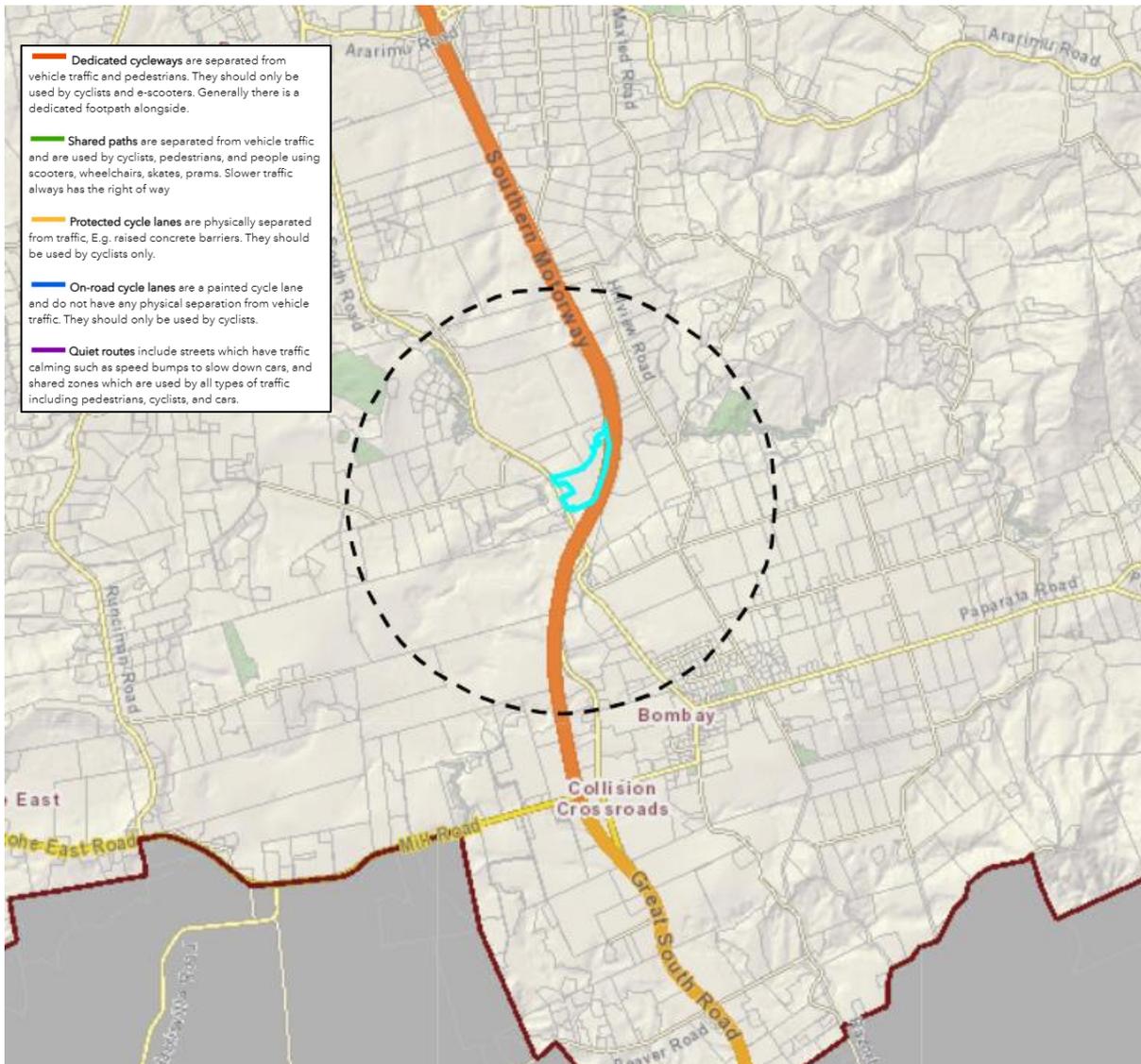


Figure 4: Walking Catchment.

Based on the above and a starting point of the entrance to the property, pedestrians do not have any areas of interest that they could potentially walk to.

On this basis, as there are no pedestrian facilities near the property, it is most unlikely that there will be any pedestrian activity to or from the site.

3. Proposed Situation

The proposal seeks to redevelop the middle portion of the existing property at 1799a Great South Road in Bombay. Two existing farm sheds and the metalled hardstand area are proposed to be used to operate a rural contractors depot (rural industry) from the site as shown in Figure 5. The northern shed will be used as a workshop for repairs and maintenance of vehicles as well as machinery. The southern shed will be used for storage.

The company provides a range of earthmoving, land cultivation and cartage services to the rural production sector. The activities are being carried out from the site and this application is to formalise the operations.

There are expected to be a maximum of 30 staff operating from the site and 25 of those staff will leave the site to work on external jobs. The remaining five staff will work on-site either in the office or carrying out repairs and maintenance.

The site will operate between the hours of 5.30 am and 6.30 pm Monday to Friday and 5.30 am to 3.00 pm on Saturday.

This option has been progressed and a plan of the proposal is shown in Figure 5.



Figure 5: Proposed layout of the site

3.1 Parking

3.1.1 Parking Requirements

The site is located within a Rural – Mixed Rural Zone, and the parking requirements for the site are defined in Table E27.6.2.4 ‘Parking rates – area 2’ of the AUP. The relevant parking rates defined in the AUP are summarised in the following table.

Table 1: Table E27.6.2.4 Parking rates – area 2

Item	Activity	Applies to zones and locations specified in Standard E27.6.2(4)	
		Minimum rate	Maximum rate
(T80)	All activities where located in rural zones	No minimum	No maximum

There are no formalised parking spaces for cars or trucks, although it is evident on the aerial photograph that there is more than adequate room for numerous parking spaces. The whole yard will have a metalled finish which is not able to be marked. There is room to provide a car park for each staff member plus a few additional parks for deliveries. The yard is not open to the public so unexpected visitors are not anticipated.

The company has 25 trucks of varying sizes that will be parked on-site overnight. These spaces have not been marked on the ground as it is not practical to do so, but the staff are regular users and have a system in place that they follow, and each driver knows where he should park his vehicle.

The number of accessible car parks that should be provided is determined by the number of car parking spaces provided. Where car parking is provided, accessibility spaces shall be provided in accordance with the following table.

Table 2: NZS 4121 – Accessible car parking requirements

Total number of car parks	Number of accessible car park spaces
1 – 20	Not less than 1
21 – 50	Not less than 2
For every additional 50 car parks or part of a carpark	Not less than 1

Technically, two accessible car parking spaces should be provided. It is not practical to mark these spaces, however, as the site is only used by staff, it is unlikely that an accessibility space would be required for this type of activity. If an accessibility space was required, management would provide a space on site in a convenient location.

Overall, the parking provision complies with the above AUP requirements and is acceptable from a traffic engineering perspective.

3.1.2 Manoeuvring

The proposal includes the provision of at least 30 car parking spaces plus 25 truck parking spaces. None of the spaces are marked and the staff typically park against the northern boundary, and the trucks are parked around the site so they are easily accessible. The staff are all regular users and very familiar with the site layout and park in convenient locations so they can depart in their trucks in the morning and return in the evening. It is expected that all parking spaces and the manoeuvring aisles will exceed the parking and manoeuvring requirements under the AUPOP.

On this basis, the dimensional characteristics of the proposed parking spaces exceed the minimum requirements of the AUPOP, are suitable for the intended use and are acceptable from a traffic engineering perspective.

3.1.3 Bicycle Parking

The provision of bicycle parking for such a commercial development in a rural area will be of little benefit as it is unlikely that staff would cycle to the property.

3.1.4 Gradients of Car Parks

The gradient across car parking areas is required to be at a grade of 1:20 or less. Parking covers a large portion of the site and the area is metalled. The site is relatively level and the grades across the parking area are expected to be less than 1:20.

3.1.5 Loading Requirements

The loading space requirements for developments are covered in Table E27.6.2.7. A loading space is not required for a rural development as it is expected that the site can accommodate heavy vehicles. The property will have parking for at least 25 heavy vehicles.

3.1.6 Lighting Requirements

Under E27.6.3.7 where 10 or more car parking spaces are provided a lighting plan must be provided. The parking and manoeuvring areas must be adequately lit during use in a manner that complies with the rules in Section E24 Lighting. The provision of a lighting plan is required for this development and one will be provided.

3.2 Traffic Generation

The site has two businesses operating from the premises at present. Figure 5 shows Aarons Contracting operates from the yellow hatched area. The traffic report prepared by TEAM dated 26th March 2024 estimated that there would be 12 car trips per day plus six heavy vehicle movements per day.

Vernon's Developments Limited is estimated to generate 30 cars driven by staff per day. This equates to 60 vehicular trips per day. There are 25 trucks on site and each truck will make an exit trip plus a return trip per day. There are expected to be 50 heavy vehicle trips per day.

In addition, there is expected to be less than one trip per day made for the collection of rubbish, plus the delivery of oil and machine parts.

The two companies will generate a total of 72 car trips per day plus 57 heavy vehicle movements per day. The majority of the trips will be made between 5.30 am and 7.00 am, and 5.00 pm and 6.30 pm. The busy periods fall outside the peak hours for commuter trips and therefore will have little impact on the operation of the road network.

This level of traffic generation is considered to be of little significance from an operational and capacity perspective. The additional volume on Great South Road is unlikely to be noticed on the road network.

The traffic generation of the proposed development is acceptable from a traffic engineering perspective.

3.3 Site Access

3.3.1 Vehicle Crossing Arrangement

It is proposed to utilise the existing vehicle crossing near the middle of the front boundary. This vehicle crossing is circa 7.5m wide at the boundary and has been designed to accommodate a B Train and an 85th percentile car entering and leaving at the same time. Tracking plans are included in Appendix B.

The dimensional requirements for vehicle crossing widths are defined in Table E27.6.4.3.2 of the AUP. These requirements are shown in the following table.

Table 3: Table E27.6.4.3.2 Vehicle crossing and vehicle access widths

Item	Location of site frontage	Number of parking spaces served	Minimum width of crossing at site boundary	Maximum width of crossing at site boundary
(T156)	Rural zones		3.0m	6.0m*

*Provided that a maximum width of 9.0m is permitted where the crossing needs to accommodate the tracking path of a large heavy vehicle.

The existing vehicle crossing was recently constructed, currently functions safely and efficiently, and complies with the Unitary Plan requirements. The crossing will be sealed.

Overall, the proposed vehicle crossing arrangement is suitable for the intended use and acceptable from a traffic engineering perspective.

3.3.2 Visibility

The available visibility has been assessed in both directions along Great South Road from the location of the existing vehicle crossing.

The visibility in both directions was assessed as in excess of 220 metres.

The visibility at an intersection on a road is often measured using the Safe Intersection Sight Distance (SISD). Where the 85th percentile speed is 92km/h, the SISD is 210 metres. The visibility requirement at a vehicle crossing is usually considered by using the Safe Stopping Distance (SSD) measurement. The SSD where the 85th percentile speed is 92km/h is 133 metres.

The visibility in both directions exceeds the SISD standard and is appropriate in this rural environment. Overall, the available visibility from the existing vehicle crossing location is acceptable from a traffic engineering perspective.

3.3.3 Vehicle Access

The AUP requirements for access widths are related to the proposed number of car parking spaces on a site and in this case falls under Rule T156 of Table E27.6.4.3.2.

There is no minimum formed access width for a site that lies within a rural zone. The proposed access is a minimum of 7.5 metres wide and therefore complies with the requirement.

On this basis, the vehicle access is acceptable from a traffic engineering perspective and is expected to function safely and efficiently

3.3.4 Gradients

The AUP contains gradient related requirements as per the following:

- Vehicle accesses serving residential activities must have a gradient no steeper than 1:5
- Vehicle accesses serving commercial activities must have a gradient no steeper than 1:6.
- Transition sections must be provided where the access has a change in gradient exceeding 1:8 at a summit, or exceeding 1:6.7 at a sag.
- A 4.0-metre-long platform is to be provided at the boundary that is no steeper than 1:20.
- All parking spaces must have a gradient no steeper than 1:20.
- All manoeuvring areas must have a gradient no steeper than 1:8.

The first 4.0 m of the access will be at a grade of about 1:50. The main area of the site is used for parking and manoeuvring and will be formed as level as practicable and may have a slight fall of 1:50 to assist stormwater runoff.

On this basis, the relevant gradients are considered to be suitable for the intended use and acceptable from a traffic engineering perspective.

3.3.5 Vehicle Access Restriction Assessment

According to standard E27.6.4.1 'Vehicle Access Restrictions' (VAR), a vehicle access restriction assessment is triggered where a site boundary has frontage to an Arterial Road, or where a vehicle crossing is located within 10 metres of any intersection as measured from the property boundary.

The proposed entrance to the property is located clear of all intersections, and this portion of Great South Road is not an Arterial Road, and a VAR assessment is not required.

In summary, the existing access arrangements for the development meet the requirements of the Unitary Plan, are suitable for the intended use and are expected to operate safely and efficiently.

3.3.6 Pedestrian Access

There are no footpaths and the site is located in a rural environment. No pedestrians are expected to walk to the site. It is anticipated that only staff and the occasional delivery driver will walk around the site. There are no specific pedestrian facilities provided on the site as there will be very few traffic movements on the site that could in any way hinder pedestrians on the site.

On this basis, the proposed pedestrian arrangements are suitable for the intended use and acceptable from a traffic engineering perspective.

3.4 Loading and Servicing

A private waste management collection service will be provided. A waste storage area will be provided near the workshop and office. A rubbish truck will be able to access the site and make its collection.

Overall, the loading and servicing arrangements of the proposal have been assessed and are acceptable from a traffic engineering perspective.

3.5 Construction Traffic Management Plan

The construction contractor will be required to submit a site-specific Construction Traffic Management Plan (CTMP) to be approved by Auckland Council for the site preparation and construction phases of the project.

The approved CTMP will be used to manage the movement of construction traffic to and from the site, while maintaining the safe and efficient movement of vehicles and pedestrians in the vicinity of the site.

Given the good site access arrangements available for construction and also the good connectivity to the surrounding road network, there is not expected to be any issues in this regard.

The information required to prepare a CTMP is not available at this juncture, given that a construction contractor has yet to be engaged. Until this occurs, the construction methodology and timing, the type of trucks, the routes to/from the site and the frequency of movements are all unknowns.

On this basis, it is recommended that the provision of a 'Construction Traffic Management Plan' forms a condition of consent, with the following suggested wording (or similar):

Construction Traffic Management Plan

At least ten working days prior to works beginning, the consent holder shall prepare a Construction Traffic Management Plan (CTMP) to address the control of the movement of earthmoving vehicles, heavy vehicles, and deliveries to and from the site, and the management of traffic resulting from undertaking works in a road corridor.

The CTMP shall be submitted to the Council Team Leader Compliance Monitoring for certification that the CTMP gives effect to the objectives and requirements set out in the condition below. No work shall commence until confirmation is provided from the council that the CTMP is in accordance with the Auckland Council Code of Practice requirements and shall satisfactorily manage traffic effects and any required measures referred to in that plan have been put in place.

The provision of an approved Construction Traffic Management Plan will ensure that any potential effects will be controlled and minimised.

4. Unitary Plan Standards Assessment

Section E27 of the Auckland Unitary Plan sets out the development standards relating to transport. Table 4 below lists the relevant standards that apply to this development and comments on compliance. The site is located within a **Rural – Mixed Rural Zone**.

Table 4: Auckland Unitary Plan Transport Standards Assessment

Auckland Unitary Plan Transport Standards Assessment	
AUP Standard	Assessment
<p>E27.6.2. (1) Number of Vehicle Parking Spaces Defines the minimum and maximum number of parking spaces allowed on-site.</p> <p>Table E27.6.2.4 Parking Rates – Area 2 (T80) All other activities where located in rural zones No Minimum and no maximum</p>	<p>Complies: There is room for more than 30 car parking spaces and 25 truck parks.</p>
<p>E27.6.2. (6) Number of Bicycle Parking Spaces Defines the number of bicycle parking spaces required to be provided.</p> <p>Table E27.6.2.5 Required bicycle parking rates (T103) Sports fields Visitor 3 per Ha. Secure 1 per Ha.</p>	<p>Complies: N/A</p>
<p>E27.6.2. (7) End of Trip Facilities Defines the end of trip facilities to be provided for office, education or hospital facilities.</p> <p>Table E27.6.2.6 Required end-of-trip facilities</p>	<p>Complies: N/A</p>
<p>E27.6.2. (8) Number of Loading Spaces Defines the number of loading spaces required to be provided on-site.</p> <p>Table E27.6.2.7 Minimum loading space requirements</p>	<p>Complies: There is room for a minimum of 25 truck parking spaces.</p>
<p>E27.6.2. (10) Accessible Parking Defines the number of accessible parking spaces required to be provided on-site. Essentially a residential development does not require accessible parking.</p>	<p>Complies: N/A</p>
<p>E27.6.3.1. (1) Size and Location of Parking Spaces Defines the size, use, and location of parking spaces.</p> <p>Table E27.6.3.1.1 Minimum car parking space and manoeuvring dimensions (T117) 2.4m wide, 5.0m deep, 7.1m manoeuvring (T120) 2.7m wide, 5.0m deep, 5.9m manoeuvring</p>	<p>Complies: The spaces are not formally marked but will be larger than standard parking spaces as the spaces are not marked.</p>
<p>E27.6.3.2. Size and Location of Loading Spaces Defines the size, use, and location of loading spaces.</p> <p>Table E27.6.3.2.1 Minimum loading space dimensions</p>	<p>Complies: The truck parking spaces are not marked but there is room for 25 spaces that are 3.5m wide by 11.0m long.</p>

E27.6.3.3. Access and Manoeuvring

Defines the requirements for the access and manoeuvring of design vehicles, to and from parking spaces on-site.

Complies: An 85th percentile car will be able to enter and leave all parking spaces.

Table E27.6.4.3.2 Vehicle crossing and vehicle access widths

(T156) 5.5m Min crossing width and 6.0m maximum width.

The crossing may be up to 9.0m wide to accommodate heavy vehicles.

There is no minimum width for the access.

Complies: The existing crossing will be used.

The access is a min of 7.5 metres wide.

E27.6.3.4. Reverse Manoeuvring

Defines the conditions in which reverse manoeuvring is acceptable to and from a site.

Complies: All vehicles will be able to enter and exit the site in a forward direction.

E27.6.3.5. Vertical Clearance

Defines the minimum vertical clearance to overhead structures.

(a) 2.1m for residential activities

(b) 2.3m for all other activities

(c) 2.5m for accessible parking

(d) 3.8m for loading

Complies: There is a minimum of 3.8 metres above the car parking spaces.

E27.6.3.6. Formation and Gradient

Defines the formation and gradients for all parking spaces and manoeuvring areas.

(3)(a) Max gradient 1:25 for accessible spaces.

(3)(b) Max gradient 1:20 for all other parking spaces.

(4) Max gradient 1:8 for manoeuvring areas.

Complies: The car parking is on a gentle grade of about 1:50. The access is existing and no changes are proposed.

E27.6.3.7. Lighting

Lighting is required where there are 10 or more parking spaces which are likely to be used during the hours of darkness. The parking and manoeuvring areas and associated pedestrian routes must be adequately lit during use in a manner that complies with the rules in section E24 Lighting.

Complies: A lighting plan will be provided or the provision of a lighting plan may be set as a condition of consent.

E27.6.4.1. Vehicle Access Restrictions

Defines the acceptable locations of access points in relation to strategic roads and intersections.

Complies: N/A

E27.6.4.2. Width and Number of Vehicle Crossings

Defines the number of vehicle crossings, proximity to other vehicle crossings, and permitted widths of vehicle crossings.

Complies: The number of vehicle crossings serving the site does not exceed the rate of 1/25m of frontage

Table E27.6.4.2.1 Maximum number of vehicle crossings and separation distance between crossings

(T146) Max number of vehicle crossings per site: 1/25m of frontage or part thereof.

Min separation between on-site crossings and neighbouring crossings: 2m

Min separation between crossings on same site: 6m

Complies: There is only one vehicle crossing.

Complies: N/A

E27.6.5. Design and Location of Off-road Pedestrian and Cycling Facilities

Defines the requirements for off-road pedestrian and cycle facilities.

Complies: N/A

5. Conclusion

This report discusses the traffic-related aspects of an application to operate a rural contractors depot (rural industry) at 1799a Great South Road in Bombay.

- The crash history does not indicate the presence of any inherent safety or operational concerns with the layout of Great South Road that could impact on this proposal.
- The site is well located for access however there are no passenger transport options for staff.
- The proposed parking arrangement complies with the requirements of the AUP, and is acceptable from a traffic engineering perspective.
- The anticipated level of additional traffic generated by the proposal can be easily accommodated by the existing road network, and is acceptable from a traffic engineering perspective.
- The existing vehicle crossing arrangement is acceptable from a traffic engineering perspective.
- The gradients of the manoeuvring area and proposed parking spaces satisfy the requirements of the AUP.
- The loading and servicing arrangements for the site are acceptable from a traffic engineering perspective.

Overall, it is considered that the traffic engineering aspects of the proposal are appropriate for the intended use, and are not expected to result in any operational or safety issues from a traffic engineering perspective.

Appendices



Appendix A Plan of the Site



SHEET 2 OF 2

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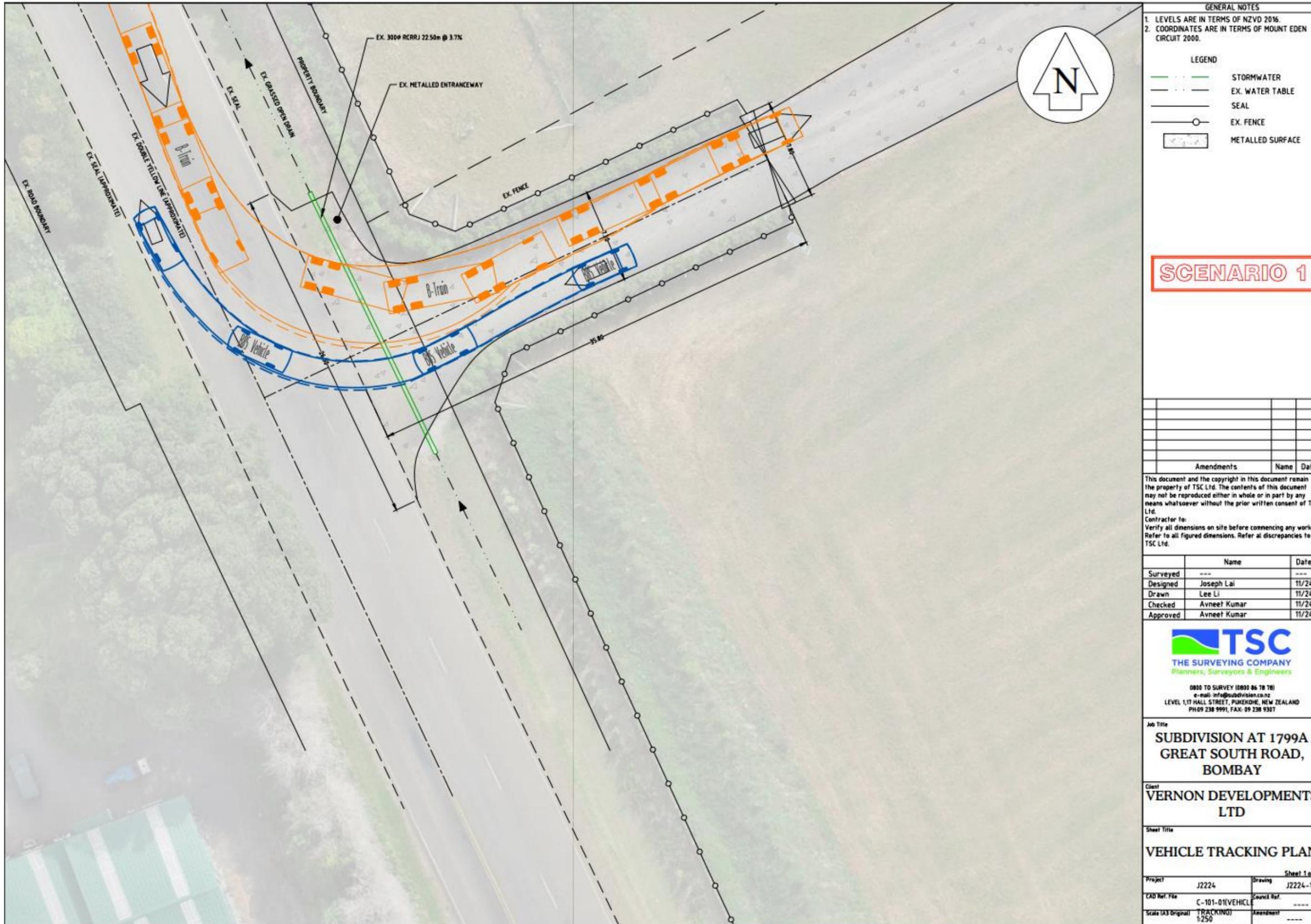
VERNON DEVELOPMENTS LIMITED

LAND USE CONSENT PLAN -
 # 1799A GREAT SOUTH ROAD, BOMBAY.

LAND USE CONSENT PLAN

Drawn By RP	J2224 - LANDUSE CONSENT PLAN 1-A
Scale @A3 1 : 500	NOV 2024 J1612

Appendix B Tracking Plans



GENERAL NOTES

- LEVELS ARE IN TERMS OF NZVD 2016.
- COORDINATES ARE IN TERMS OF MOUNT EDEN CIRCUIT 2000.

LEGEND

- STORMWATER
- - - EX. WATER TABLE
- SEAL
- EX. FENCE
- METALLED SURFACE

SCENARIO 1

Amendments	Name	Date

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Contractor to:
Verify all dimensions on site before commencing any work. Refer to all figured dimensions. Refer all discrepancies to TSC Ltd.

	Name	Date
Surveyed	---	---
Designed	Joseph Lai	11/24
Drawn	Lee Li	11/24
Checked	Avneet Kumar	11/24
Approved	Avneet Kumar	11/24

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THE SURVEYING COMPANY
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Job Title
**SUBDIVISION AT 1799A
GREAT SOUTH ROAD,
BOMBAY**

Client
**VERNON DEVELOPMENTS
LTD**

Sheet Title
VEHICLE TRACKING PLAN

Project		Drawing	
J2224	J2224	J2224-1	J2224-1
CAD Ref. File	C-101-01(VEHICLE TRACKING)	Council Ref.	---
Scale (A3 Original)	1:250	Amendment	---

Sheet 1 of 3

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