TRAFFIC PLANNING CONSULTANTS LTD

# PROPOSED RESIDENTIAL DEVELOPMENT

# 53 SMALL ROAD
# SILVERDALE

## TRANSPORT ASSESSMENT

*Prepared By:*
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February 2025
250034
Issue D – Final

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## Project Information:

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|---|---|
| **Client** | East Coast Heights Ltd. |
| **Job Number** | 250034 |
| **Title** | Proposed Residential Development – 53 Small Road, Silverdale<br>Transport Assessment |
| **Prepared By** | Udit Bhatti |
| **Date** | February 2025 |

## Document History and Status

| Revision | Date Issued | Reviewed By | Approved by | Date Approved | Status |
|---|---|---|---|---|---|
| A | 15/02/2025 | A Sergejew | T Langwell | 18/02/2025 | Draft |
| B | 19/02/2025 | T Langwell | T Langwell | 19/02/2025 | Draft |
| C | 21/02/2025 | T Langwell | T Langwell | 23/02/2025 | Draft |
| D | 24/02/2025 | T Langwell | T Langwell | 24/02/2025 | Final |
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# 1.0 Introduction

This report examines and describes the traffic and parking effects of a proposal to establish 17 residential dwellings at 53 Small Road, Silverdale, with access via Bronzewater Drive.

The site is zoned as Business – General Business Zone and is also a part of Silverdale 2 precinct under the Auckland Unitary Plan (AUP). The site's location is illustrated in **Figure 1**.

This assessment examines and describes the on-site layout with regard to access, circulation, and parking provision. This assessment also considers the likely impacts of the proposal on the surrounding transport environment and considers the application in terms of the relevant AUP standards and assessment criteria.

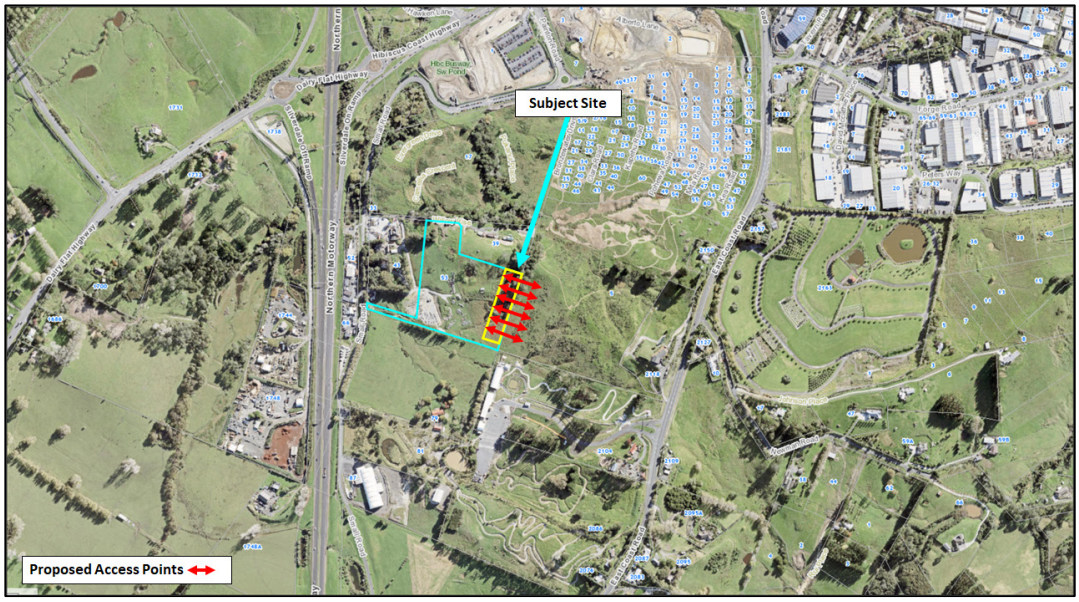



**Figure 1: The Site**
*Image Source: Auckland Council GeoMaps*

# 2.0 Existing Traffic Environment

## 2.1 Existing Site Traffic Conditions

The site is currently undeveloped farmland. The balance of the site is subject to an application for business and industrial activities along the western portion of the site and fronting Small Road.

## 2.2 The Adjacent Road Network

### 2.2.1 Bronzewater Drive

A 200-metre section of Bronzewater Drive is currently constructed, and its further extension to the boundary of the Snow Planet site and past 53 Small Road is part of a separate development within the Silverdale 2 precinct. It is a local road and is posted with a speed limit of 50 km/h.

It has a general north-south alignment forming a roundabout with Small Road/Goldwater Drive/Painton Road at its northern end and continuing south past its intersection with Silverwater Drive providing access to the proposal site.

It has a carriageway width of approximately 6.5 metres providing one traffic lane in each direction. On-street parking is prohibited on both sides of the road. A dedicated cycle lane and a footpath are provided along both sides of the road. Bronzewater Drive in future, will provide a key connection to abutting residential and commercial/industrial activities and the Hibiscus Coast Station. It is estimated that currently, Bronzewater Drive has an ADT of some 150 vehicles per day.

## 2.3 Crash History

As this section of Bronzewater Drive is still under construction there is no data available within the NZTA CAS database.

## 2.4 Public Transport Accessibility

The Hibiscus Coast Station – Park & Ride facility is located some 900 metres north of the site. It provides a 24-hour bicycle parking facility and car parking facility for over 600 vehicles. The routes that operate from Hibiscus Coast Station are shown in Figure 2, which generally provide services on a 15 – 30-minute frequency.

Overall, the site is suitably accessible via public transport.

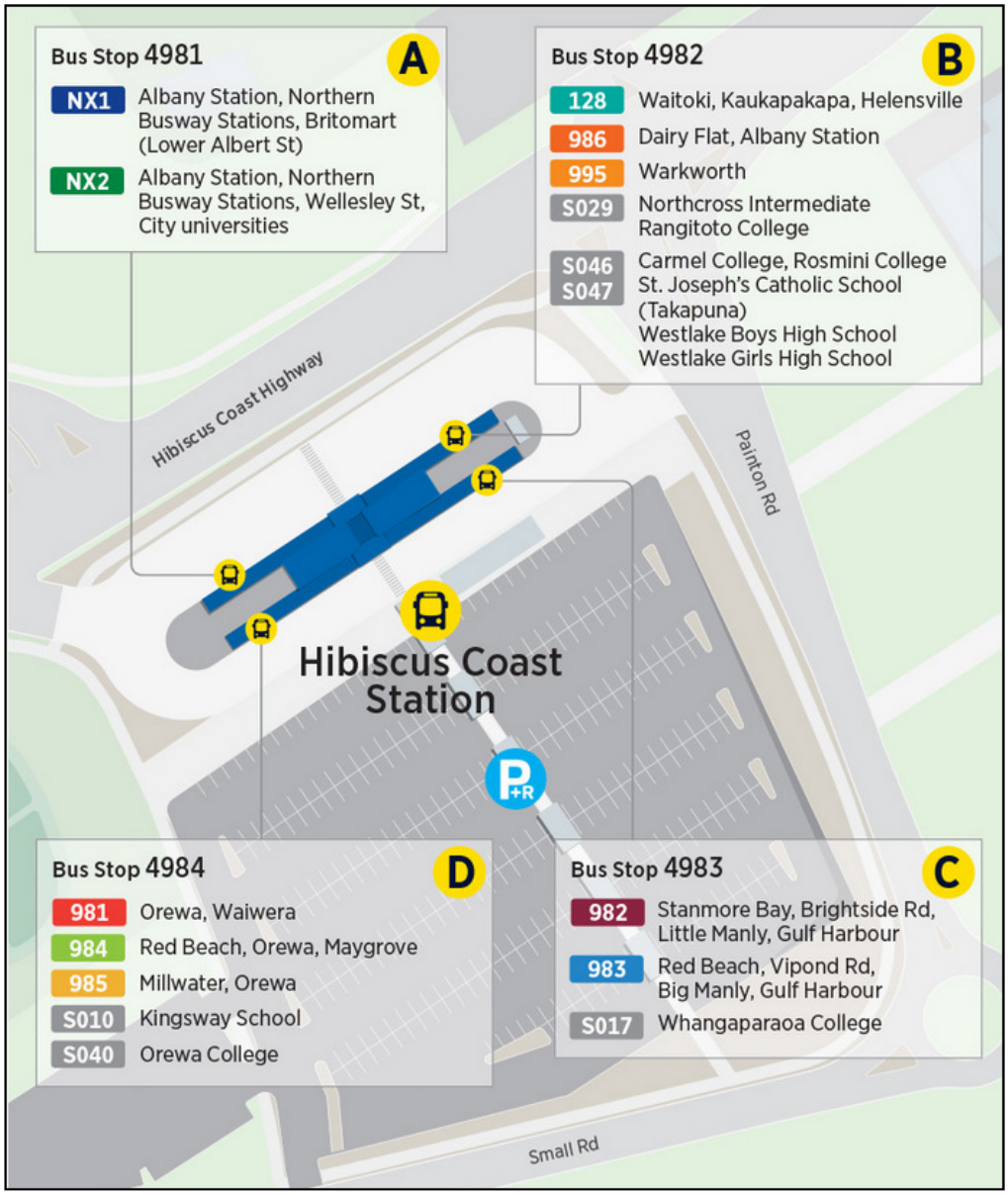



**Figure 2: Hibiscus Coast Station**
*Image Source: https://at.govt.nz/projects-roadworks/hibiscus-coast-bus-station/*

## 2.5 Walking and Cycling Facilities

A dedicated cycleway is provided on both sides of Bronzewater Drive from Goldwater Drive to the current southern extent of Bronzewater Drive (both sides of the road) which will be extended along the entire length of Bronzewater Drive with future developments.

There is a shared path available running parallel to Goldwater Drive between Bronzewater Drive to East Coast Road. Other shared paths are available along Small Road and Painton Road, connecting to the shared path along the Hibiscus Coast Highway.

Bicycle parking facilities are currently provided within the Hibiscus Coast Station parking area. **Figure 3** below illustrates the cycling provision within the site's vicinity.

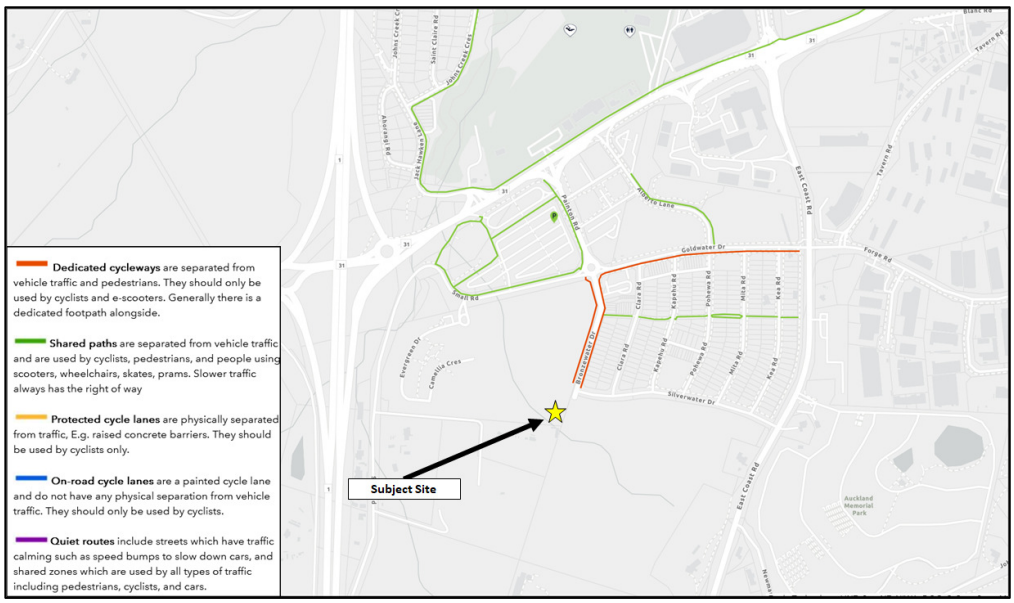



**Figure 3: Site Vicinity Cycling Provisions**
*Image Source: mahere.at.govt.nz*

# 3.0 THE PROPOSAL

## 3.1 General Description

The proposal involves the development of the site and construction of 17 residential dwellings with one x 5-bedroom, nine x 4-bedroom and seven x 3-bedroom dwellings. Each dwelling will be provided with an individual vehicle access and two parking spaces on-site. The general layout of each lot is shown in **Figure 4** below.

Further discussion of the appropriateness and formation of the access points and parking is included later in this report.

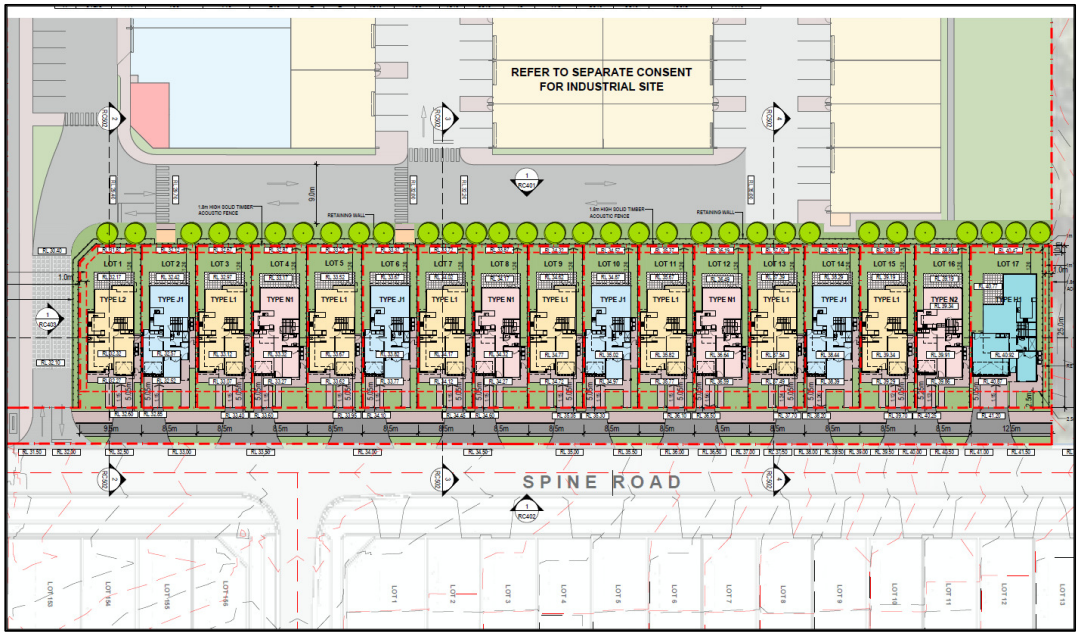



**Figure 4: Site Layout**
*Source: Woodhams Meikle Zhan Architects*

## 3.2 Traffic Generation

Residential trip generation data taken from the Road and Marine Services' (New South Wales) publication "Guide to Traffic Generating Developments" provides trip generation estimates based on dwelling sizes within low and medium-density developments:

- For median density one/two-bedroom dwellings, it indicates a rate of 4.0-5.0 daily trips (0.4-0.5 peak hour trips) per dwelling.
- For median density three-bedroom+ dwellings, it indicates a rate of 5.0-6.5 daily trips (0.5-.65 peak hour trip) per dwelling.
- For larger standalone dwellings, it indicates a rate of 9.0 daily trips (0.85 peak hour trips) per dwelling.

Utilising these rates, the trip generation for the site was estimated for the proposed development and the results are summarised in **Table 1**.

Table 1: Site Estimated Trip Generation

| S. No | Dwelling Size | Number of Dwellings | Daily Generation Rate | Estimated Daily Generation | Peak Hour Generation Rate | Estimated Peak Hour Generation |
|---|---|---|---|---|---|---|
| **1** | 3-bed | **7** | 6.5 | **45.5 (46)** | 0.65 | **4.55 (5)** |
| **2** | 4-bed | **9** | 8 | **72** | 0.8 | **6.4 (6)** |
| **3** | 5-bed | **1** | 9 | **9** | 0.85 | **0.85 (1)** |
| **Total** | | **17** | | **127** | | **12** |

The result of the site's proposed 127 daily vehicle movements is not considered to have any tangible effect on the local or wider transport environment (when spread out across the day).

Most of the additional trips would occur during the morning peak period (7am-10am), mid-day peak period (11am-1pm) and the afternoon peak period (3pm-6pm) with a peak of no more than 12 vehicles per hour. During these periods, traffic volumes are generally higher, and as a result, the additional movement would represent a small portion of the existing hourly volume and would not have an adverse impact on the operation of the local road network.

## 3.3 Vehicle Access

### 3.3.1 Vehicle Crossings

A total of 17 vehicle crossings will be provided on-site. The vehicle crossings serving Lots 1-16 will be provided each with a width of 2.8 metres serving two parking spaces, whilst one vehicle crossing serving Lot 17 will be provided with a width of 5.3 metres serving two parking spaces.

All the vehicle crossings will be located more than 2.0 metres from the neighbouring property's vehicle crossing, where a minimum separation of 2.0 metres is required.

Vehicle crossings for Lots 1-16 are grouped such that a separation of 1.5 metres is available between them. Similar vehicle crossing configurations and site typologies are typical in this area of Silverdale and considered the most appropriate outcome to optimise pedestrian safety and amenity while maintaining property access.

The four vehicle crossings serving Lots 3-6 will be located within 10.0 metres of a new proposed intersection on Bronzewater Drive as part of an adjacent development where a minimum separation of 10.0 metres is required.

### 3.3.2 Vehicle Accesses

Within the site, the vehicle accesses serving the two parking spaces associated with Lots 1-16 will be provided with a minimum width of 2.8 metres enclosed within a 3.0-metre corridor free from any structure.

The vehicle access for Lot 17 will be provided with a minimum width of 5.3 metres serving two parking spaces.

Twelve vehicle accesses will be provided with a gradient of 1 in 15 (6.67%), one with 1 in 56 (1.78%), and the remaining four will be provided with a gradient between 1 in 12 (8.3%) and 1 in 26 (3.8%).

Three accesses will be provided with a platform gradient of less than 1 in 20 (5.0%), whilst fourteen accesses will be provided with a platform gradient exceeding 1 in 20 (5.0%), where a maximum gradient of 1 in 20 (5.0%) is permitted.

## 3.4 Sight Distance

When considering vehicle access to a site, it is important that adequate sight distance is provided and that the access is designed to ensure safe traffic and pedestrian movement.

In respect of sight distance, the appropriate standard to use is the Land Transport Safety Authority publication "*Guidelines for Visibility at Driveways*." 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 are dependent upon the traffic generation of the proposal, the 85$^{th}$ percentile speed of vehicles on the frontage road and also the classification of the frontage road.

Bronzewater Drive will be classified as a local road and will be posted with a speed limit of 50 km/h. Due to the urban residential environment, the 85$^{th}$ percentile vehicle operating speed along the site frontage is expected to be no greater than 50 km/h.

The predicted number of vehicle movements at all the site's accesses is lower than the rating threshold of 200 vpd, such that the accesses are defined as 'low volume' according to the guideline. On this basis, the guideline recommends a minimum sight distance of 40 metres. As Bronzewater Drive along the site frontage will have a straight alignment, a minimum sight distance of 40 metres is expected to be available.

Overall, the proposed vehicle access arrangement is considered acceptable within the future traffic environment.

## 3.5 Pedestrian Access

All the proposed dwellings will be provided with direct pedestrian access via the footpath on Bronzewater Drive.

## 3.6 Car Parking

Two parking spaces are proposed with each dwelling. Lot 1-16 will be provided with a single garage and a secondary parking space, whilst Lot 17 will be provided with a double garage. Under the AUP, there is no requirement to provide any parking spaces within the General Business Zone for residential activity.

All parking spaces will be formed, drained, and will be set out as angled (90°) parking spaces.

The open parking spaces will be at least 2.7 metres wide and 5.0 metres deep and will have a minimum manoeuvring depth of 6.0 metres available, including a portion of the carriageway on Bronzewater Drive.

Sixteen garages associated with Lots 1-16 will be single garages and will have a door width of 2.5 metres. Internally, they will be 3.0 metres wide and 5.4 metres deep, with more than 7.0 metres of manoeuvring depth available. Lot 17 will be provided with a double garage having a door width of 5.3 metres. Internally, it will be 5.6 metres wide, at least 5.4 metres deep with more than 7.0 metres of manoeuvring depth available.

There will be 11 secondary parking spaces will have a gradient of 1 in 15 (6.67%), one with 1 in 56 (1.78%), and the remaining four will be provided with a gradient between 1 in 12 (8.3%) and 1 in 26 (3.8%) where a maximum gradient of 1 in 5 (20.0%) is permitted.

Vehicles will need to reverse to/from all the vehicle accesses. Under the AUP, reverse manoeuvring is not permitted from vehicle crossings, which are located within the vehicle access restriction area. The vehicle crossings serving Lots 3-6 will be located within a vehicle access restriction area.

## 3.7 Refuse Collection and Deliveries

The proposal is expected to be serviced predominantly by trucks collecting refuse on a regular basis and, to a lesser extent, by trucks shifting furniture to and from the residential dwellings. The refuse collection will occur on-street where the bins will be wheeled out and kept on the berm and the refuse truck will empty them. Delivery vans will also be able to utilise the on-street space available while serving the site.

Overall, it is considered that the design is adequate to meet the needs of the truck activity associated with the new residential development.

# 4.0 AUCKLAND UNITARY PLAN REQUIREMENTS

## 4.1 Section E27 – Transport Standards

Section E27 of the Auckland Unitary Plan sets out the development standards relating to transport. **Table 2** lists the relevant standards that apply to this development and comments on compliance. Where there is non-compliance, further assessment has been undertaken against the criteria set out in Section E27.8.2 of the AUP.

Table 2: Transport Development Controls

| Standard | Requirement/Details | Comment |
|---|---|---|
| E27.6.1<br>Traffic Generation | Set the threshold for when resource consent as a restricted discretionary activity is required.<br>There is no trip generation requirement for:<br>▪ commercial development with warehouse less than 20,000m$^2$ of GFA, other industrial activity less than 10,000m$^2$ of GFA and office less than 5000m$^2$ of GFA.<br>▪ residential development having less than 100 dwellings, and<br>▪ retail activity (non-drive through) less than 1,667 m$^2$ of GFA. | The proposal is for 17 residential dwellings – **does not apply** |
| E27.6.2 (1)<br>Number of Parking Spaces | Defines the minimum and the maximum number of parking spaces for new developments. | Two parking spaces will be provided per dwelling where there is no minimum or maximum parking required – **complies** |
| E27.6.2 (6)<br>Bicycle Parking | Defines the number of bicycle parking spaces required for new residential developments.<br>There is a requirement for one visitor space per 20 dwellings and 1 secure space per dwelling without a garage. | The proposal is for 17 residential dwellings and each dwelling will be provided with a garage – **complies** |
| E27.6.2 (7)<br>End-of-Trip Facilities | End-of-trip facilities to be provided for office, education, or hospital facilities. | The proposal is for a residential development – **does not apply** |
| E27.6.2 (8)<br>Number of Loading Spaces | Outlines the minimum loading space requirements for new developments. | The GFA of the proposed development is less than 5,000 m$^2$ where a loading space is required for developments having a GFA greater than 5,000 m$^2$ – **does not apply** |
| E27.6.3.1 (1)<br>Size and Location of Parking Spaces | Defines the size, use and location of parking spaces. | All spaces are located within the same site, will not be used for any other purposes, and will be available at all times – **complies.**<br>The open parking spaces will be at least 2.7 metres wide, 5.0 metres deep and will have a minimum manoeuvring depth of |

| Standard | Requirement/Details | Comment |
|---|---|---|
| | | 6.0 metres available including a portion of the carriageway on Bronzewater Drive – **complies**<br>Sixteen garages associated with Lots 1-16 will be single garages and will have a door width of 2.5 metres. Internally, they will be 3.0 metres wide, 5.4 metres deep with more than 7.0 metres of manoeuvring depth available – **complies**<br>Lot 17 will be provided with a double garage having a door width of 5.3 metres. Internally, it will be 5.6 metres wide, at least 5.4 metres deep with more than 7.0 metres of manoeuvring depth available – **complies** |
| E27.6.3.2<br>Size and Location of Loading Spaces | Defines the size, use and location of loading spaces.<br>For other activity, the loading bay needs to be at least 8m long and 3.5m wide. | A loading bay is not provided on-site – **does not apply.** |
| E27.6.3.3<br>Access and Manoeuvring for Parking | Defines the requirements for design vehicles, driveways, manoeuvring area, and stacked parking allowances. | All parking spaces will have dedicated access aisles to accommodate 85$^{th}$ percentile vehicle tracking – **complies** |
| E27.6.3.4<br>Reverse Manoeuvring | Defines the conditions in which reverse manoeuvring is acceptable to and from a site. | Vehicles from Lots 3-6 will be reversing where the access is situated within 10 metres of an intersection – **does not comply** |
| E27.6.3.5<br>Vertical Clearance | Defines the minimum overhead clearance for vehicles that can pass safely under overhead structures. | All the garages will be provided with a minimum vertical clearance of 2.1 metres – **complies** |
| E27.6.3.6<br>Formations and Gradients | Defines the formation and gradients for all parking spaces and manoeuvring areas. | All parking areas will be formed, drained, with all-weather surfaces – **complies**<br>12 secondary parking spaces will have a gradient of 1 in 15 (6.67%), one with 1 in 56 (1.78%) and rest four will be provided with a gradient between 1 in 12 (8.3%) and 1 in 26 (3.8%) where a maximum gradient of 1 in 20 (5%) is permitted – **does not comply**<br>The garages will be formed on near flat gradients with a typical longitudinal gradient no steeper than 1 in 20 (5.0%) – **complies**<br>Manoeuvring areas will have a gradient not exceeding 1 in 8 (12.5%) – **complies** |
| E27.6.3.7<br>Lighting | Lighting is required where there are 10 or more parking spaces and | Suitable lighting will be provided – **complies** |

| Standard | Requirement/Details | Comment |
|---|---|---|
| | associated pedestrian routes used in the hours of darkness. | |
| E27.6.4.1<br>Vehicle Access Restrictions | Defines the acceptable locations of access points in relation to strategic roads and intersections. | The four vehicle crossings serving lots 3-6 will be located within an intersection on Bronzewater Drive where a minimum separation of 10.0 metres is required – **does not comply** |
| E27.6.4.2<br>Width and Number of Vehicle Crossings | Defines the maximum number of vehicle crossings, proximity to others and permitted widths. | A total of 17 vehicle crossings will be provided on-site where six vehicle crossings are permitted over a site frontage of 150 metres – **does not comply**<br>The vehicle crossings serving Lots 1-16 will be provided with a width of 2.8 metres serving two parking spaces – **complies**<br>One vehicle crossing serving Lot 17 will be provided with a width of 5.3 metres serving two parking spaces (maximum 2.75-3.0 metres permitted) – **does not comply**<br>The proposed vehicle crossings will be separated from the adjacent property's vehicle crossings by more than 2.0 metres – **complies**<br>Vehicle crossings for Lots 1-16 are grouped such that a separation of 1.5 metres is available between them, where a minimum separation of 6.0 metres is required – **does not comply** |
| E27.6.4.3<br>Width of Vehicle Access and Queuing | Defines the standards for vehicle access widths for on-site parking and queuing at entrance control mechanisms. | Within the site, the vehicle accesses serving the two parking spaces associated with Lots 1-16 will be provided with a minimum width of 2.8 metres enclosed within a 3.0 metres corridor free from any structure – **complies**<br>The vehicle access for Lot 17 will be provided with a minimum width of 5.3 metres serving four parking spaces – **complies** |
| E27.6.4.4<br>Gradient of Vehicle Access | Defines the gradients of circulating aisles for vehicle movements. | Twelve vehicle accesses will be provided with a gradient of 1 in 15 (6.67%), one with 1 in 56 (1.78%) and rest four will be provided with a gradient between 1 in 12 (8.3%) and 1 in 26 (3.8%) where a maximum gradient of 1 in 5 (20%) is permitted – **complies**<br>Three accesses will be provided with a platform gradient of less than 1 in 20 (5.0%), whilst fourteen accesses will be provided with a platform gradient exceeding 1 in 20 (5.0%), where a |

| Standard | Requirement/Details | Comment |
|---|---|---|
| | | maximum gradient of 1 in 20 (5.0%) is permitted – **does not comply** |
| E27.6.5<br>Design and Location of Pedestrian/ Cycle Facilities | Defines the requirements for off-road pedestrian and cycle facilities. | The pedestrian facilities on site are considered to meet the requirements of this standard – **complies.** |

## 4.2 Plan Change 79 – Standards

**Table 3** lists the relevant standards which have been modified or added to the Auckland Unitary Plan by Plan Change 79 that apply to this development and comments on compliance, with respect to Transport Engineering matters. Where there is non-compliance, further assessment has been undertaken against the criteria set out in the AUP.

**Table 3: PC79 Development Controls**

| Development Control | Requirement/Details | Comment |
|---|---|---|
| E27.6.1<br>Trip Generation | New thresholds for residential uses<br>Dwellings<br>- (TA1) Threshold 1 - 40 dwellings;<br>- (T1) Threshold 2 - 100 dwellings.<br>The lower intensity categories (i.e. TA1, T1A, T2A, T3A) only require consideration of the effects on the safe and efficient operation of the transport network as it relates to active modes and public transport in the immediate vicinity. | The proposal is for 17 residential dwellings – **does not apply** |
| E27.6.2 (6)<br>Bicycle Parking | Long stay bike parking must be designed and located in a manner that is:<br>- Not part of required outdoor living space or landscaped area<br>- Directly access from the road, vehicle access, ped access or car park (i.e. cannot be in a rear yard with access only through a dwelling)<br>- Sheltered from the weather, lockable and secure. | All the residential dwellings will be provided a garage which can accommodate the bicycle parking requirement – **complies** |

| Development Control | Requirement/Details | Comment |
|---|---|---|
| | - Long stay bike parking required at rate of one per dwelling (irrespective of the number of dwellings) when no dedicated garage or basement parking space provided (previously on when more than 20 dwellings provided. | |
| E27.6.2 (8)<br>Number of Loading Spaces | A loading space is now required for all residential activities where part of the site has frontage onto an arterial road. | The site fronts onto a local road – **does not apply**<br>The site's GFA will not exceed 5,000 $m^2$ for residential land-use – **does not apply** |
| E27.6.3.2 (A)<br>Accessible Parking | Accessible parking is now a requirement of all developments (new activities, changes of activity type, or expansion of existing activity) with some exclusions – i.e. not required in certain business zones and THAB zone if no parking is proposed.<br>In residential zones, accessible parking must be provided for development of 10 or more dwellings.<br>In residential zones:<br>- 10-19 dwellings – not less than 1 space;<br>- 20-29 dwellings – not less than 2;<br>- 30-50 dwellings – not less than 3<br>- For every additional 25 dwellings or units – not less than 1. | One accessible parking space will be required under this standard; however, no accessible parking is proposed – does not comply |
| E27.6.3.3. 4A<br>On-site Manoeuvring | Where a site in a residential zone provides heavy vehicle access, it must provide sufficient space onsite so that an 8m heavy vehicle does not need to reverse onto or off the site or road with a maximum reverse | Heavy vehicles are not permitted to access the residential dwellings – **does not apply** |

| Development Control | Requirement/Details | Comment |
|---|---|---|
| | manoeuvre within the site of 12m. | |
| E27.6.4.3<br>Vehicle Access | Requires speed management measures when vehicle access exceeds 30m in a residential zone at locations of not more than 10m from the site boundary with the legal road, and at spacings of not more than 30m. | The vehicle access will have a length of 5.0 metres – **does not apply** |
| E27.6.6<br>Pedestrian Access | Sets out the requirements for pedestrian access. | All the dwellings will be provided direct access via the public footpath along Bronzewater Drive – **complies** |
| E27.6.7<br>Electric Vehicle Charging | Any new dwelling with car parking (excluding detached dwellings) must provide each undercover car park with the capability to install electric vehicle supply equipment (note definition below) with designated space for necessary conduit, circuit and metering between the car park and an electrical distribution board on the same building storey, or ground level (if at ground level). | It is understood that all the garages will be equipped with the capability to provide electric vehicle charging provisions – **complies** |

# 5.0 AUCKLAND UNITARY PLAN ASSESSMENT CRITERIA

## 5.1 Section E27 – Assessment Criteria

Section E27.8.2 of the AUP sets out the assessment criteria when there is an infringement in development standards for a development. For this proposal, resource consent is required under the following standards:

- E27.6.3.4 – Reverse Manoeuvring (Criteria 8);
- E27.6.3.6 – Formation and Gradient (Criteria 8);
- E27.6.4.1 – Vehicle Access Restriction (Criteria 11);
- E27.6.4.2 – Width and Number of Vehicle Crossings (Criteria 8);
- E27.6.4.4 – Gradient of the Vehicle Access (Criteria 8).

The following lists the relevant assessment criteria for these infringements and comments on each as they apply to this development.

***8. Any activity or development which infringes the standards for 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;*

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

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

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

*(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.*

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

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

*(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;*
- *accommodate the traffic volumes anticipated to use the crossing, especially where it is desirable to separate left and right turn exit lanes;*
  - *the desirability of separating truck movements accessing a site from customer vehicle movements;*
  - *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;*

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

*(v) any stacked parking is allocated and managed in such a way that it does not compromise the operation and use of the parking area.*

***11. Construction or use of a vehicle crossing where a Vehicle Access Restriction applies:***

*(d) this applies where a Vehicle Access Restriction is identified in Standard E27.6.4.1(2) and Standard E27.6.4.1(3), other than a Vehicle Access Restriction Level Crossing or a Vehicle Access Restriction Motorway Interchange:*

*(v) effects of the location and design of the access on the safe and efficient operation of the adjacent transport network having regard to:*

- *visibility and safe sight distances;*
- *existing and future traffic conditions including speed, volume, type, current accident rate, and the need for safe manoeuvring;*
- *proximity to and operation of intersections;*
- *existing pedestrian numbers, and estimated future pedestrian numbers having regard to the level of development provided for in this Plan;*
- *existing community or public infrastructure located in the adjoining road, such as bus stops, bus lanes and cycleways;*

*(vi) the effects on 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; or*

*(vii) the practicability and adequacy of the access arrangements considering site limitations, arrangement of buildings and activities, user requirements and operational requirements, proximity to and operation of intersections, having regard to:*

- *the extent to which the site can reasonably be served by different access arrangements including:*
  - *access from another road;*
  - *shared or amalgamated access with another site or sites;*
  - *via a frontage road, such as a slip lane or service road; or*
- *the extent to which the need for access can reasonably be avoided by entering shared parking and/or loading arrangement with another site or sites in the immediate vicinity.*

<u>Comment (E27.6.3.4) – Reverse Manoeuvring (Criteria 8)</u>

The first reason for consent under this standard relates to the requirement for vehicles to reverse from the vehicle crossing serving Lots 3-6, which is located within 10 metres of an intersection on Bronzewater Drive and hence triggering a Vehicle Access Restriction (VAR). Under the AUP, reverse manoeuvring is not permitted to/from a vehicle crossing which is subject to VAR. The following points are made in support of this non-compliance:

- The vehicle crossings are designed with good sightlines and intervisibility and as such provide a safe environment for the drivers to manoeuvre to/from the site;
- With the vehicle crossings serving only two parking spaces and no more than 10 reverse manoeuvres anticipated per day, the likelihood of vehicular interaction is considered low;
- Upon completion, Bronzewater Drive will be classified as a local road with low traffic volumes, therefore, the probability of interaction between vehicles reversing from the site and vehicles manoeuvring the intersection is considered to be low;

- The Council has approved previous consents in this area for developments having similar typologies and similar vehicle access configurations;
- Users of the vehicle crossings will be regular users who will be familiar with the site layouts and aware of any potential conflicts.

Comment (E27.6.3.6) – Formations and Gradients [Criteria 8]

The reason for consent under this standard relates to the gradient of the secondary parking spaces. 12 secondary parking spaces will have a gradient of 1 in 15 (6.67%), one with 1 in 56 (1.78%) and the remaining four will be provided with a gradient between 1 in 12 (8.3%) and 1 in 26 (3.8%) where a maximum gradient of 1 in 20 (5.0%) is permitted. The following points are made in support of this non-compliance:

- Providing complying gradients will require earthworks or retaining structures, and will have an adverse effect on the outdoor amenity of the respective lots;
- All the lots will be provided with two parking spaces, with one space provided within a garage on a near-flat, complying gradient, for use by any residents that may find steeper gradients challenging;
- Sightlines along the road frontage are suitable in both directions. The proposed landscaping and fencing will provide for suitable inter-visibility between vehicles and pedestrians along the road frontage and is unlikely to cause a safety;
- The parking spaces for these lots will be located near the road boundary. Vehicles manoeuvring from these access points will be travelling at low speeds and will be able to stop and give way to pedestrians or other road users, as needed; and
- within the Auckland Transport Code of Practice/NZS 4404:2010, local roads are permitted to have gradients upwards of 1 in 8 (12.5%), where on-street parking is also permitted, indicating that parking on this gradient can operate safely.

Overall, the effect of this non-compliance is considered less than minor.

Comment (E27.6.4.2) –Number of Vehicle Crossing [Criteria 8]

The first reason for consent under this standard relates to the number of vehicle crossings provided on-site. Under the AUP, one vehicle crossing per 25 metres of road frontage along a local road is permitted. The site has a frontage of some 150 metres where six vehicle crossings are permitted and 17 are proposed, therefore, a resource consent is required. The following points are made in support of the proposal:

- The site has not yet been subdivided and post subdivision, each dwelling will be assigned with an individual access which will comply with this standard;
- The vehicle crossings are grouped in such a way as to maximise the separation between them to create more space for on-street amenities and to aid pedestrian safety;
- The accesses have been designed with good sight distance and inter-visibility with each other, and with the footpath/shared path and the carriageway;
- All except one vehicle crossing will serve only two parking spaces and the likelihood of vehicles accessing the adjacent vehicle crossings at the same time is forecast to be very low;
- Proposed low lying vegetation will enhance the peripheral view for vehicles egressing the site and aid them to halt in case of any vehicular or pedestrian interaction; and

- Vehicle speeds entering and exiting the Lots will be low due to the parking being provided immediately within the site boundary.

The second reason for consent under this standard relates to the separation between the vehicle crossings serving the same site. Vehicle crossings for Lots 1-16 are grouped such that a separation of 1.5 metres is available between them, where a minimum separation of 6.0 metres is required. The following points have been made in support of this non-compliance:

- Options were explored to provide a compliant combined vehicle crossing but given that this would mean the vehicle crossings would serve four parking spaces, it would trigger a non-compliance with regard to reverse manoeuvring. It would also provide longer distances between pedestrian refuge areas. Therefore, the current proposals are considered the safest outcome for the site as a whole;
- The site has been proposed with a minimum separation of 1.5 metres between the grouped vehicle crossings which is deemed a sufficient distance for a pedestrian to take refuge in the event of vehicles egressing the site;
- The vehicle crossings are provided in a grouped manner to maximise the intermittent separation between them to provide better on-street amenities and larger pedestrian refuge areas;
- The probability of vehicles accessing the adjacent sites at the same time is considered low given the vehicle crossings are serving only two parking spaces;
- The operating speeds of vehicles accessing/egressing the site is expected to be low as the secondary parking space has been proposed immediately within the site boundary;
- The accesses have been designed with good sightlines and intervisibility which will improve vehicular and pedestrian safety, and
- The users of the accesses will be regular resident users, who will be aware of the fact to stop in the event of any conflict.

Hence, the proposed number of vehicle crossings and separation between them will have less than a minor effect on the overall safety perspective of the site and surrounding footpath network.

<u>Comment (E27.6.4.2) –Width of Vehicle Crossing [Criteria 8]</u>

The reason for consent under this standard relates to the width of the vehicle crossing serving two parking spaces associated with Lot 17. Under the AUP, vehicle crossings serving one or two parking spaces should be provided with a width of 2.75-3.0 metres. As the vehicle crossing is provided with a width of 5.3 metres, resource consent will be required. The following points are made in support of this non-compliance:

- Additional width to the vehicle crossing will provide a better manoeuvring area for the vehicles to access and egress safely from the garage;
- The vehicle crossing is designed with good sight distance and inter-visibility with the footpath and carriageway;
- The crossing serves two parking spaces which will generate a maximum of two peak hour trips, therefore, the likelihood of any vehicular or pedestrian conflict will be low;

- The vehicle crossing is provided with sufficient separation from the adjacent vehicle crossings such that pedestrians will be able to take refuge in the event of any vehicular interaction;
- Vehicle speeds entering and exiting the site will be low due to the parking being provided immediately within the site boundary, and
- The users of the access will be regular and residents who will be aware of the site layout.

For these reasons, the proposed width of the vehicle crossings will have a less than minor effect on the surrounding road environment and are, therefore, considered acceptable.

Comment (E27.6.4.4) – Gradient of the Vehicle Access [Criteria 8]

The reason for consent under this standard relates to the gradient of the vehicle access. The vehicle access should be designed with a gradient of 1 in 20 (5%) at the site boundary for the first four metres to provide a safe place for exiting vehicles to check that the way is clear of pedestrians and vehicles before turning onto the carriageway. Three accesses will be provided with a platform gradient of less than 1 in 20 (5.0%), whilst fourteen accesses will be provided with a platform gradient exceeding 1 in 20 (5.0%), where a maximum gradient of 1 in 20 (5.0%) is permitted. The following points are made in support of this non-compliance:

- To provide a compliant gradient, the site frontage would require excessive retaining which is not considered necessary to safely serve the site and would have negative effects to the amenity provided within the site;
- The accesses are designed in-line with the existing topography of the area to maintain overland flow path allowing for stormwater drainage;
- Due to the existing contours of the site, the proposal is unable to provide platforms with complying gradients. Given that the proposed gradient is considered flat for cars to drive through, and the drivers will be regular users, there is limited opportunity for cars to exit the site at speed such that they will have trouble stopping;
- Bronzewater Drive is a local road with low volumes therefore, the number of occurrences where pedestrians and vehicles may conflict with one another will be minimal. As such, it is expected to be no adverse risk associated with this vehicle access gradient;
- Proposed low lying vegetation will enhance the peripheral view for vehicles egressing the site and aid them to halt in case of any vehicular or pedestrian interaction; and
- Users of the vehicle accesses will be regular residents and will know the site's layout and the need to stop in the event of any vehicular or pedestrian conflict.

Overall, it is considered that the effects of these non-complying gradients will be less than minor.

Comment (E27.6.4.1) – Vehicle Access Restriction [Criteria 11]

The reason for consent under this standard relates to the proposed vehicle crossing for Lots 3-6 being located within the intersection on Bronzewater Drive, where vehicle crossings are only permitted to be located more than 10 metres from any intersection under the AUP. The following points are made in support of the vehicle crossing's location:

- Sight lines and forward visibility to and from the vehicle crossings are good, such that vehicles will be able to identify any potential hazards at the vehicle crossings and intersection;

- Vehicle speeds entering or exiting the site will be low because the parking spaces are provided immediately within the site boundary;
- All the vehicle crossings located within the vehicle access restriction zone will be serving two parking spaces in a stacked arrangement and therefore, only one vehicle will access the site at a time; and
- The users of these vehicle accesses will be residents or tenants and they will be aware of the site constraints and will be comfortable reversing onto Bronzewater Drive.

Overall, it is considered that the proposal is consistent with the outcomes sought by the assessment criteria and as such the effect of the non-compliance is less than minor and the proposal is considered to be acceptable in this respect.

## 5.2 Plan Change 79 – Assessment Criteria

Plan Change 79 sets out the assessment criteria when there is an infringement in development controls for a proposed development. For this proposal, the following items require consent:

- E27.6.3.2 (A) – Accessible Parking (Criteria 4A).

The following lists the relevant assessment criteria for this infringement and comments as applied to this development.

***(4A) any activity or development that provides less than the required number of accessible parking spaces under Standard E27.6.3.2.(A):***

*(a) the trip characteristics of the proposed activities on the site requiring accessible parking spaces;*

*(b) the extent to which it is physically practicable to provide the required accessible parking spaces on the site including in terms of the existing location of buildings, the type of the existing building(s) site dimensions, topography and the availability of access to the road;*

*(c) the availability and capacity of alternative accessible parking in the immediate vicinity, including on street and other public accessible car parking, with an accessible route to and from the building designed in accordance with New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121-2001), to provide the additional parking sought for the proposal;*

*(d) mitigation measures to provide accessible parking which may include measures such as by entering into a shared accessible parking arrangement with another site or sites in the immediate vicinity;*

*(e) the availability of alternatives to private vehicle trips in the immediate vicinity with access to public transport by an accessible route designed in accordance with New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121-2001) and a maximum distance of 200m.*

<u>Comment E27.6.3.2(A) – Accessible Parking [Criteria 4A]</u>

The reason the design is not considered consistent with the PC79 amendments relates to the non-provision of accessible parking spaces. As the proposal consists of 17 lots to accommodate 17 dwellings there is requirement to provide one accessible parking space. The following points are made in support the design:

- Open parking spaces for 12 dwellings are provided against a pedestrian access with a narrow landscaping strip (450 mm) between them which can be modified to provide for an accessible space, if required;
- Lot 17 is provided with two secondary parking spaces side-by-side which can be used as an accessible space;
- Due the site's topography it is difficult to provide a compliant grade of 1 in 50 (2.0%) to the parking area and therefore, an accessible parking space is not provided;
- Once the site is subdivided, each lot will have a single dwelling which will not require an accessible parking space; and
- Any future tenants would be aware of the on-site parking provisions and will not rent/purchase a property if not meeting their requirement.

For these reasons, the proposed parking arrangement will have minimal effects and is therefore considered acceptable.

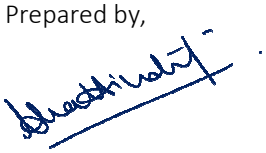
## 6.0 CONCLUSIONS

Based on the assessment described in this report, the following conclusions can be made in respect of the proposal to establish 17 residential dwellings at 53 Small Road, Silverdale:

- A review of the transport standards has identified seven items that require resource consent under the E27 Standards of the Auckland Unitary Plan;
- A further review of the PC 79 standards has identified one additional design matter which will require resource consent. The effects of these are considered acceptable.
- The site is anticipated to generate about 127 vehicle movements per day and 12 vehicle movements per hour during peak times. The anticipated trip generation will not have any significant effect on the operation of the site accesses, and the adjacent road network, and
- Vehicle and pedestrian accesses to the site are designed to a suitable standard such that it will not have an adverse effect on the surrounding road network, or to the safety of pedestrians and vehicles using the site.

Overall, it is considered that the traffic engineering effects of the proposal can be accommodated on the road network without compromising its function, capacity, or safety. Therefore, from a traffic engineering perspective, it is considered that the proposal will have less than a minor impact.

Prepared by,



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