# TRAFFIC IMPACT ASSESSMENT

12 JELLICOE ROAD, MANUREWA

PREPARED BY **THE TRAFFIC GROUP**

# DOCUMENT CONTROL RECORD

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|---|---|
| CLIENT | The Applicant |
| PROJECT | 12 Jellicoe Road, Manurewa |
| TTG PROJECT NO. | 2024NZ12222620 |
| DOCUMENT TITLE | Traffic Impact Assessment Report |
| STATUS | Issued for RC application |
| VERSION | 1.0 |
| DATE OF ISSUE | 29/01/2025 – Issued for RC |
| PREPARED BY | The Traffic Group |
| EMAIL | jack.sun@thetrafficgroup.co.nz |

## Table of Contents

## 1. INTRODUCTION

This report is prepared by The Traffic Group on behalf of the applicant, The Applicant, to assess the potential traffic effects of the proposed development for residential dwellings located at 12 Jellicoe Road, Manurewa, Auckland. The site is located within a Business – Light Industry Zone under the Auckland Unitary Plan (Operative in Part). This traffic assessment report addresses the following:

- An assessment of the potential traffic impacts from the development to the existing road network;
- An assessment of the internal access, parking provisions and manoeuvring movement;
- An assessment of the proposed development against the Auckland Unitary Plan Transportation Standards and Rules.

This report is submitted to the Auckland Council as a supporting document for a resource consent application for the proposed development.

## 2. THE EXISTING SITUATION

The site is located to the northwest of Southmall Manurewa and to the north of Manurewa Intermediate. Figure 1 shows the general location of the site.

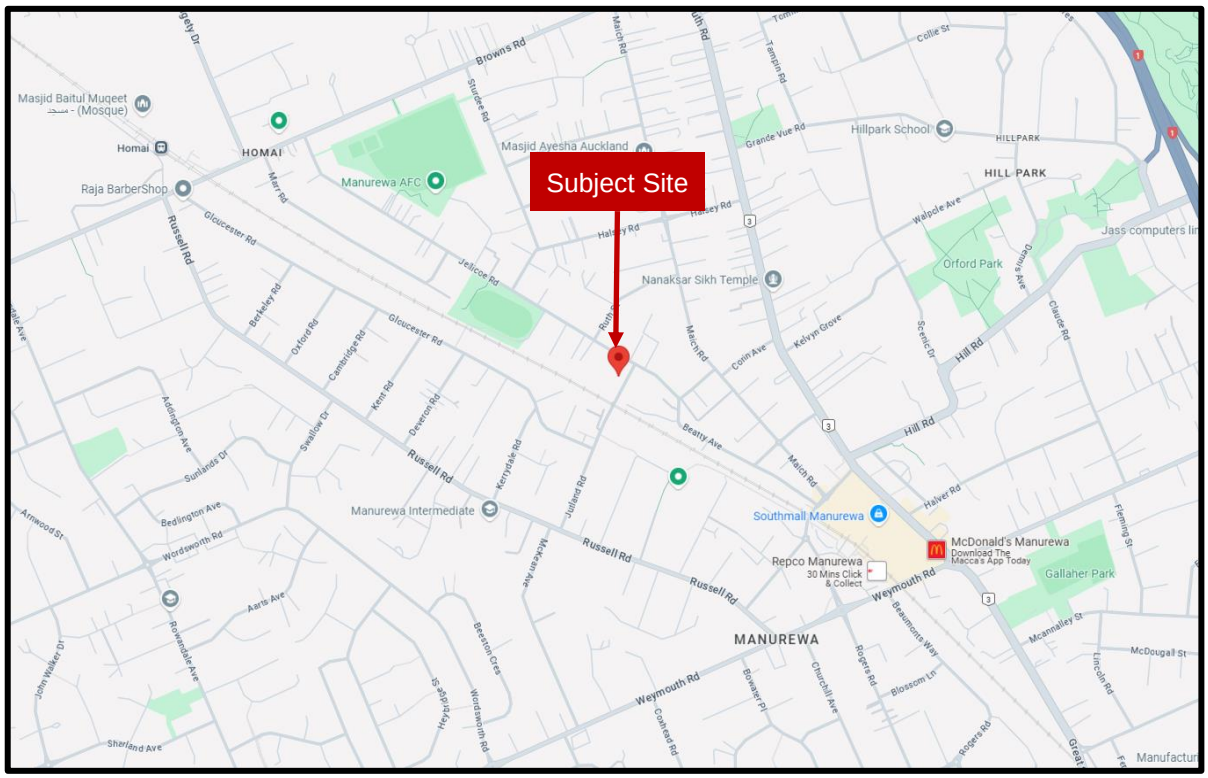


Figure 2.0: Existing site location.

*Source: Google Map*

The subject site is located at the intersection of Jellicoe Road / Jutland Road and the intersection has priority stop control on Jutland Road. The current zoning is Business – Light Industry Zone as defined in the Auckland Unitary Plan – Operative in part (AUP). Figure 2.1 shows the site location, surrounding zoning and adjacent road network.

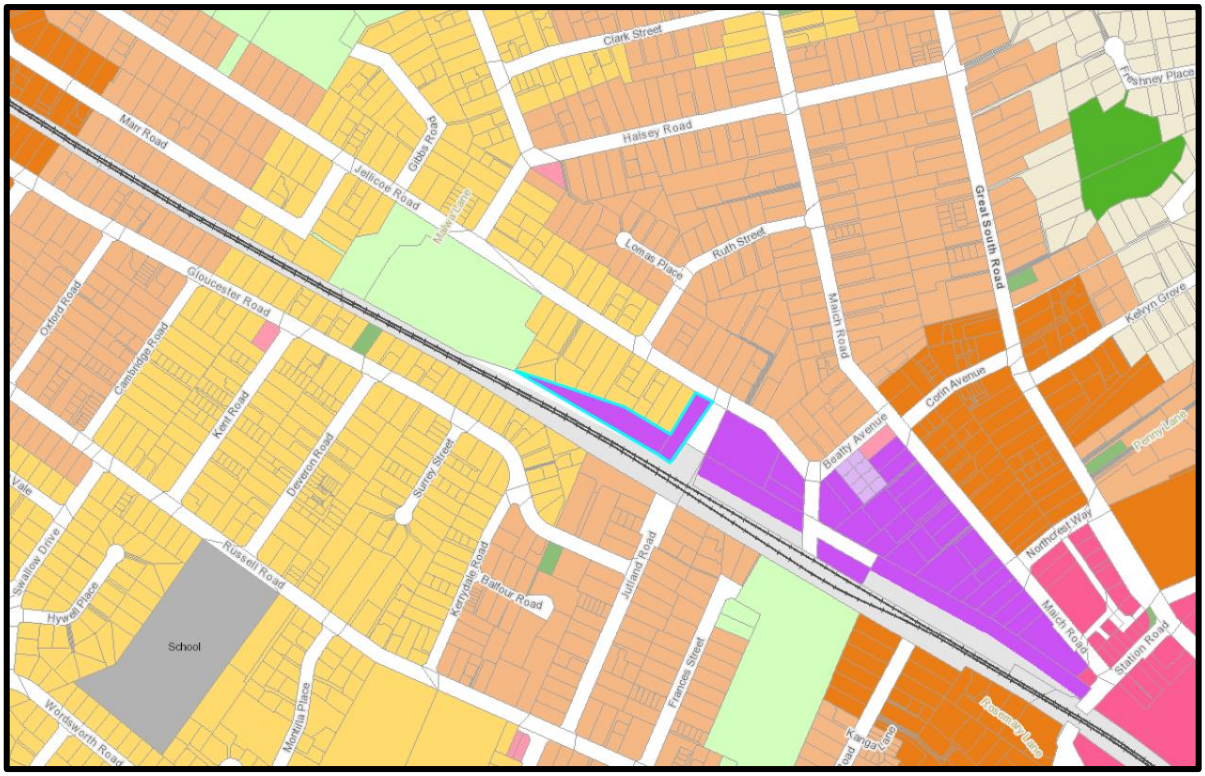


Figure 2.1: Existing site location - zoning.

There is an existing church located at 12 Jellicoe Road. The total frontage of the site is approximately 145m and there is one existing vehicle crossing on Jellicoe Road of approximately 5.5m in width.


Figure 2.2: Existing site location Aerial View – source Council GeoMaps.

All vehicle movements to and from the subject site will travel via Jellicoe Road to connect onto the surrounding transportation network. Jellicoe Road has a carriageway width of around 10.6m and provides for two-way operation with a marked center line. A pedestrian footpath is provided on both sides of Jellicoe Road and kerb and channel exist on both boundaries of the road. Onstreet parking are proposed along Jellicoe Road and Jutland Road. The carriageway on Jellicoe Road is generally level toward the western and eastern ends with a relatively straight horizontal geometry along the site frontage.

Figure 2.3: Existing site – 12 Jellicoe Road.

## 2.1 EXISTING TRAFFIC VOLUMES

As noted, the site is located at the intersection of Jellicoe Road / Jutland Road. Jellicoe Road is classified as a Collector on the Mobile Road data website with a recorded traffic volume of 4059 veh/day. Jutland Road is classified as a Collector on the Mobile Road data website with a recorded traffic volume of 4312 veh/day.

Table 1.0: Traffic Data extracted from the Mobile Road database: 2024

| Road Name | Vehicles Per Day | Count / Estimate | Date Counted |
|---|---|---|---|
| Jellicoe Road | 4059 | Count | 30/06/2024 |
| Jutland Road | 4312 | Count | 30/06/2024 |

## 2.2 CRASH HISTORY

All reported crashes in the immediate vicinity of the site for the period 2019 to 2024 have been obtained from the NZTA Crash Analysis System (CAS)[2]. There have been six cases of crashes reported within that period on Jellicoe Road that is within 50m of the development site – 1 Minor injury, 5 Non-injury:

- Car/Wagon1 WDB on JELLICOE ROAD hit Car/Wagon2 turning right onto AXROAD from the left due to failure to give way at priority traffic control;
- Car/Wagon2 turning right hit by oncoming Car/Wagon1 NDB on JELLICOE ROAD due to failure to give way turning to non-turning traffic;
- Car/Wagon1 NDB on JELLICOE ROAD hit rear of Car/Wagon2 NDB on JELLICOE ROAD turning right from centre line due to failure to notice car slowing;
- Car/Wagon1 NDB on JELLICOE ROAD lost control; went off road to right, Car/Wagon1 hit fence, parked (unattended) vehicle due to alcohol suspected;
- Car/Wagon1 SDB on JELLICOE ROAD missed inters or end of road, Car/Wagon1 hit fence due to cutting corner at intersection;
- Car/Wagon1 SDB on JELLICOE ROAD lost control turning right; went off road to left, Car/Wagon1 hit embankment (driven over), fence, kerb due to cutting corner at intersection and lost control when turning;

The six cases of crashes are not associated with the alignment or geometry of the roads and the level of crashes is very low compared to the existing traffic volumes on Jellicoe Road and Jutland Road. This implies that the surrounding traffic network is providing a good safety function.

The collision diagram is shown in Figure 2.4 below.

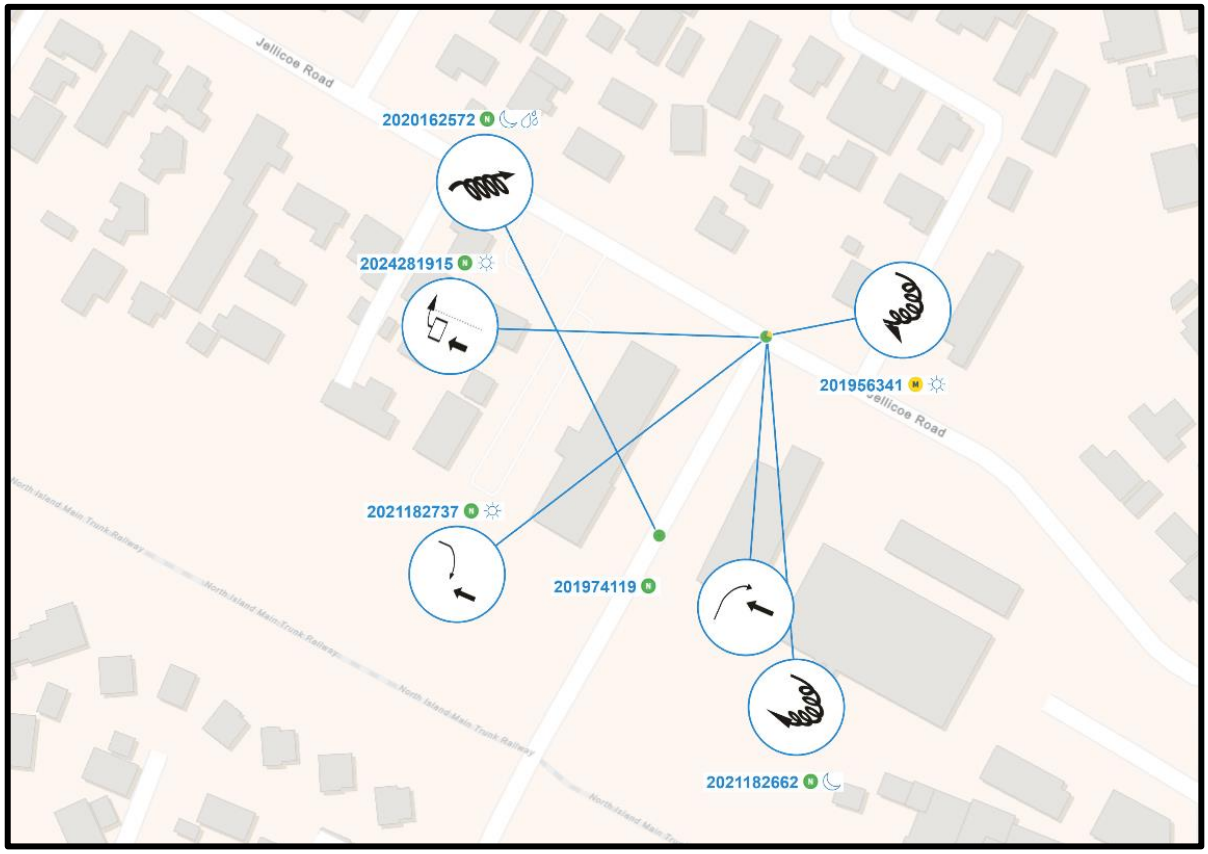


Figure 2.4: Collision Diagram.

## 2.3 PUBLIC TRANSPORT ACCESSIBILITY

The area is considered to be well serviced by public transport and there is existing public transport that is currently accessible in the area. The nearest bus stop is located on Corin Avenue, which is some 650m northeast of the site and Manurewa train station is located some 1km southeast of the site. The site is serviced by the 33 and 362 bus routes that offer high-frequency services that run between Otahuhu to Papakura and Manukau to Weymouth. These services operate at 15-minute to 30-minute intervals all day.

Notwithstanding the potential of future development within the area can generate a higher demand for public transport, the current accessibility to public transport is deemed sufficient to service the site.


## 2.4 PEDESTRIAN & CYCLIST FACILITIES

The pedestrian and cyclist amenities in the area are well established with all roads provided with footpaths. Pedestrian crossing points are provided over side roads. A shared cycle path exists along Great South Road and services Manurewa town centre to Manukau city centre. Therefore, the site is well accessible for pedestrians and cyclists, and the pedestrian and cyclist amenities will be continuously improved in the future.

# 3. PROPOSED DEVELOPMENT

The existing building and the existing vehicle crossing will be retained. A new building and 129 new parking spaces are proposed for the site. Their development layout is shown in Figure 3.0 below.

The proposed accessway will lead to the proposed parking area flanking the rear of the site. Additional carparks are proposed to serve the site.

More details of the proposal are provided in the Architectural plans and the planning AEE report.

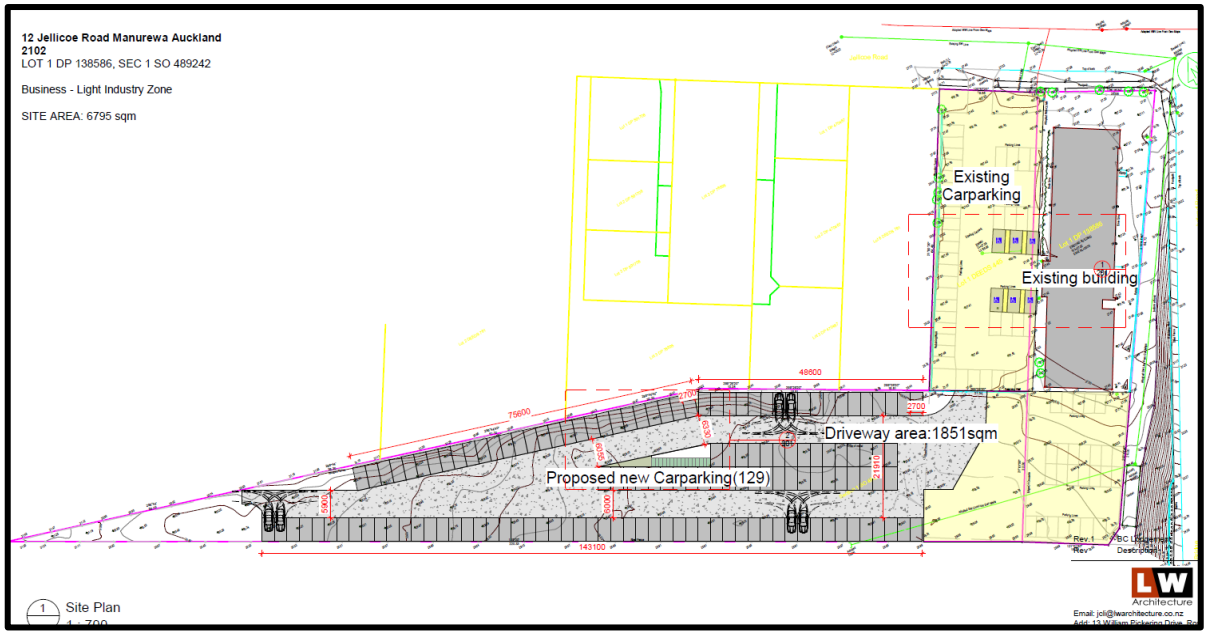


Figure 3: Proposed development – Driveway and parking arrangement.

# 4. SAFETY IN DESIGN DISCUSSION

## 4.1. VEHICLE CROSSING AND ACCESS DRIVEWAY

The development will be accessed via the existing vehicle crossing located on Jellicoe Road. The existing crossing has a carriageway width of 5.4m to serve two-way vehicle movement. The existing auditorium has a GFA of 1022m$^2$ with a maximum seating capacity of 300 seats. A new auditorium is proposed for the site with a proposed GFA of 1176m$^2$ with a maximum seating capacity of 600 seats.

There are 68 existing carparks at the site. Eight of the existing parking spaces are removed and converted into 6 accessible parking spaces, and 129 new carparks are proposed. All access and manoeuvring activities will be internalised to the site. Movements to and from Jellicoe Road are safely provided for in a forward-facing direction. A 2m separation distance is achieved to the adjacent crossings and a 10m separation is achieved to the intersection of Jellicoe Road / Jutland Road.

## 4.2 PARKING DEMAND

Plan Change 79 to the Auckland Unitary Plan under the Resource Management Act 1991 Appendix 23 specifies the minimum number of parking spaces that should be provided for various developments. For a church, a minimum of 0.2 spaces is required for every person the facility is designed to accommodate. Ancillary spaces such as prayer rooms, meeting rooms and lobby spaces can be disregarded.

As the existing and the proposed auditoriums are designed to accommodate a maximum of 900 people, a maximum parking demand of 180 parking spaces is expected.

A total of 60 parking spaces are retained at the site and an additional 129 new parking spaces and 6 accessible parking are proposed to generate a total of 195 parking spaces. This meets the maximum parking demand for the proposed activity. The parking provision on-site is therefore able to accommodate the peak demands of the church, and therefore is considered appropriate for the proposed development.

## 4.3 CAR PARKING

129 carparks are proposed for the site to serve regular users and have a dimension of 2.7m width and 5m length. A maneuvering depth of 5.9m minimum is proposed for the carparks which comply with E27.6.3.1.

Six accessible carparks are proposed for the site. The accessible parking spaces have been designed in accordance with the AS/NZS 2890.6 standard which is in line with the Building Code. The accessible car parking spaces will have a width of 2.7m and a depth of 5m, with a shared space of 1m width adjacent to the mobility car spaces. A maneuvering width of 7.5m minimum is proposed which complies with E27.6.3.1.1.

Five longterm bicycle parking and eleven visitor bicycle parking spaces are proposed onsite.

There are ample unrestricted on road parking spaces available along both sides of Jellicoe Road. It is expected that visitors will be able to utilise the on-road parking near the site. In addition, the site is located close to a high frequency passenger transport routes and staff in particular will have ample opportunities to catch public transport.

## 4.4 SIGHT DISTANCE

In respect of sight distance for the proposed laneway access points, the appropriate standard to use is the Land Transport Safety Authority publication 'Guidelines for Visibility at Driveways' (RTS 6). There are two components to the sight distance measurement the first being the sight distance requirement and the second being the lines of clear sight. The sight distance/lines of clear sight required is dependent upon the traffic generation of the proposal, the 85th percentile speed of vehicles on the frontage road and also the classification of the frontage road.

In this instance, the frontage road is a Collector Road. The predicted number of vehicle movements at the vehicle crossing is more than the rating threshold of 200 vehicle trips per day, such that the accesses are defined as 'high volume' according to RTS 6. The 85th percentile speeds are expected to be no more than 50 km/hr on Jellicoe Road. On this basis, the guideline recommends a minimum sight distance of 90m for the access point. A sight distance of approximately 130m is available toward the westward and eastward directions and the current sight distances are deemed acceptable.

## 4.5 BICYCLE PARKING

The Unitary Plan requires a minimum of 1 bicycle parking per 200m$^2$ gross floor area (GFA) for visitors (short stay) and 1 per 500m$^2$ GFA for secure (long stay) for community facilities. The existing auditorium has a total GFA of approximately 1022m$^2$ and approximately 1176m$^2$ is proposed for the new auditorium which leads to a requirement of eleven visitor bicycle parking spaces and five secure spaces. The proposed development provides sixteen bicycle parking spaces adjacent to the car parking area, in compliance with the Unitary Plan requirements.

## 4.6 TRIP GENERATION

Sunday morning is the time when the most trips will be generated by the development. The Institute of Transportation Engineers' Trip Generation Manual (ITE Manual) has been used to estimate the number of trips likely to be generated by the development during the Sunday peak hour, as RR 453 only provides a weekday peak trip rate.

The trip rate for churches provided by the ITE Manual (Land Use 560) is 0.54 trips per seat. A maximum of 900 seats is proposed for the site however the expected average seating capacity is 700 seats based on existing attendance patterns. This equates to a total number of 378 trips in the peak hour. The directional distribution of trips, as stated in the ITE Manual, is 50% inbound and 50% outbound.

Most churches have multiple services on a Sunday morning and as such the peak hour typically occurs between services when people are leaving the first service and others are arriving for the second. This is reflected in the trip rate per seat and the directional distribution of trips listed in the ITE Manual which has a 50/50 split between inbound and outbound trips. Given that the site has two services on Sunday

morning at 9am and 11am respectively which are each approximately 90 minutes long, it is considered that the trip rate can be halved. That is, 189 trips will be inbound to the site in the hour before the 9am service and 189 trips will be outbound in the hour after the 11am service while 378 trips will be expected in the peak hour between services. The trip direction will be significantly tidal (i.e. the majority of trips will be into the site prior to the service, and outwards at the end.

At present, the church auditorium is capable of accommodating approximately 300 people. Therefore, using the same trip rates stated above, it is estimated that the church currently generates 81 trips in the peak hour. The new auditorium is therefore estimated to increase the traffic demands in the peak hour by 108 vehicles.

## 5. E27.6 STANDARD DISCUSSION

| Rule | Assessment | Complies? |
|---|---|---|
| **E27.6.1. Trip generation**<br>(1) Where a proposal (except where excluded in Standard E27.6.1(2)) exceeds one of the following thresholds:<br>(a) a new development in Table E27.6.1.1;<br>(b) 100 v/hr (any hour) for activities not specified in Table E27.6.1.1 requiring a controlled or restricted discretionary land use activity consent in the applicable zone where there are no requirements for an assessment of transport or trip generation effects. This standard does not apply to development activities provided for as permitted in the applicable zone; or<br>(c) A proposed subdivision of land which has capacity under this Plan to accommodate more than 100 dwellings resource consent for a restricted discretionary activity is required. | 189 trips are expected to be inbound to the site in the hour before the 9am service and 189 trips will be outbound in the hour after the 11am service while 378 trips will be expected in the peak hour between services. | N/A |
| (2) Standard E27.6.1(1) does not apply where:<br>(a) a proposal is located in the Business – City Centre Zone, Business – Metropolitan Centre Zone, Business – Town Centre Zone, or Residential –Mixed Housing Urban Zone or Centre Fringe Office Control as shown on the planning maps;<br>(b) development is being undertaken in accordance with a consent or provisions approved on the basis of an Integrated Transport Assessment where the land use and the associated trip generation and transport effects are the same or similar in character, intensity and scale to those identified in the previous assessment;<br>(c) the activity is permitted in the H7 Open space zones; or<br>(d) there are requirements to assess transport, traffic or trip-generation effects for the activity in the applicable zone rules or precinct rules for any controlled or restricted discretionary land use activities | N/A | N/A |
| **E27.6.2 Number of parking and loading spaces**<br>(1) The number of parking spaces: (a) must not exceed the maximum rates specified;<br>which apply to the zone or location specified in Table E27.6.2.1, Table E27.6.2.2, Table E27.6.2.3 and Table E27.6.2.4. | N/A | N/A |
| (3) For the purposes of meeting the requirements of the vehicle parking rules, a parking space includes | N/A | N/A |

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| those provided for in a garage or car port or any paved area provided for the sole purpose of parking a motor vehicle. | | |
| (3a) Within the Centre Fringe Office Control area, the parking rates contained in Table E27.6.2.2 apply instead of those contained in Table E27.6.2.3 and Table E27.6.2.4. | N/A | N/A |
| (4) Table E27.6.2.3 sets out the parking rates which apply in the following zones and locations:<br>(a) Business – Metropolitan Centre Zone;<br>(b) Business – Town Centre Zone – excluding the following town centres where Table E27.6.2.4 applies Helensville, Kumeu-Huapai, Pukekohe, Warkworth and Wellsford;<br>(c) Business – Local Centre Zone – excluding the following local centres where Table E27.6.2.4 applies: Karaka, Kaukapakapa, Leigh, Matakana, Riverhead, Snells Beach, Te Hana, Waimauku and Waiuku;<br>(d) Business – Mixed Use Zone (excluding where the Business – Mixed Use Zone is adjacent to the town centres or local centres identified in Standards E27.6.2(4)(b) and E27.6.2(4)(c) above); and<br>(e) Residential – Terrace Housing and Apartment Buildings Zone. | N/A | N/A |
| (5) Table E27.6.2.4 sets out the parking rates which apply to the Business – Neighbourhood Centre Zone and all other zones and areas not specified in Table E27.6.2.1, Table E27.6.2.2 and Table E27.6.2.3. | N/A | N/A |
| (6) Bicycle parking:<br>(a) the activities specified in Table E27.6.2.5 must provide the minimum number of bicycle parking spaces specified; and<br>(b) the following bicycle parking requirements apply to new buildings and developments. | The Unitary Plan requires a minimum of 1 bicycle parking per 200m$^2$ gross floor area (GFA) for visitors (short stay) and 1 per 500m$^2$ GFA for secure (long stay) for community facilities.<br>The existing auditorium has a total GFA of approximately 1022m$^2$ and approximately 1176m$^2$ is proposed for the new auditorium which leads to a requirement of eleven visitor bicycle parking spaces and five secure spaces.<br>The proposed development provides sixteen bicycle parking spaces adjacent to the car parking area, in compliance with the Unitary Plan requirements. | Yes |
| (7) End-of-trip facilities:<br>(a) the activities specified in Table E27.6.2.6 must provide end-of-trip facilities as listed below; and (b) the following end-of-trip facilities requirements apply to new buildings and developments. | N/A | N/A |

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| (8) Number of loading spaces:<br>(a) all activities must provide loading spaces as specified in Table E27.6.2.7. | No loading space is required for the development as less than 5,000m$^2$ GFA is proposed. | N/A |
| (9) Fractional spaces:<br>(a) where the calculation of the required or permitted parking results in a fractional space, any fraction that is less than one-half will be disregarded and any fraction of one-half or more will be counted as one space. If there are different activities within a development, the parking required or permitted for each activity must be added together before rounding. | N/A | N/A |
| **E27.6.3. Design of parking and loading spaces**<br>**E27.6.3.1. Size and location of parking spaces**<br>(1) Every parking space must:<br>(a) comply with the minimum dimensions given in Table E27.6.3.1.1 and Figure E27.6.3.1.1; and<br>(b) be located on the same site as the activity to which it relates unless one of the following criteria is met:<br>(i) the parking is located in an H7 Open Space Zone and the reserve, park or recreation area consists of more than one adjoining Certificate of Title. … or<br>(ii) resource consent is granted to an alternative arrangement, such as shared parking, off-site parking, or non-accessory parking.<br>(c) not be used for any other purpose; and<br>Cont….<br>(d) be kept clear and available at all times the activity is in operation, except where stacked parking is permitted by Standard E27.6.3.3(3) below; and<br>(e) be located outside any area designated for road widening; and (f) parking located in part of any yard on the site (where it is permitted in the zone) must not:<br>(i) impede vehicular access and movement on the site; and<br>(ii) infringe any open space and landscape requirements for the relevant zone; and<br>(g) not to be sold or leased separately from the activity for which it provides parking required under a resource consent. | (1) 129 carparks are proposed to serve regular users and have a dimension of 2.7m width and 5m length. A maneuvering depth of 5.9m minimum is proposed for the carparks which comply with E27.6.3.1. | Yes |
| **E27.6.3.2. Size and location of loading spaces**<br>(1) Every loading space must:<br>(a) comply with the minimum dimensions given in Table E27.6.3.2.1; and<br>(b) be located on the same site as the activity to which it relates and be available at all times while the activity is in operation; and<br>(c) be located outside any area designated for road widening; and<br>(d) comply with the following when any yard of a site is used to provide the loading space (where it is permitted within the zone):<br>(i) ensure that the footpath or access to the rear of the site or access to an adjacent property is not blocked at any time; and<br>(ii) the use of the loading space does not create a traffic hazard on the road at any time. | N/A | NA |

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| **E27.6.3.3. Access and manoeuvring**<br>(1) Every parking space must have driveways and aisles for entry and exit of vehicles to and from the road, and for vehicle manoeuvring within the site. Access and manoeuvring areas must accommodate the 85 percentile car tracking curves in Figure E27.6.3.3.1<br>(2) Every loading space and where access and manoeuvring areas must accommodate heavy vehicles, …<br>(3) Where a dwelling provides more than one parking space, these may be stacked. Stacked parking means access is required through another parking space. | N/A | N/A |
| **E27.6.3.4. Reverse manoeuvring**<br>(1) Sufficient space must be provided on the site, so vehicles do not need to reverse off the site or onto or off the road from any site where any of the following apply:<br>(a) four or more required parking spaces are served by single access;<br>(b) there is more than 30m between the parking space and the road boundary of the site, or (c) access would be from an arterial road or otherwise within a Vehicle Access restriction covered in Standard E27.6.4.1. | Sufficient maneuvering area has been provided so that vehicles can exit the site in a forward-facing manner. | N/A |
| **E27.6.3.5. Vertical clearance**<br>(1) To ensure vehicles can pass safely under overhead structures to access any parking and loading spaces, the minimum clearance between the formed surface and the structure must be:<br>(a) 2.1m where access and/or parking for cars is provided for residential activities;<br>(b) 2.3m where access and/or parking for cars is provided for all other activities;<br>(c) 2.5m where access and/or accessible parking for people with disabilities is provided; or<br>(d) 3.8m where loading is required. | A minimum vertical clearance of 2.5m is achieved for the accessible parking and 2.1m is achieved for the carparks. | Yes |
| **E27.6.3.6. Formation and gradient**<br>(1) Except for Standard E27.6.3.6(2) below, the whole area of parking and loading spaces, and manoeuvring areas and aisles must be formed, drained, provided with an all-weather surface to prevent dust and nuisance, and be marked out or delineated. This must be done before the activity to which those parking and loading spaces relate commences and maintained for as long as that activity is continued.<br>(2) Parking and loading spaces and manoeuvring areas and aisles do not need to be provided with an allweather surface in the following zones: (a) Rural – Rural Conservation Zone; (b) Rural – Rural Coastal Zone; (c) Rural – Mixed Rural Zone; and (d) Rural – Rural Production Zone.<br>Cont…<br>(3) The gradient for the surface of any parking space must not exceed: (a) 1 in 25 in any direction for accessible spaces for people with disabilities; or (b) 1 in 20 (five per cent) in any direction for other spaces. | (1) The access and manoeuvring area will be formed with concrete, paved and drained to the Council's requirements.<br><br>(2) N/A<br><br>(3) The driveway profile is unavailable at the writing of this report.<br><br>(4) The driveway profile is unavailable at the writing of this report. | Yes<br><br>N/A<br><br>N/A<br><br>N/A |

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| (4) The gradient for the manoeuvring area must not exceed 1 in 8. | | |
| **E27.6.3.7. Lighting**<br>(1) 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. | A lighting plan is not proposed as the proposed hours of operation will be during day-time hours only. | No |
| **E27.6.4.1. Vehicle Access Restrictions**<br>(1) Vehicle Access Restrictions apply, and new vehicle crossings must not be constructed to provide vehicle access across that part of a site boundary which is subject to …<br>(2) Standard E27.6.4.1(3) below applies in any of the following circumstances:<br>(a) a new vehicle crossing is proposed;<br>(b) a new activity is established on a site;<br>(c) there is a change of type of activity; or<br>(d) a building(s) is constructed, or additions to buildings that are not permitted activities in: … …<br>(3) Vehicle Access Restrictions apply, and vehicle crossings must not be constructed or used to provide vehicle access across that part of a site boundary which:<br>(a) is located within 10m of any intersection as measured from the property boundary, illustrated in Figure E27.6.4.1.1;<br>(b) is subject to the following types of Vehicle Access Restriction as identified on the planning maps in the zones listed in Table E27.6.4.1.1;<br>(c) has frontage to an arterial road as identified on the planning maps; or<br>(d) is located closer than 30m from a railway level crossing limit line. | N/A | N/A |
| **E27.6.4.2. Width and number of vehicle crossings**<br>1) The maximum number of vehicle crossings permitted for any site and separation distance between crossings is specified in Table E27.6.4.2.1<br>(2) The width of a vehicle crossing(s) must meet the minimum width and not exceed the maximum width as specified in Table E27.6.4.3.2.<br>(3) With the exception of vehicle crossings on unsealed roads, all vehicle crossings must be designed and constructed to maintain the level, colour, and materials of the footpath to identify to vehicles that pedestrians have priorityd<br>(4) Vehicle crossings on unsealed roads:<br>a) where the vehicle crossing is served by access steeper than 1 in 8, the vehicle crossing must be sealed for 6m between the site boundary and the unsealed road. (b) vehicle crossings not covered by Standard E27.6.4.2(3)(a) above must be formed using materials similar to the existing road surface or better.<br>(5) Where a vehicle crossing is altered or no longer required, the crossing, or redundant section of crossing, must be reinstated as berm and/or footpath | (1) The development complies with Standard (T146). A 2m separation distance is achieved to the adjacent crossings.<br><br>(2) The crossing will be serving 129 proposed carparks, 6 accessible parking and 60 existing carparks. The existing crossing has a width of 5.4m.<br>This does not comply with standards E27.6.4.3.2 (T151).<br><br>(3) The existing crossing is retained for the site.<br><br>(4) N/A | Yes<br><br>No<br><br>N/A<br><br>N/A |

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| and the kerbs replaced. The cost of such work will be borne by the owner of the site previously accessed by the vehicle crossing. | (5) N/A | N/A |
| **E27.6.4.3. Width of vehicle access and queuing requirements**<br>(1) Every on-site parking and loading space must have vehicle access from a road, with the vehicle access complying with the following standards for width: (a) passing bays are provided in accordance with Table E27.6.4.3.1; and (b) meeting the minimum formed access width specified in Table E27.6.4.3.2. | A minimum formed access width of 5.5m is achieved. | Yes |
| **E27.6.4.4. The gradient of vehicle access**<br>(1) The gradient of the access must not be steeper than specified in Table E27.6.4.4.1:<br>(2) To avoid the underside of the car striking the ground, as illustrated in Figure E27.6.4.4.2, access with a change in gradient exceeding 1 in 8 (greater than 12.5 per cent change) at the summit or a 1 in 6.7 (15 per cent change) at a sag must include transition sections to achieve adequate ground clearance, refer to Figure E27.6.4.4.3. Typically, a transition section requires a minimum length of 2m.<br>(3) All vehicle access must be designed so that where the access adjoins the road there is sufficient space on site for a platform so that vehicles can stop safely and check for pedestrians and other vehicles prior to exiting. This is illustrated in Figure E27.6.4.4.4. The platform must have a maximum gradient no steeper than 1 in 20 (5 per cent) and a minimum length of 4m for residential activities and 6m for all other activities | (1) The driveway profile is unavailable at the writing of this report.<br><br>(2) The driveway profile is unavailable at the writing of this report.<br><br>(3) The driveway profile is unavailable at the writing of this report. | N/A<br><br>N/A<br><br>N/A |
| **E27.6.4.5. Sightlines for road/rail level crossings …..** | N/A | N/A |
| **E27.6.5. Design and location of off-road pedestrian and cycling facilities** | N/A | N/A |

## 6. E27.8. ASSESSMENT RESTRICTED DISCRETIONARY ACTIVITIES

*E27.8.1. Matters of discretion*

*Any activity or development which infringes the standards for the design of parking and loading areas or access under Standards E27.6.3, E27.6.4.2, E27.6.4.3 and E27.6.4.4:*

*(a) adequacy for the site and the proposal;*

*(b) design of parking, loading and access;*

*(c) effects on pedestrian and streetscape amenity; and*

*(d) effects on the transport network.*

E27.8.2. Assessment criteria

*(8) any activity or development which infringes the standards for the design of parking and loading areas or access under Standard E27.6.3, E27.6.4.2, E27.6.4.3 and E27.6.4.4:*

(a) *effects on the safe and efficient operation of the adjacent transport network having regard to:*

(i) *the effect of the modification on visibility and safe sight distances;*

**The Traffic Group comment:** Safe sight distances are achieved at the vehicle access as there is no frontage fencing at the site access which allows for the safe stopping of vehicles prior to crossing onto the pedestrian footpath. A review of recent crashes in the vicinity of the site does not highlight any tangible road safety concerns associated with the property access.

*(ii) existing and future traffic conditions including speed, volume, type, current accident rate and the need for safe manoeuvring;*

**The Traffic Group comment:** The existing crossing has a width of 5.4m which does not meet the minimum access requirement of 5.5m for access serving 10 or more parking spaces. Despite this infringement, two-way vehicle movement is achieved at the site access which minimizes the risk of vehicle / vehicle conflict. The area occupied by the vehicle crossing is also well-defined so that pedestrians can anticipate vehicle paths along the pedestrian footpath. Furthermore, adequate onsite maneuvering is achieved by the proposed parking spaces as demonstrated via the 85$^{th}$ percentile tracking curves so that vehicles can exit in a forward-facing manner. As such, safe maneuvering is considered to be achieved at the access point.

*(iii) existing pedestrian numbers, and estimated future pedestrian numbers having regard to the level of development provided for in this Plan; or*

**The Traffic Group comment:** Existing number of pedestrians in the area is expected to be low to moderate. Good safety features such as a lack of frontage fencing and two-way vehicle movement are provided so that vehicles can safely exit the site in a forward-facing manner. The area occupied by the vehicle crossing will also be well defined so that pedestrians can anticipate vehicle paths along the road reserve.

*(iv) existing community or public infrastructure located in the adjoining road, such as bus stops, bus lanes, footpaths and cycleways.*

**The Traffic Group comment:** Onsite manuevering is demonstrated through the 85th percentile vehicle tracking and no effects will be made to the existing public infrastructure located on the adjoining road.

*(b) effects on pedestrian amenity or the amenity of the streetscape, having regard to:*

*(i) the effect of additional crossings or crossings which exceed the maximum width; or*

*(ii) effects on pedestrian amenity and the continuity of activities and pedestrian movement at street level in the Business – City Centre Zone, Business – Metropolitan Centre Zone, Business – Town Centre Zone and Business – Local Centre Zone.*

**The Traffic Group comment:** The vehicle crossing and accessway will enable vehicles to stop safely prior to crossing the footpath due to safety features such as no frontage fencing and a flat driveway profile.

*(c) the practicality and adequacy of parking, loading and access arrangements having regard to:*

*(i) site limitations, configuration of buildings and activities, user requirements and operational requirements;*

**The Traffic Group comment:** Onsite maneuvering can be achieved by the proposed vehicles as demonstrated by the 85th percentile vehicle tracking curves and the lack of frontage fencing can adequately provide intervisibility between egressing vehicles and pedestrians along the pedestrian footpath.

*(ii) the ability of the access to accommodate the nature and volume of traffic and vehicle types expected to use the access. This may include considering whether a wider vehicle crossing is required to:*

*• comply with the tracking curve applicable to the largest vehicle anticipated to use the site regularly;*

**The Traffic Group comment:** The crossing is sufficient to accommodate the nature of traffic for the development.

*• accommodate the traffic volumes anticipated to use the crossing, especially where it is desirable to separate left and right turn exit lanes;*

*o the desirability of separating truck movements accessing a site from customer vehicle movements;*

*o the extent to which reduced manoeuvring and parking space dimensions can be accommodated because the parking will be used by regular users familiar with the layout, rather than by casual users;*

**The Traffic Group comment:** The expected traffic volume via the access is high and the existing vehicle crossing is sufficient to accommodate the proposed traffic movement as two-way vehicle movement can be achieved.

*(iii) any use of mechanical parking installation such as car stackers or turntables does not result in queuing beyond the site boundary; or*

**The Traffic Group comment:** No mechanical parking installation are proposed.

## 7. PC79 STANDARD DISCUSSION

| PC 79 Provisions | Assessment | Complies? |
|---|---|---|
| **E27.6.2 Number of parking and loading spaces**<br>(6) Bicycle parking:<br>(e) the activities specified in Table E27.6.2.5 must provide the minimum number of bicycle parking spaces specified; and<br>(a) for residential developments, the required secure long–stay bicycle parking must be located and designed in a manner that (is):<br>i) not part of any required outdoor living space or landscaped area;<br>ii) in a location accessible from either the road, vehicle access, pedestrian access or car parking area;<br>iii) sheltered from the weather;<br>iv) lockable and secure; | The existing auditorium has a total GFA of approximately 1022m$^2$ and approximately 1176m$^2$ is proposed for the new auditorium which leads to a requirement of eleven visitor bicycle parking spaces and five secure spaces.<br>The proposed development provides sixteen bicycle parking spaces adjacent to the car parking area, in compliance with the Unitary Plan requirements. | Yes |
| **Standard E27.6.2(8)**<br>(8) Number of loading spaces:<br>(a) all activities must provide loading as specified in Table E27.6.2.7.<br>(b) residential activities where part of the site has frontage to an arterial road as identified on the planning maps, must provide loading as specified in Table E27.6.2.7A. | A loading space is not required. | N/A |
| **Standard E27.6.2.(9)**<br>(9) Fractional spaces:<br>(a) where the calculation of the permitted parking results in a fractional space, any fraction that is less than one-half will be disregarded and any fraction of one-half or more will be counted as one space. If there are different activities within a development, the parking permitted for each activity must be added together prior to rounding. | N/A | N/A |
| **E27.6.3.1. Size and location of parking spaces**<br>(1) Every parking space must:<br>(a) comply with the minimum dimensions given in Table E27.6.3.1.1 and Figure E27.6.3.1.1; except accessible parking dimensions and accessible route requirements must be designed in accordance with the New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121-2001); and | Compliance under E27.6.3.1.1 is achieved. | Yes |
| **E27.6.3.2. Size and location of loading spaces**<br>(1) Every loading space must:<br>… | N/A | N/A |

| | | |
|---|---|---|
| (d) comply with the following when any yard of a site is used to provide the loading space (where it is permitted within the zone): …<br>(ii) the use of the loading space does not create a traffic hazard on the road at any time and<br>(e) have a maximum crossfall of 1:50 (2%) in all directions. | | |
| **E27.6.3.2(A) Accessible Parking**<br>(1) Accessible parking must be provided for all new activities, changes of activity type, and / or the expansion or intensification of an existing activity in all zones, except for those listed below in E27.6.3.2(A)(2);<br>(2) Accessible parking is not required in the following zones, unless car parking is provided on site, in which case the required number of accessible parking spaces must be determined in accordance with Table 1 or Table 2 below, whichever is relevant:<br>Business Zones:<br>Business – City Centre Zone;<br>Business – Metropolitan Centre Zone;<br>Business – Town Centre Zone;<br>Business – Local Centre Zone;<br>Business – Mixed Use Zone;<br>Business – Neighbourhood Centre Zone.<br><br>Residential zones:<br>Residential - Terrace Housing and Apartment Buildings Zone.<br>(3) For residential developments in residential zones (excluding the Terrace Housing and Apartment Buildings Zone unless car parking is provided on site), accessible parking spaces must be provided for developments of 10 or more dwellings on a site.<br>(4) The required number of onsite accessible parking spaces provided must be calculated using the following method:<br>(i) For non-residential land uses;<br>Step 1 - Use the Parking Demand Guidelines in Appendix 23 to determine the theoretical parking demand<br>Step 2 - Use Table 1 – Number of accessible parking spaces – Non-Residential, below to determine the required number of accessible car park spaces based on either the number of parking spaces that are proposed to be provided or the theoretical parking demand calculated in step 1, whichever is the higher.<br>(ii) For retirement villages, supported residential care, visitor accommodation and boarding houses<br>The same method for calculating the required number of onsite accessible parking spaces for non-residential uses in 4(i) applies.<br>(iii) For residential land uses<br>The required number of accessible parking spaces provided must be in accordance with Table 2 below: | Six accessible carparks are proposed for the site. The accessible parking spaces have been designed in accordance with the AS/NZS 2890.6 standard which is in line with the Building Code.<br><br>The accessible car parking spaces will have a width of 2.7m and a depth of 5m, with a shared space of 1m width adjacent to the mobility car spaces. A maneuvering width of 7.5m minimum is proposed which complies with E27.6.3.1.1. | Yes |
| **E27.6.3.3 Access and manoeuvring**<br>(2A) For every loading space required by Table E27.6.3.2.1.(T137A) the access and manoeuvring areas associated with that loading space must | N/A | N/A |

| | | |
|---|---|---|
| accommodate the 6.4m van tracking curves set out in Figure E27.6.3.3.3. | | |
| **E27.6.3.4 Reverse manoeuvring**<br>(1) Sufficient space must be provided on the site so vehicles do not need to reverse off the site or onto or off the road from any site where any of the following apply:<br>(a) four or more parking spaces are served by a single access;<br>(b) there is more than 30m between the parking space and the road boundary of the site; or<br>(c) access would be from an arterial road or otherwise within a Vehicle Access Restriction covered in Standard E27.6.4.1. | N/A | N/A |
| **E27.6.3.4A Heavy vehicle access**<br>(1) Where a site in a residential zone provides heavy vehicle access it must provide sufficient space on the site so an 8m heavy vehicle does not need to reverse onto or off the site or road, with a maximum reverse manoeuvring distance within the site of 12m.<br>(2) Heavy vehicle access and manoeuvring areas associated with access required by E27.6.3.4A.(1) must comply with the tracking curves set out in the Land Transport New Zealand Road and traffic guidelines: RTS 18: New Zealand on-road tracking curves for heavy motor vehicles (2007). | N/A | N/A |
| **E27.6.3.5 Vertical Clearance**<br>(1) To ensure vehicles can pass safely under overhead structures to access any parking and loading spaces, the minimum clearance between the formed surface and the structure must be:<br>(a) 2.1m where access and/or parking for cars is provided for residential activities;<br>(b) 2.3m where access and/or parking for cars is provided for all other activities;<br>(c) 2.5m where access and/or accessible parking is provided and/or required;<br>(ca) 2.8m where loading is required for residential activities denoted with an asterisk (*) in Table E27.6.2.7A;<br>(cb) 3.8m where heavy vehicle access in Standard E27.6.3.4A is provided; or<br>(d) 3.8m where loading is required in Table E27.6.2.7 | A 2.5m vertical clearance is achieved for accessible parking. | Yes |
| **E27.6.3.7 Lighting**<br>(1) 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.<br>(2) Lighting is required, in residential zones to primary pedestrian access, vehicle access, parking and manoeuvring areas, where any of the following apply:<br>(a) There are four or more dwellings accessible from a primary pedestrian access which is not adjacent to a vehicle access; | The site is not located in a residential zone and a lighting plan is not proposed as the proposed hours of operation will be during day-time hours only. | N/A |

| | | |
|---|---|---|
| (b) There are 10 or more parking spaces; or<br>(c) There are 10 or more dwellings.<br>Adequate lighting must be provided during the hours of darkness in a manner that complies with the rules in Section E24 Lighting. | | |
| **E27.6.4.3 Width of vehicle access, queuing and speed management requirements**<br>(1) Every on-site parking and loading space must have vehicle access from a road, with the vehicle access complying with the following standards:<br>(a) passing bays are provided in accordance with Table E27.6.4.3.1; and<br>(b) meeting the minimum formed access width specified in Table E27.4.3.2 and<br>(c) meeting the minimum speed management measure spacing specified in Table E27.6.4.3.3. | The site is not located in a residential zone. | N/A |
| **E27.6.6 Design and location of pedestrian access in residential zones**<br>(1) Where two or more dwellings are proposed in residential zones, primary pedestrian access must be provided which meets the following:<br>(a) have the minimum pedestrian access width and separation specified in Table E27.6.6.1 for its full length<br>(c) have a gradient no greater than:<br>(i) 1 in 12 for pedestrian access which is not adjacent to vehicle access; (ii) the maximum vehicle access gradient as specified in Table E27.6.4.4.1 where the pedestrian access is adjacent to vehicle access;<br>(e) have a surface treatment which is firm, stable and slip resistant in any weather conditions;<br>(f) provide direct and continuous access to the dwellings from a public footpath;<br>(g) be free from permanent obstructions and have a clear height of at least 2.1m for its full length<br>(2) A minimum clear width of 3m and a minimum clear height of 2.1m for its full length is required for primary pedestrian access where not adjacent to vehicle access and serving:<br>(a) up to three dwellings and has a length greater than 50m; or (b) four or more dwellings.<br>(3) For the purposes of (2) above, the clear width may include:<br>(a) the minimum 1.8m formed primary pedestrian access width; (b) landscape treatment with a maximum mature height of 600mm; (c) lighting infrastructure.<br>(4) Standards E27.6.6(1), (2) and (3) above do not apply where:<br>(a) up to three dwellings are proposed on a site and vehicle access is provided to each dwelling; or (b) a dwelling directly fronts and has direct access to a street.<br>(5) For four or more dwellings in residential zones, pedestrian access must be provided to each parking space within a parking area (excluding garages) consisting of four or more parking spaces served by the same vehicle access and: | Not Applicable – the site is not located in a residential zone. | N/A |

| | | |
|---|---|---|
| (a) have a minimum width of 1.2m; (b) be vertically separated from trafficable areas as shown in Figure E27.6.4.3.1; (c) connect to the primary pedestrian access or the dwellings associated with those parking spaces; (d) have a surface treatment which is firm, stable and slip resistant in any weather condition; and (e) be free from permanent obstructions and have a clear height of 2.1m for its full length.<br>This standard does not apply where the pedestrian access forms part of a primary pedestrian access. | | |
| **E27.6.7 Provision for electric vehicle charging**<br>(1) Any new dwellings with car parking (with the exception of new detached dwellings) must provide each undercover car park with the capability to install Electric Vehicle Supply Equipment with designated space for the necessary conduit, circuit and metering between the car park and an electrical distribution board on the same building storey, or ground level if the car parking space is at ground level.<br>(a) This standard does not apply to any car parking permanently allocated to visitors. | Not applicable – undercover parking are not proposed. | N/A |

## 8. SUMMARY

This traffic impact assessment report has considered and analyzed the possible impacts of the proposed development concerning the following issues:

• Existing road network;

• Pedestrian safety within the area;

• Provide an assessment against the Auckland Unitary Plan E27 Standards requirements.

The development has complied with the Auckland Unitary Plan Section E27 transportation requirements except for the infringements in the vehicle crossing width and lighting provision.

The available sight distances at the vehicle crossing have met the minimum recommended distance as per the NZTA guideline RTS6.

Based on the analysis described in this report, the following conclusions can be made in respect of the proposed residential subdivision at 12 Jellicoe Road:

- There are no existing safety patterns along the local roads surrounding the site.
- The proposed parking provision and design comply with Auckland Unitary Plan standards.
- The proposals will provide pedestrian connectivity between building entrances, parking areas and the public footpath network.

If you have any questions or further information, please do not hesitate to get in contact with us.

Yours Sincerely,

**JACK SUN**
Traffic & Transportation Engineer | BE(Hons)
M: +64 22 159 2116
E: jack.sun@thetrafficgroup.co.nz