28, 30 & 66 Crestview Rise, Papakura

Proposed Plan Change

Integrated Transportation Assessment

14 November 2024

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1 INTRODUCTION

The proposal is for a Plan Change to rezone sites at 28, 30 and 66 Crestview Rise, Papakura from Rural - Countryside Living Zone to Mixed Housing Urban Zone and relocate the RUB to incorporate the sites within it. It is intended that this would allow the development of a residential subdivision, limited to 90 dwellings by potable water capacity, but likely to accommodate approximately 65 residential dwellings based on the topography and existing surrounding house typologies.

The site has two separate frontages to Crestview Rise and one to Kotahitanga Street.

Key transportation considerations of the proposed Plan Change (PPC) are:

- Compatibility with neighbouring land uses;
- The accessibility and functionality of the PPC Site for residential purposes to various modes of transport; and
- The ability of the surrounding road network to safely and efficiently accommodate traffic generated by the development of the PPC Site.

These and other transportation issues are addressed in this ITA.

By way of summary, it is considered that the proposed Plan Change and accompanying development, as detailed in this report, will have minimal traffic effects to the function, capacity and safety of the surrounding transport network.

2 EXISTING SITE CONDITIONS

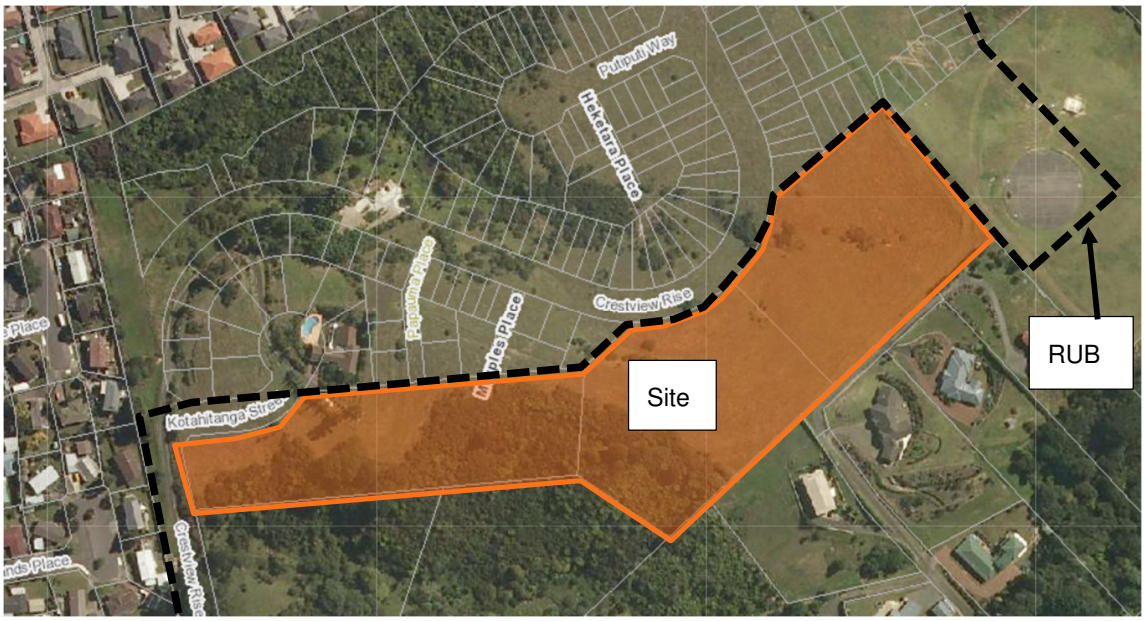
2.1 SITE LOCATION

The PPC site is located on three properties located at 28, 30 and 66 Crestview Rise, Papakura.

The PPC site is currently zoned Rural – Countryside Living Zone in the Auckland Unitary Plan Operative in Part November 2016 (Unitary Plan) and lies just outside of the Auckland Rural Urban Boundary (RUB). The neighbouring sites to the north are zoned Residential – Mixed Housing Suburban, and to the south Rural Countryside Living.

Figure 2-1 shows the location of the site in relation to the surrounding road environment and the existing RUB.

Figure 2-1: Site location



The subject site has frontage onto both Crestview Rise and Kotahitanga Street.

Crestview Rise connects to Keri Vista Rise to the north, which circles around onto Duckworth Road and back on to Settlement Road at the southern end of Crestview Rise. Kotahitanga Street is a short 80m cul-de-sac accessed via Crestview Rise.

Both Crestview Rise and Kotahitanga Street provide for a single traffic lane in each direction, with on-street parking and 1.8m pedestrian footpaths provided on both sides of the road. The carriageway on Crestview Rise is 8.0m wide and on Kotahitanga Street 6.0m.

The posted speed limit near the site is 50km/hr.

2.2 TRAFFIC VOLUMES

Traffic volumes extracted from Auckland Transport indicate that Settlement Road between Dominion Road and Fairdale Avenue carried approximately 6,600 vehicles per day (vpd) in April 2022. This also indicates a peak hour volume of 520 vph and 580 vph during the morning and afternoon peak hours respectively.

No traffic volume data is available for Crestview Rise or Kotahitanga Street. Based on the catchment, volumes here are considered to be substantially lower. To check this, a spot count was undertaken over an hour during the morning peak at the Settlement Road / Crestview Rise intersection by Commute. This showed some 91 vph travelling on this section of Settlement Road and 57 vph on Crestview Rise.

2.3 ROAD SAFETY

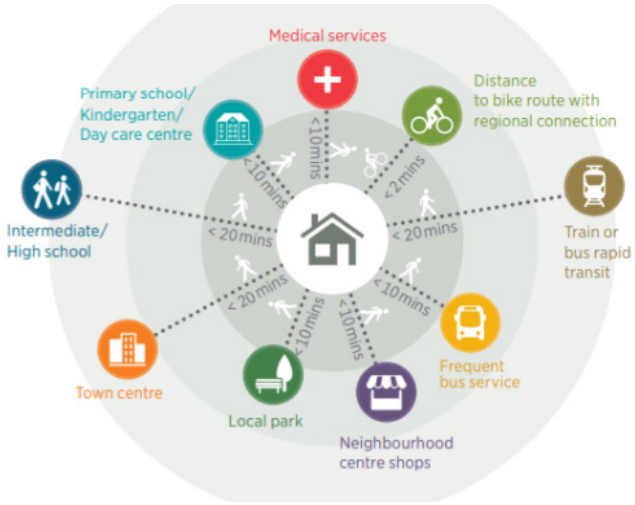
A search of the NZTA CAS database has been undertaken for all reported crashes occurring in the vicinity of the site for the five year period from 2018-2022 including all available data for 2023. The study area encompasses the length of Crestview Rise between Settlement Road and Putiputi Way, including both intersections as well as the length of Kotahitanga Street.

No crashes were identified within the study area. Therefore, from the assessment of the crash history, there is no indication of any significant safety concerns in the area which the subject site may impact.

2.4 SITE ACCESSIBILITY

The Auckland Transport TDM Urban Street and Road Design Guide provides guidance as to the likely acceptable travel times to various activities as shown in Figure 2-1 below.

Figure 2-2: Acceptable travel times

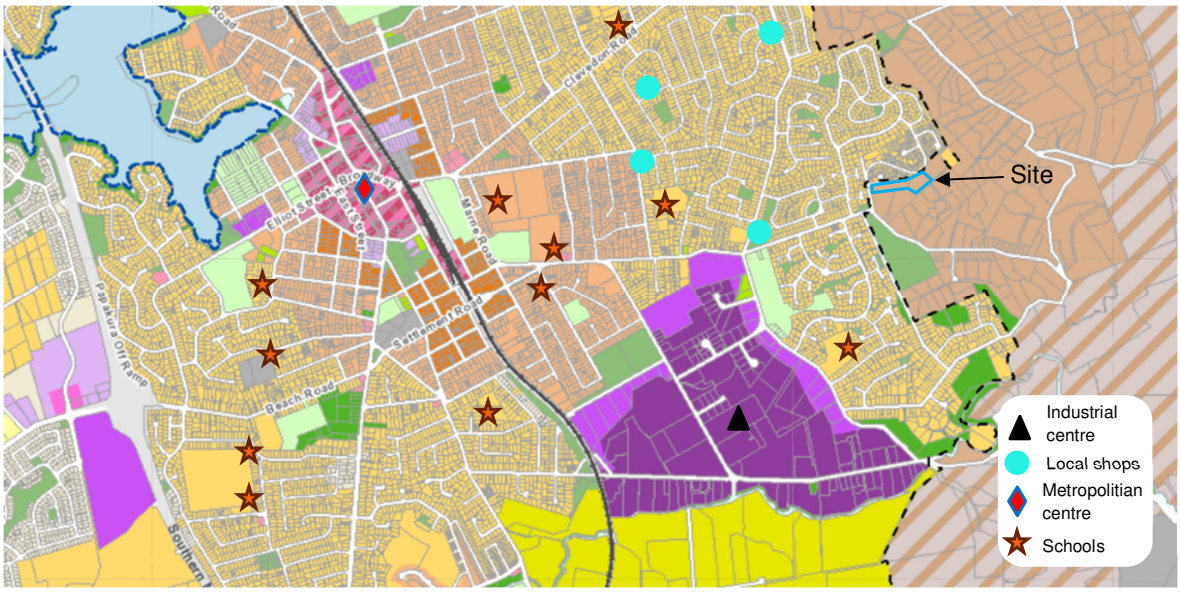


2.4.1 PRIVATE VEHICLES

The local area features many attractions for residents of the site. The site is well connected to the local shopping and employment centres, which are located 2.5-3.5km drive away (5 – 6 minutes) via Settlement Road. The metropolitan town centre constitutes a few supermarkets, retail stores and restaurants which is considered to satisfy the day to day needs of residents. Employment opportunities are available in both the nearby metropolitan centre and industrial areas. There are also a number of schools located within a 5 – 6 minute drive for children of all ages. Given the amenities in the local area, residents will likely conduct trips within Papakura for day-to-day activities.

Figure 2-2 shows the location of the site in relation to the local centres, metropolitan centre, industrial zones and local schools (including both primary and high school).

Figure 2-3: Local Attractions



2.4.2 PUBLIC TRANSPORT

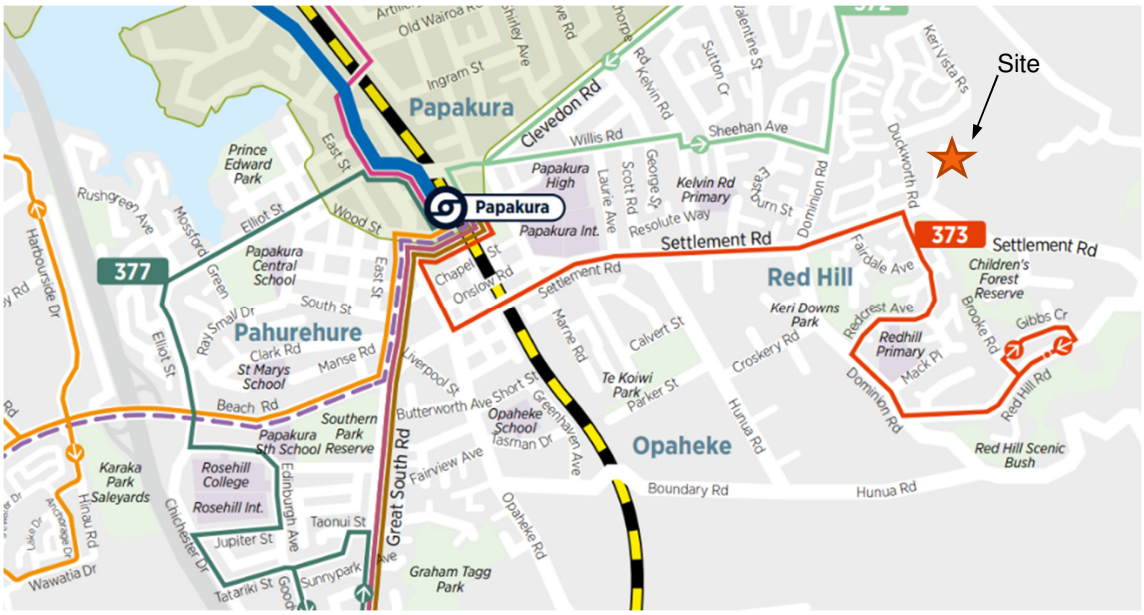
The nearest currently operational bus stops are located on Settlement Road near Oakleaf Drive. This is 450m from Kotahitanga Street (or a 6 minute walk) and 800m from the sites frontage on Crestview Rise (or a 9 minute walk).

This bus stop is served by Route 373 which is a local route connecting Red Hill with Papakura Station via Settlement Road, with services running hourly throughout the day. A number of connections to the wider network are available from Papakura Train Station (some 3km or 5 minute drive / 13 minute cycle away), including the southern line train service.

Whilst the proposed development enabled by the rezoning is serviced by a basic level of public transport, the frequency of this is low. However, it does provide access to transport hubs (such as Papakura) thus connections are available throughout the wider network.

Figure 2-3 shows the public transport provisions in the local area.

Figure 2-4: Existing public transport provisions



At the request of Auckland Transport the ability to provide a public transport route along Crestview Rise was reviewed. The PPC proposes no changes to the existing built form of Crestview Rise and thus does not preclude a future service being provided here if deemed to be warranted and appropriate by Auckland Transport.

2.4.3 CYCLING

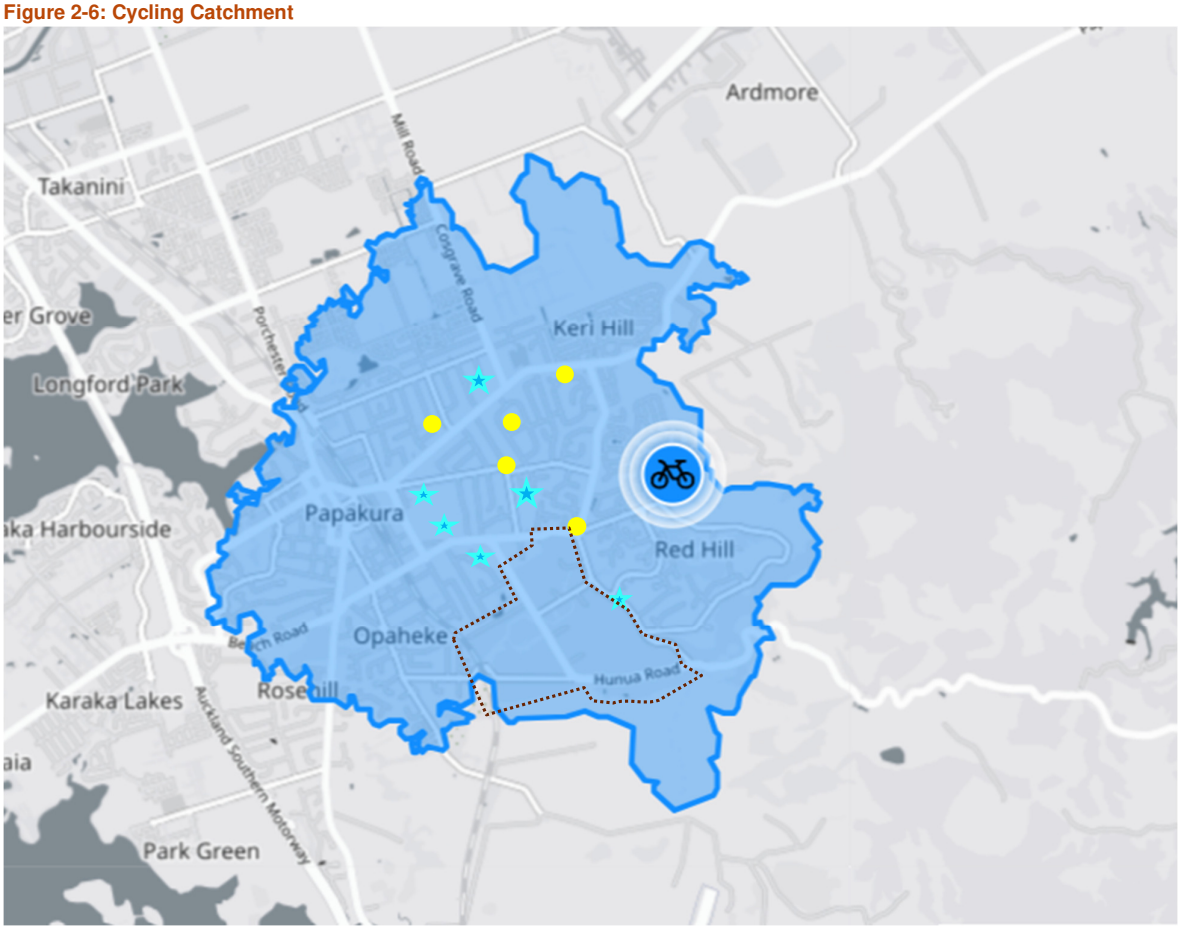
Given the site's location at the edge of the rural-urban boundary, there are no formal cycling routes available immediately adjacent to the site. Figure 2-4 below shows the location of the site on Auckland Transports Cycleway map, and proximity of the nearest cycle facilities.

Figure 2-5: Auckland Transport Cycleway map

However, the speed limit around the site is 50 km/hr and therefore on road cycling is a viable mode of transport on a number of the local roads surrounding the site.

Based on NZTA's Research Report 426, the average cycling trip length is approximately 3 kilometres. Figure 2-6 below shows an approximate cycling catchment for the site based on a 3.0km travel distance.

Figure 2-6: Cycling Catchment



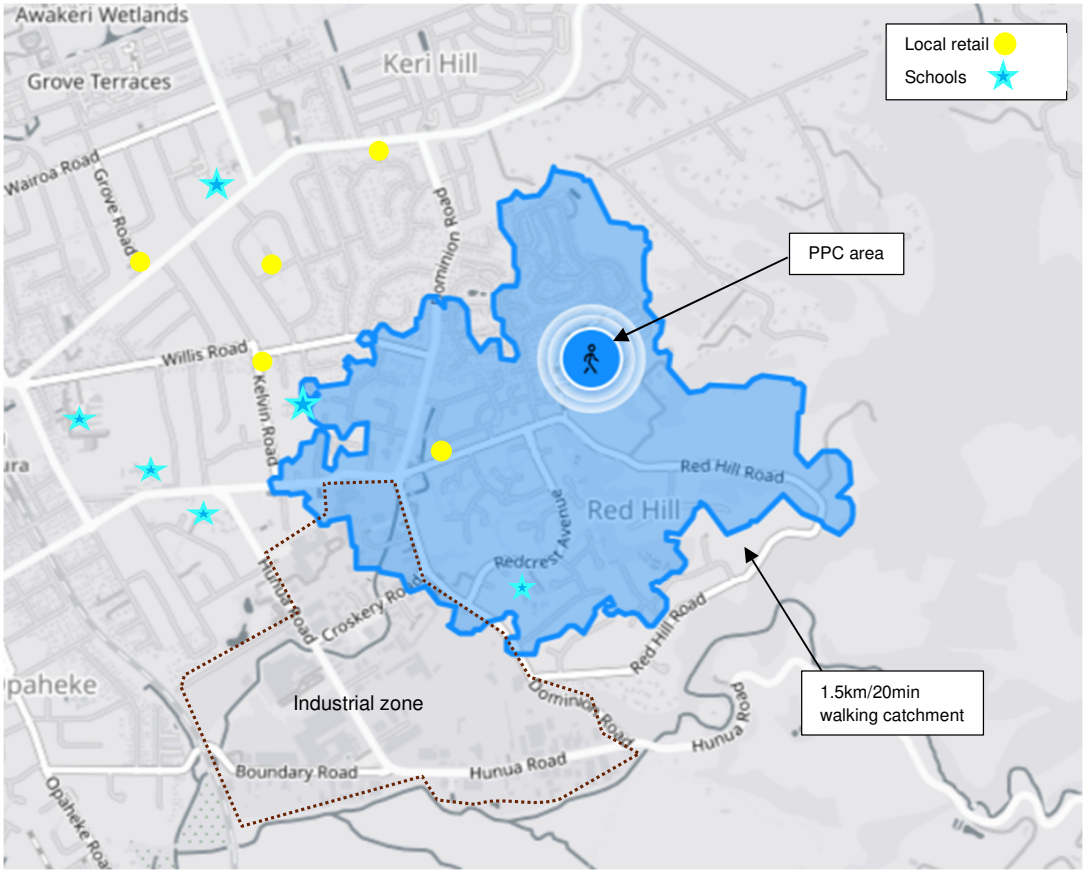
Based on this it is expected that the primary walking and cycling trips during the peak hours are anticipated to be school and commuter trips. The site is located within reasonable cycling distance of six schools, nearby industrial area, and the Papakura Train Station – from here multi modal trips are also possible.

2.4.4 WALKING

Using a practical walking distance of 1.5 kilometres and the 15th percentile walking speed of a typical fit, healthy adult of 1.2 m/s, a practical journey time is approximately 20 minutes.

Based on this the primary walking catchment area for the site is shown in Figure 2-6 below.

Figure 2-7: Walking Catchment



As shown above, two of the local schools are located within the practical walking distance, with the industrial employment area being just on the edge of the practical walking distance.

3 PLANNING POLICY

3.1 GENERAL

This section provides a review of the PPC in relation to established policy and plans. The review focuses on the transportation components of the following documents:

- Auckland Plan 2050;
- Auckland's Climate Plan and Transport Emissions Reduction Pathway;
- Auckland Regional Land Transport Plan;
- Auckland Transport Alignment Project 2021-2031;
- Auckland Regional Public Transport Plan 2018-2028;
- Unitary Plan;
- Auckland Design Manual 2014; and
- Auckland Transport Design Manual.

3.2 AUCKLAND PLAN 2050

The Auckland Plan 2050 sets the direction for how Auckland will grow and develop over the next 30 years. It responds to the key challenges Auckland faces today – high population growth, sharing prosperity among all Aucklanders, and reducing environmental damage. The key transport related outcome is detailed below:

"Aucklanders will be able to get where they want to go more easily, safely and sustainably".

The Auckland Plan 2050 details seven focus areas in order to achieve this outcome:

- Make better use of existing transport networks;
- Target new transport investment to the most significant challenges;
- Maximise the benefits from transport technology;
- Make walking, cycling and public transport preferred choices for many more Aucklanders;
- Better integrate land-use and transport;
- Move to a safe transport network, free from death and serious injury; and
- Develop a sustainable and resilient transport system.

It is considered that the development of the PPC Site aligns well with the Auckland Plan 2050, as it will provide additional housing in close proximity to the Papakura Town Centre and the rail network which will assist with making the best use of existing corridors and infrastructure.

The development of the PPC Site will also result in upgrades to existing corridors which will improve safety and provide alternative modes of travel for residents and visitors.

3.3 AUCKLAND CLIMATE PLAN

Published in December 2020, the Auckland Climate Plan outlines the City's strategic plans and goals to work towards a region that is resilient and well connected to the environment. One of the primary targets of the plan is to halve the region's emissions by 2030 and to achieve net zero emissions by 2050.

The plan highlights that transportation is the single biggest contributor to emissions in Auckland, accounting for nearly 44% of all emissions in the region. To reduce transportation related emissions, the plan outlines the following targets:

- Reduce private vehicle kilometres by 12% through avoided motorised travel such as remote working;
- Increase in public transport usage from 7.8% in 2020 to 24.5% in 2030, and 35% in 2050;
- Increase in cycling as a mode of travel from 0.9% in 2020 to 7% in 2030, and 9% in 2050;
- Increase in walking as a mode of travel from 4.1% in 2020 to 6% in 2030.

The development of the PPC Site will provide housing within walking and cycling distance of existing education, employment and retail areas in Papakura and Red Hill. Furthermore, the PPC Site has access to an existing feeder bus service. As such, the PPC is considered to be aligned with Auckland's Climate Plan as it provides resilient land use where future residents have travel choice options available.

3.4 TRANSPORT EMISSIONS REDUCTION PATHWAY

The Transport Emissions Reduction Pathway (TERP) is Auckland Council's and Auckland Transport's pathway to reducing Auckland's emissions. The document sets Auckland's target of emissions, with the goal of halving Tāmaki Makaurau's emissions by 2030 and net zero emissions by 2050.

Four broad objectives are identified in the TERP, each with a subset of objectives as summarised in

Table 3-1.

Table 3-1: TERP Objectives

Broad Objectives	Sub-objectives
Reduce reliance on cars and support people to walk, cycles and use public transport	1. Supercharge walking and cycling
	2. Massively increase public transport patronage
	3. Prioritise and resource sustainable transport
	4. Reduce travel where possible and appropriate
	5. Safe low-traffic neighbourhoods for people
	6. Build up not out
Rapidly adopt low-emissions vehicles	7. Electrify private vehicles
	8. Enable new transport devices
Begin work now to decarbonise heavy transport and freight	9. Low emissions public transport
	10. Efficient freight and services
Empower Aucklanders to make sustainable transport choices	11. Empower Aucklanders to make sustainable transport choices

Achieving these objectives will be the responsibility of central government, local government, developers, and the general public. At the plan change level, the rules set by central and local government cannot be changed, however the policies set for developers to follow can be changed.

However, some of the above objectives are difficult to influence at a developer level, and for this reason the analysis reviews infrastructure and facilities per mode of travel. The underlying direction and goals are the same, with the same modal splits that were used to generate the objectives used to identify what is proposed and can be considered to improve sustainable travel.

The following sections summarise the proposed and possible transport infrastructure within the PPC that will assist in achieving the TERP goals.

3.4.1 MODAL ASSESSMENT

A modal assessment has been undertaken by comparing the target mode splits of the TERP against the 2018 census data, to understand if the targets are currently achieved in any suburbs within Auckland. Figure 3-1 below summarises the TERP mode split targets.

Figure 3-1: TERP Mode Split Targets

	Trip share		Mode share by distance	
Mode (rounded)	**2019**	**2030**	**2019**	**2030**
Walking	11%	22%	1%	3%
Cycling	1%	8%	<1%	5%
Micromobility	<1%	9%	<1%	8%
E-motos, e-mopeds	<1%	4%	<1%	4%
Microcar	<1%	3%	<1%	4%
Train	1%	9%	1%	15%
Bus	3%	13%	3%	12%
Ferry	<1%	1%	<1%	2%
Light Vehicle	83%	32%	94%	47%

The census data is specific to journey to work information, however it is recognised that commuter trips are a good starting point for change given:

- The trips are regular and therefore habits can be formed,
- The trips are routine, with many jobs having constant start and end times, and
- The trips are typically of notable distance (compared to retail and entertainment trips where the closest attraction can be utilised).

It is also noted that the 2018 census data included slightly different mode categories to that in the TERP, including travel as a passenger and excluding micromobility, e-motos/e-mopeds, microcar. For the purpose of this assessment, passenger trips have been classified as bus trips as it is seen to be a form of shared transport.

3.4.1.1 WALKING

The suburbs that currently achieve 22% of commuter trips via walking are either located in Auckland's City Centre or on the fringe of Auckland's City Centre. It is thought that the decision-making process behind these trips is likely to be a combination of convenience, cost of parking, and access to a vehicle.

These areas are not comparable to the PPC Site, with Auckland's City Centre being the primary employment area of Auckland, and the site located a notable distance from the City Centre. Recognising that the PPC is for a predominantly residential purpose, the following infrastructure and policies are proposed / recommended to be incorporated:

- New footpaths will be provided on all public roads within the PPC Site. These will connect the PPC site internally, as well as externally to existing nearby attractions such as the local schools, employment areas and parks.

3.4.1.2 CYCLING

As per the 2018 census data, there is not one suburb in Auckland that is shown to achieve 8% of commuter trips travelling via cycling. This suggests that there is a notable barrier discouraging people from choosing this mode of travel which could be infrastructure, education, access to equipment, or other.

The suburbs with the greatest percentages of commuter cyclists were generally located next to separated cycle facilities and located in central Auckland. In particular, suburbs located along the north-western cycleway from Point Chevalier to the city were recognised.

Whilst the PPC Site is not located within Central Auckland and the extent of cycle infrastructure in the vicinity of the site is limited, to help improve cycling numbers the following infrastructure and policies are proposed/recommended to be considered:

- Consideration should be given to providing infrastructure that ensures public and private bicycle parking is accessible, sheltered from the weather, and can be secured by more than a bicycle chain lock.

3.4.1.3 MICROMOBILITY

Micromobility as a specified mode of transport is a relatively new concept, however the human-powered forms of micromobility transport have been around for a long time. It refers to small, lightweight wheeled vehicles and includes the likes of scooters and skateboards both electric and kick powered.

To encourage the option of micromobility travel within the PPC Site the following considerations are recommended:

- Stairs in public places should be avoided to improve accessibility via micromobility transport.
- It is anticipated that, through designing to current standards, the roading and infrastructure will accommodate the needs of these.

3.4.1.4 E-MOTOS / E-MOPEDS AND MICROCAR

These modes of travel are only starting to increase in popularity in New Zealand, with a very small ownership rate. It is anticipated that, through designing to current standards, the roading and infrastructure will accommodate the needs of these vehicles.

3.4.1.5 TRAIN

The target model split for train travel is 9% which is currently only achieved for commuter travel in suburbs that are located on the train line. Travel via train is likely to be most attractive during commuter periods, with the mode split likely to drop outside of these times.

The PPC Site is located approximately 3 km from the Papakura Train Station and is sufficiently close that some train trips are expected. To encourage residents of the PPC Site to consider travelling via train, the following infrastructure and policies are proposed/recommended to be considered:

- Provision of footpaths on all proposed new roads, to enable walking to existing feeder buses on Settlement Road. Connectivity to the train station is a key barrier to train travel and accessibility to a feeder bus would open up train as a travel option.
- Provision of infrastructure that ensures public and private bicycle parking is accessible, sheltered from the weather, and can be secured by more than a bicycle chain lock.

3.4.1.6 BUS

The commuter data shows that 39% of suburbs achieve the bus target currently. As mentioned above, the census data is swayed through counting passengers as a shared/bus trip, however the discrepancy is still large whether the passengers are included or excluded.

The majority of suburbs that achieve the 13% mode split target are located in Auckland City Centre, North Shore, or central Auckland suburbs. It is thought that high uptake in these suburbs is likely to represent a strong correlation between residence and employment in the City Centre or along the Northern Busway. It is also noted that there are also a large number of services connecting these suburbs, with many of these being frequent services.

To encourage residents of the PPC Site to consider travelling via bus the following infrastructure and policies are proposed/recommended to be considered:

- Provision of footpaths on all existing or proposed new roads, to enable walking to existing feeder buses on Settlement Road.

3.4.1.7 FERRY

Ferry transport is considered low priority for the proposed plan change given the area is not located near the coast. As such, no incentives are proposed to encourage this mode of travel for the PPC.

3.4.1.8 LIGHT VEHICLE

The only suburbs that currently achieve the light vehicle target (less than 32% travel via private vehicle) are in the City Centre. As per the walking mode split in this area, it is thought that the decision-making process behind these trips is likely to be a combination of convenience, cost of parking, and access to a vehicle.

There are two ways to reduce light vehicle trips, being to:

1. Incentivise non light vehicle trips by making alternate modes more attractive and accessible, and
2. Disincentivise light vehicle trips through making these trips challenging by the addition of parking restrictions.

The above sections have detailed the incentives that are recommended to be undertaken in and around the PPC Site to encourage travel via modes other than light vehicle. Some additional consideration to disincentivise light vehicle travel include:

- The restriction of parking provisions to encourage lower commuter vehicle usage. Careful consideration is required should this be pursued, to avoid illegal parking in the berms or even on the roads.
- Parking and housing could be decoupled such that those who do not need a parking space do not find themselves paying for an unused parking space. Again, this can lead to operational challenges with people parking illegally which would then require enforcement.

3.5 AUCKLAND REGIONAL LAND TRANSPORT PLAN 2024 – 2034

The Auckland Regional Land Transport Plan (RLTP) forms part of the National Land Transport Programme and represents the combined intentions of Waka Kotahi (formerly the NZ Transport Agency), Auckland Transport (AT), and KiwiRail to respond to growth and other challenges facing Auckland in the next 10 years.

The general surrounding area is currently more rural in nature, located approximately 35km south of the Auckland City Centre, and as such many of the projects identified in the RLTP are located closer to the City Centre. Notwithstanding this, the RLTP includes upgrades to rail infrastructure and identifies a future extension to Mill Road which will pass nearby to the site and eventually connect to Drury (exact designation and location yet to be determined).

The proposed development of the PPC Site is considered to be compatible with the surrounding and proposed transport environment and offers alternative travel modes to private vehicle, with the options of walking, and cycling between the site and key local attractions.

3.6 AUCKLAND TRANSPORT ALIGNMENT PROJECT 2021 – 2031

On 12 March 2021 the Minister of Transport released the Auckland Transport Alignment Project 2021-2031 (ATAP) programme which will invest approximately $31.4 billion into critical transport infrastructure and services throughout Auckland. The ATAP is focused on encouraging the shift from private cars to public transport, walking and cycling and addressing Auckland's longer-term challenges of climate change and housing development.

The development of the PPC Site will help address Auckland's housing challenges by providing additional housing supply. Furthermore, the PPC Site is located within walking distance of two schools, community parks and a number of employment opportunities. As such, the PPC allows for additional residential development within walking distance of community amenities, and therefore provides the opportunity for walking to be used as a mode of transport.

3.7 AUCKLAND REGIONAL PUBLIC TRANSPORT PLAN 2023-2031

The Auckland Regional Public Transport Plan 2023 – 2031 (RPTP) seeks to deliver an improved public transport network in Auckland by increasing public transport frequency along key transport corridors.

The vision of the RPTP is to "m*assively increase public transport use to reduce congestion, improve access for Aucklanders, support the economy and enhance the environment".* To achieve this vision, the RPTP features five goals:

1. Services providing an excellent customer experience;
2. Enhancing the environment and tackling the climate emergency;
3. Safe and accessible transport for everyone;
4. Integrating public transport into a growing Auckland;
5. Funding and delivering public transport transparently.

The development of the PPC Site will increase the number of residents that are located near the existing 373 bus route, which improves the patronage and viability of both the existing and any potential future public transport services (being the number of services and their frequencies).

3.8 AUCKLAND UNITARY PLAN

The Unitary Plan has the following objectives (updated to take account of PC79) with regard to the region's transport infrastructure under Chapter E27 (Transport):

1) Land use and all modes of transport are integrated in a manner that enables:

   a. the benefits of an integrated transport network to be realised; and
   b. the adverse effects of traffic generation on the transport network to be managed.

2) An integrated public transport network, including public transport, walking, cycling, private vehicles and freight, is provided for.
3) Parking, including accessible car parking and loading supports urban growth, and a quality compact urban form
4) Parking, including accessible car parking, loading and access is safe and efficient and, where parking is provided, it is commensurate with the character, scale and intensity and alternative transport options of the location.
5) Pedestrian safety and amenity along public footpaths is prioritised.
   a. Safe, direct, and continuous on-site access for pedestrian and other users is provided to dwellings, in residential zones
6) Road/rail crossings operate safely with neighbouring land use and development.
7) Electric Vehicle Supply Equipment is enabled to facilitate use of electric vehicles.

3.9 AUCKLAND DESIGN MANUAL

The Auckland Design Manual 2014 sits alongside the Unitary Plan and provides practical advice, best practice processes and detailed design guidance to enable informed choices, to help build houses and develop streets and neighbourhoods that not only look good but are built to last, are sustainable and give the best return on investment. Section '3. Movement networks', a subsection of the 'Subdivision and Neighbourhood Design' chapter, specifically seeks the following transport-based design outcomes:

- ***Connections and connectivity*** *- Subdivisions that provide movement choice and connectivity, while balancing costs, safety, and privacy;*
- ***Walkable neighbourhoods*** *- Prioritisation of pedestrian convenience and access to destinations in the design of subdivisions;*
- ***Legible hierarchies*** *- A clear and consistent road hierarchy to create accessible, legible and safe subdivisions and help people understand how to get to, and when they are on, main routes;*
- ***Managing speed and modes*** *- Subdivision design ensures the safety of pedestrians and cyclists by managing vehicle travel speed, and provides equally for the four major modes (walking, cycling, passenger transport, vehicles) in a way that will appeal to the users of each;*
- ***Vehicle emissions and road layout*** *- Movement networks are designed to minimise the costs and environmental impacts of unnecessary travel;*

The development of the PPC Site will follow these design guidelines, and will promote connectivity with the existing residential, employment, retail and recreational activities in the local and wider community.

3.10 AUCKLAND TRANSPORT DESIGN MANUAL

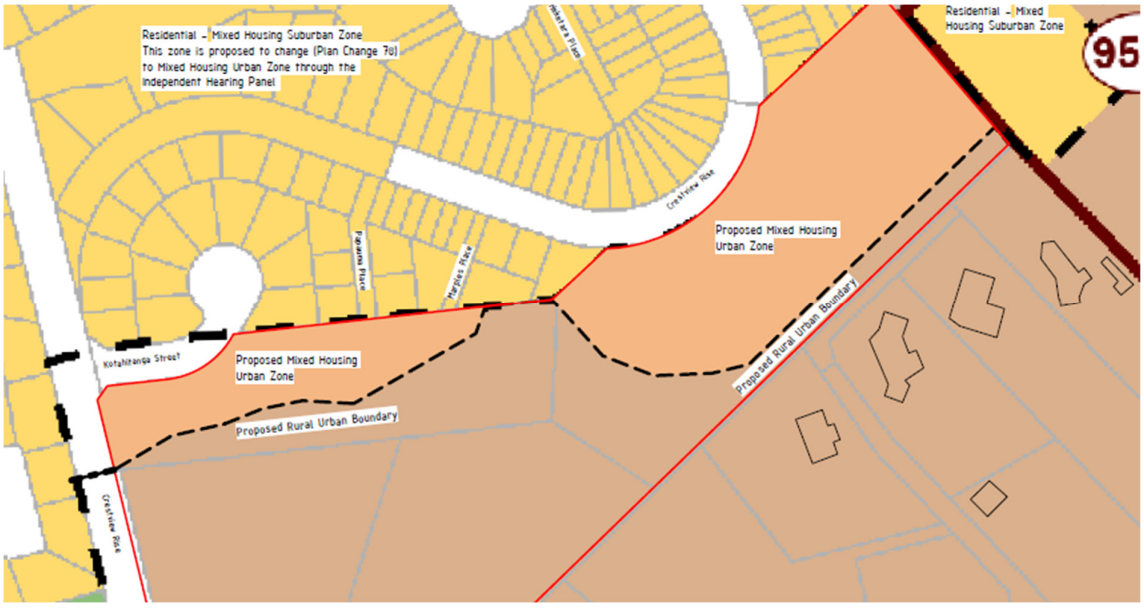
Any road improvements undertaken as part of the development of the PPC Site will follow approved standards namely the Auckland Transport Design Manual (TDM), Austroads and NZS4404. These documents supersede Auckland Transport's Code of Practice (ATCoP) and provide the current best practice design requirements for road, intersection, and access designs.

4 PROPOSED PLAN CHANGE

It is proposed to rezone the development site at 28, 30 and 66 Crestview Rise, Papakura from Rural - Countryside Living Zone to Mixed Housing Urban Zone and relocate the RUB to incorporate the sites within it. This would allow the development of a residential subdivision in general accordance with the proposed precinct provisions objectives, policies and standards and the AUP.

Figure 4-1 shows the proposed new zoning and RUB location.

Figure 4-1: Proposed new zones and RUB location



4.1 INDICATIVE DEVELOPMENT

Preliminary master planning has been undertaken to establish what level of housing the Plan Change might enable and how this could be serviced.

Based on the potable water servicing capacity of the site a maximum yield for the site would be 90 dwellings, however given the topography, location and style of surrounding households it is considered more likely the PPC site would have a yield of some 65 dwellings.

Figure 4-2 shows an indicative development layout based on a likely yield of 65 dwellings, the provision of a new 90m JOAL accessible from Kotahitanga Street and a new 210m public road accessible from Crestview Rise.

Figure 4-2: Indicative Development

5 TRIP GENERATION

5.1 TRIP RATES

The RTA Guide[1] is commonly used by traffic engineering practitioners in Australasia to assess the traffic generating potential of various land uses. In New Zealand, the RTA Guide is frequently used for assessing residential developments.

The proposed residential units were assessed and given their location are considered to exhibit the characteristics of a "*standalone residential dwelling".* The RTA predicts 0.85 trips / dwelling for peak hour trips and 9 trips / dwelling daily.

Based on an anticipated yield of 65 dwellings and a maximum yield of 90 dwellings, the trip generation for the site is anticipated to be in the range of 55-77 peak hour trips and 585-810 trips respectively daily.

5.2 MAXIMUM THEORETICAL DEVELOPMENT

Under the MDRS/RMA changes there is an expectation that urban land shall be optimally used and the new permitted baseline for development is considered to be 3 dwellings at 3 storeys per site. As a result, a number of additional maximum theoretical development scenarios have been tested for the proposed Plan Change area.

These include:

- Triple attached – up to 81 x 3 storey, 3 bedroom dwellings
- Infill / rear lots – up to 89 x 3 storey, 3 bedroom dwellings
- 2 storey triple attached - up to 70 x 2 storey, 3 bedroom dwellings

All three options fit within the maximum of 90 dwellings able to be accommodated on site. Based on the above rates this would generate some 77 peak hour trips.

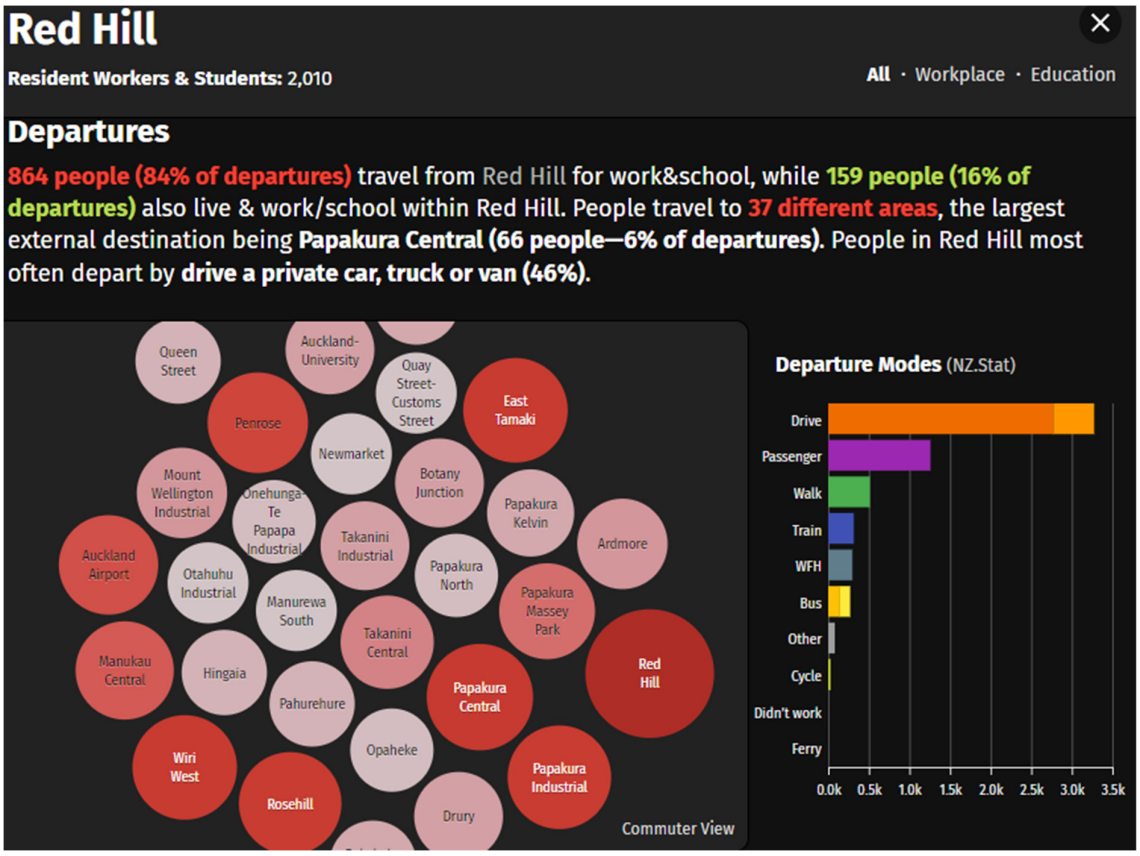
It is considered that the surrounding road network would continue to be able to accommodate this volume of traffic, with minimal additional impact on the operation of the road network when compared to the more likely lower dwelling provision of the indicative development.

5.3 ALTERNATIVE TRIP MODES

To understand how many non-vehicle trips will be generated by the site we have analysed the 2018 'commuter waka' data from Statistics NZ to understand travel to work and education patterns in the Red Hill statistical area. Some 84% of people travel from Red Hill for work and school with the remaining working or going to school in the Red Hill area. A review of the surrounding statistical areas show that this is typical in the wider area as well. Most people travel by private car (46%), however there are high levels of ride sharing with some 21% of departures being as a passenger in a car, truck, van or company bus. Some 28% of departures from the area use alternative modes such as walking (8%), trains (5%), buses (2%) or cycling (<1%). **Error! Reference source not found.** shows this data.

[1] The Roads and Traffic Authority of New South Wales – Guide to Traffic Generating Developments (RTA), Version 2.2, October 2002

Figure 5-1: Census Transport Patterns for Red Hill



It is expected that mode share for all trips generated by the PPC site will broadly reflect that currently existing in the area. Based on this some, 7% of trips generated by the PPC site are considered to occur via public transport and 8% as walking and cycling trips.

6 TRAFFIC EFFECTS

6.1 GENERAL

From the above, the PPC site is likely to increase trips in the order of 55 peak hour movements and 585 daily movements (based on the anticipated likely yield or dwelling configuration for the site).

Of these, 15 new trips are expected onto Kotahitanga Street and 40 onto Crestview Rise (based on the indicative development layout in Figure 4-2). Given the existing roading layout in the area it is considered that all trips would travel to / from the site via the Settlement Road / Crestview Rise intersection.

Rule E27.6.1 “Trip generation” of the Unitary Plan sets out trip generation limits as to when resource consent for a restricted discretionary activity is required. For residential dwellings, this limit is 100 dwellings (or generally 100 vehicle movements per hour). The PPC would allow for up to 90 residential units and 59 peak hour trips, therefore this proposal is well within this threshold.

6.2 PLAN CHANGE 79

Further to the above, Standard E27.6.1 “Trip generation” of the Unitary Plan has recently been amended as a part of PC79 and sets out trip generation limits as to when resource consent for a restricted discretionary activity is required.

For residential subdivisions capable of accommodating over 40 dwellings (TA1) and under 100 dwellings (T3A), such as that anticipated by the PPC site, a restricted discretionary activity is required under Threshold 1.

When released the PC79 decision took immediate legal effect, however it is noted that this is under appeal and is still subject to change. A Restricted Discretionary assessment as per Threshold 1 has been undertaken below.

6.2.1 RESTRICTED DISCRETIONARY ASSESSMENT

The proposed trip generation triggering the 40 dwelling threshold, has been assessed against the amended criteria outlined in E27.8.2 (3) of Plan Change 79, and is provided in **Error! Reference source not found.**.

Table 6-1: Plan Change 79 Amended Assessment Criteria E27.8.2 (3)

Assessment Criteria	Comment
(3A) any activity or subdivision which exceeds the thresholds (TA1), (T1A), (T2A) and (T3A) in Table E27.6.1.1:	
a) the effects on the function and the safe and efficient operation of the transport network as they relate to active modes (walking and cycling) and public transport infrastructure, particularly at peak times; and	The proposed precinct plan requires that the new public road provide pedestrian footpaths on both sides, providing pedestrian access through the site to the wider network. No specific cycle provisions are provided, however the local roads within the neighbouring subdivision are considered to be suitable for cyclists. The nearest bus service is currently provided on Settlement Road between Oakleaf Drive and Redcrest Avenue. The PPC will increase the number of residents living within the catchment of this route.
b) the assessment criteria at E27.8.2(3)(b) and (c) apply, but with consideration of the implementation of mitigation measures and trip characteristics focused on active modes (walking and cycling) and public transport infrastructure; and - ***E27.8.2(3)b) the implementation of mitigation measures proposed to address adverse effects which may include, but are not limited to, the following measures:*** *i.* ***such as travel planning*** *ii.* ***providing alternatives to private vehicle trips including accessibility to public transport;*** *iii.* ***staging development;*** *iv.* ***providing or contributing to improvements to the local transport network across all modes.*** ***- E27.8.2(3)c) the trip characteristics of the proposed activity on the site.***	The PPC site will incorporate footpaths and low design speeds (suitable for use by cyclists) on roads. All dwellings will also be required to provide suitable provision for bicycle parking on site. It is also anticipated that as development occurs in the area that it will become more feasible to provide additional bus services. The public bus network is operated by Auckland Transport and therefore this ultimately sits with Auckland Transport.
c) for the purpose of assessing E27.8.2(3A) a) and b) only*, the local transport network refers to the area in the immediate vicinity of the site. For the purpose of this assessment, public transport infrastructure includes infrastructure associated with public transport stops, and excludes bus lanes. Any mitigation measures must relate to the effects of the proposal on the environment, demand on public transport infrastructure and active mode journeys from the site. *** Note: this does not alter the meaning of 'local transport network' in any other context.**	

Given the volume of traffic currently catered for by Settlement Road, Crestview Rise and the surrounding area, it is considered that the increase in the traffic will have minimal impact on the operation of the surrounding road network. No traffic modelling has therefore been undertaken.

6.3 MODE SHARE AND TRIP RATES

As mentioned in Section 3.3, the Auckland Climate Plan aims to achieve the following mode split targets.

Table 6-2: Auckland Climate Plan Mode Split Targets

Mode Split	Horizon Year	
	2030	2050
Public Transport	24.5%	35%
Cycling	7%	9%
Walking	6%	6%

The public transport target is considered ambitious for a region where the PPC site is located (on the edge of urban development), particularly in the short-medium term given the transport options presently available. The provision of a bus route along Crestview Rise to cater for the wider new subdivision that has developed may assist in increasing the PT modal shift.

The walking and cycling targets are considered reasonable given where the PPC is located in relation to a number of existing education and employment opportunities.

In order to encourage walking and cycling, with the aim of reaching the mode split targets, the following is considered important for the PPC:

- Building forms and street design which encourage active mode usage; and
- Provision of high quality active mode links to the local road network and other attractions such as the local schools and employment areas.

7 ACCESS

7.1 GENERAL

For the purpose of effecting the residential zoning of the Plan Change through the proposed precinct, the Site is proposed to be developed with vehicle access via a new JOAL on Kotahitanga Street, a new public road accessed from Crestview Road and a number of new individual vehicle crossings accessing directly onto the existing street frontages of Crestview Rise and Kotahitanga Street.

The indicative location and layout of the proposed accesses can be seen in Figure 4-2 above.

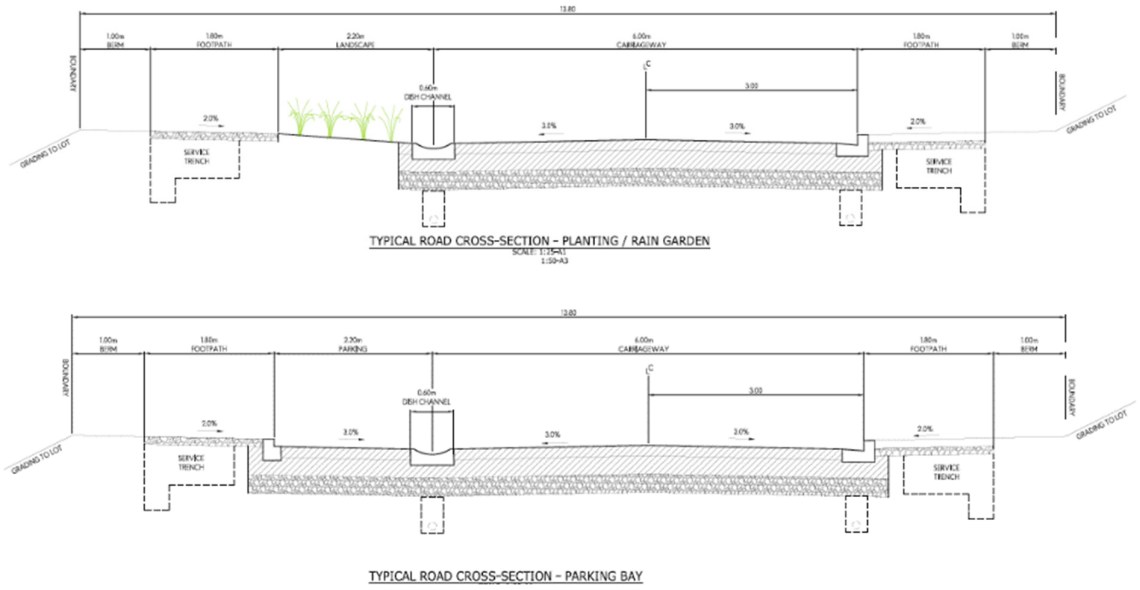
7.2 ROAD CROSS-SECTION

A new public road cross-section has been developed for inclusion within the Precinct Plan being developed for the PPC site. This can be seen in Figure 7-2 below and provides

- A 13.8m road reserve
- 6.0m carriageway
- 1.8m footpaths on both sides
- 2.2m landscaping / indented parking

- 1.0m berm either side

Figure 7-1: Proposed Road cross-sections



These dimensions meet AT TDM requirements for carriageway, footpath and indented parking bay widths for a low volume local road as is proposed. Consultation with AT on the proposed design for the proposed road form indicated an acceptance in principle as a departure from standard. The proposed precinct stipulates the acceptable minimum standards to apply for consenting purposes.

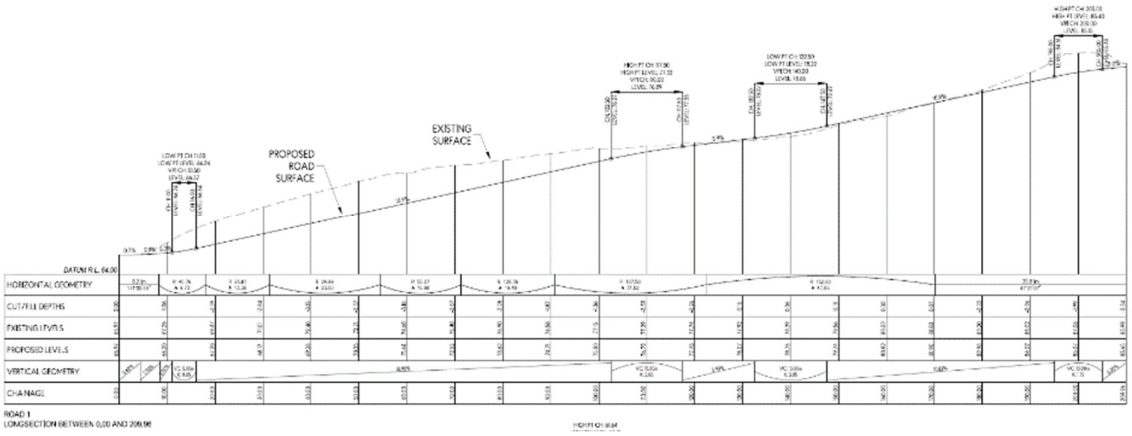
The PPC proposes an overall road reserve width that is narrower than that required under the TDM. When compared with the TDM, the reduced width is due to on-street parking being provided on one side of the carriageway only and reduced berm widths. It is understood that underground services are able to be adequately accommodated within the berm (even with a reduced berm width) thus this is considered acceptable. Provision of on-street parking on one or alternate sides of the carriageway is considered acceptable and is subject to the final anticipated lot sizes and position of vehicle crossings along either side of the road that would preclude on-street parking from being able to be provided. A number of lots on the northern side have dual frontage with the proposed new road and Crestview Rise. It is proposed that those lots with dual frontage would gain vehicle access via Crestview Rise thus enabling on street parking to be provided to a greater extent on the northern side of road 1.

7.2.1 LONG-SECTION

The proposed road is required to serve not only the residential lots enabled by the PPC but provide access to the Watercare site at the eastern end of the site. Due to the topography the maximum gradient of the site is proposed to be 1 in 9.17 (10.9%), this exceeds the desirable maximum gradient as per AT standards but is required to enable access to be established at the turning head for Watercare.

Figure 7.2 below shows the proposed long-section.

Figure 7-2: Proposed Road 1 long-section

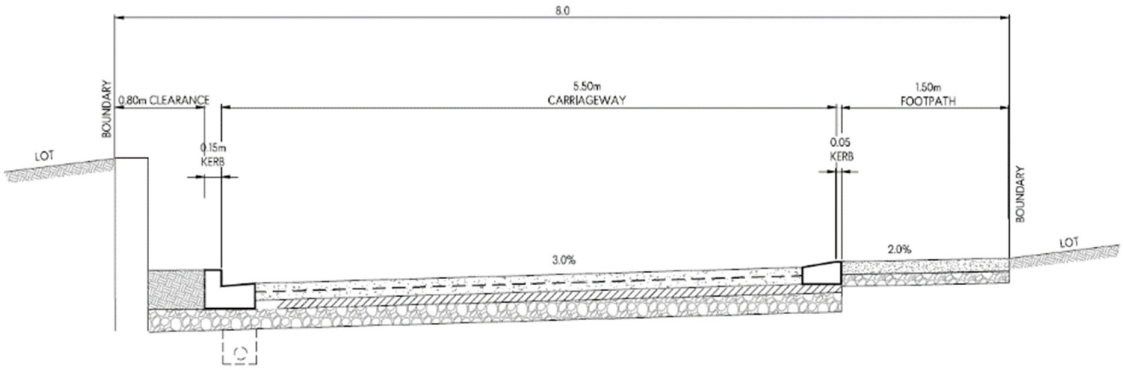


7.3 JOAL

Access to the south western portion of the PPC site would be provided by a JOAL. A JOAL cross-section has been developed for inclusion within the Precinct Plan being developed for the PPC site.

Figure 7-3 shows the proposed JOAL cross-section.

Figure 7-3: Proposed JOAL 1 cross-section



The JOAL would have an overall width of 8.0m and consist of a 5.5m carriageway supported by a 1.5m footpath, with the remaining width forming a berm clearance to the neighbouring properties to the north.

It is noted that the transition currently shown at the top of the JOAL (between the 1:5.2 section and 1:20.4 parking area) exceeds the maximum grade change at a summit to prevent vehicles bottoming out. During later design stages it is recommended that a transition is provided here or gradients amended to prevent this from occurring.

Specific design has yet to take place, however gradients are such that all individual lot parking spaces and vehicle crossings (accessed via Kotahitanga Street) are able to provide a maximum gradient of 1 in 20 as per the Unitary Plan requirements.

7.4 SIGHT DISTANCE

Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (Austroads Part 4A) provides sight distance requirements at intersections.

For a operating speed of 40 kph, and with a reaction time of 2 seconds, a safe intersection sight distance (SISD) of 73m is required and for an operating speed of 50 km/hr a safe intersection sight distance (SISD) of 97m is required.

Crestview Rise in the vicinity of the proposed intersection has an operating speed of 45 km/hr.

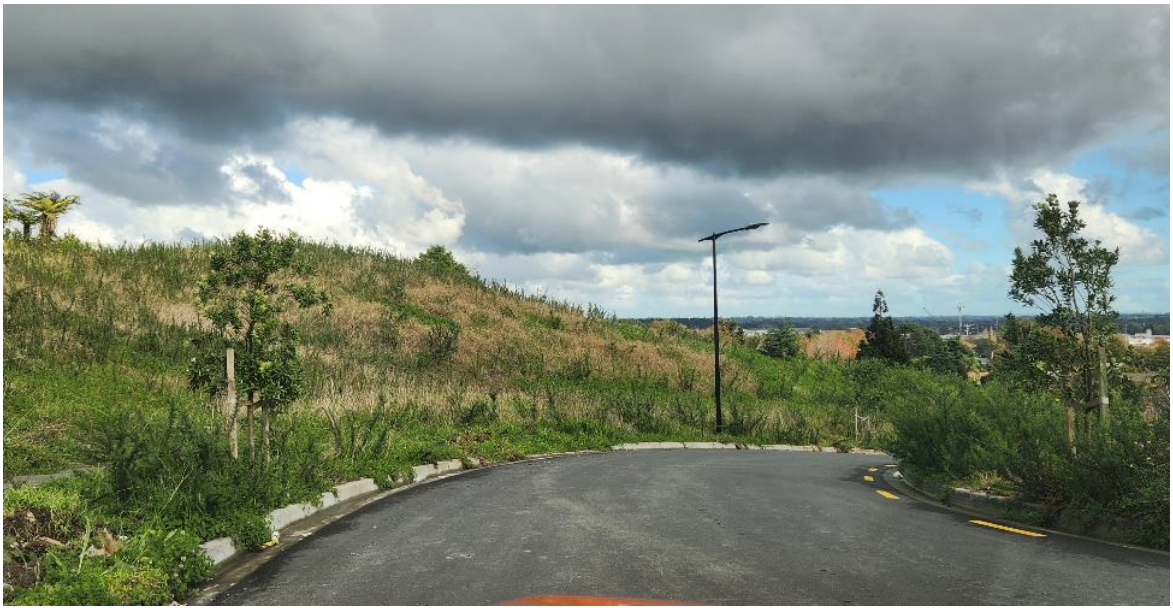
Photograph 1 and 2 show the sight distance in either direction from the proposed intersection onto Crestview Rise, this is some 105m to the north and 165m to the west, thus a compliant intersection is able to be provided.

Photographs 1 and 2: Sight distance looking west and north along Crestview Rise from the proposed intersection

The RTS-6 Guidelines for Visibility at Driveways document (RTS-6 Guide) indicates that for low and high volume driveways accessing onto a Local Road with a 50km/h operating speed, the required sight distance is 40m.

The JOAL crossing is located at the start of the cul-de-sac head Kotahitanga Street and sight distance across the cul-de-sac head is unimpeded here. It is not expected that vehicles would need to turn right out of this JOAL (as this is just the cul-de-sac head). Sight distance to the west is currently restricted by weeds in the berm (gorse) which it is anticipated will be under control by the time development takes place. From a desktop study, sight distance to the west is anticipated to be in excess of 40m. Photograph 3 below shows the current available sight distance to the west from near the proposed JOAL crossing.

Photograph 3: Looking west down Kotahitanga Street from JOAL



Overall, the sight distances are considered to comply with RTS-6.

8 PEDESTRIAN PROVISION

Separate footpaths are provided on both sides of the public road cross-section and one side of the JOAL as well as both sides of Kotahitanga Street. Footpaths are provided on both sides of Crestview Rise in the vicinity of the new intersection.

From a pedestrian perspective, the PPC site access provisions provide for a safe environment.

9 PARKING

9.1 AUCKLAND UNITARY PLAN REQUIREMENTS

The Unitary Plan outlines the relevant rules against which potential development should be assessed. Table 9-1 summarises the Unitary Plan parking requirements for the residential zones as per table E27.6.2.4 of the AUP.

Table 9-1: Auckland Unitary Plan Parking Requirements

Activity		Unitary Plan Parking Requirement
Residential – Mixed Housing Urban Zone	Dwellings - two or more bedrooms	No minimum No maximum

9.2 ON-STREET PARKING

Within the PPC site, on-street parking on the internal road network can be determined at future resource consent stages. However, it is generally considered that a minimum of 1 space per 10 dwellings is an appropriate design standard within the residential zoning areas, and the indicative civil engineering road plan and cross-section is able to accommodate this.

The specific details of on-street parking provision and individual development parking provision will be worked through in the resource consent stages.

9.3 BICYCLE PARKING

Table 9-2 outlines the Unitary Plan bicycle parking requirements for the various proposed zones within the site, based on Table E27.6.2.5 of the AUP.

Table 9-2: Unitary Plan Bicycle Parking Requirements

Activity	Short-Stay	Long-Stay
Residential Developments	1 per 20 for developments of 20 or more dwellings	1 per dwelling without a dedicated garage or basement carpark

It is anticipated that many of the dwellings will have private internal garaging and therefore there would be no need for dedicated bicycle parking facilities for these dwellings.

The total bicycle parking provisions can be determined at subsequent resource consent stages, however the PPC Site is considered to be capable of accommodating the required bicycle parking spaces.

9.4 THEORETICAL DEVELOPMENT

Whilst the Unitary Plan does not provide a minimum or maximum parking requirement it is noted that parking is often desirable for residential dwellings from a practical and sales perspective, particularly given the location of the proposed development in relation to education, retail and employment opportunities.

Indicative layouts for the theoretical development scenarios show that each dwelling accessed from either the new public road or an existing road would be able to be provided with its own on site car parking space.

However, it is noted that due to the topography of the land surrounding the JOAL, parking is proposed to be within in a communal parking area, within which there is insufficient space to provide further car parks to accommodate the additional dwellings in the maximum theoretical development scenarios. Whilst this is not strictly a Unitary Plan non-compliance it may have a minor impact on the surrounding network in relation to greater demand for on-street parking (on Crestview Rise) and on the feasibility of the sites in relation to sales.

10 SERVICING / LOADING

Individual loading and servicing requirements will be determined at the resource consent stage for the development.

The internal public road network will be designed to accommodate a 10.3 m rear steering waste truck as required in Auckland Transport's Transport Design Manual. The PPC Site access intersection with Crestview Rise should feature compound kerbs to enable trucks to enter and exit the development without obstructing opposing light vehicles. Within the PPC Site, it is expected that trucks will be able to circulate within the development for the purposes of servicing, deliveries, relocation services, waste collection and vehicle access provision to the Watercare site.

For the JOAL, there is insufficient space to place bins on the street frontage so waste will be required to be communally stored and privately collected from the western end of the JOAL by an up to 8m rubbish truck.

Overall, the proposed servicing arrangement is considered acceptable from a transport perspective.

11 PLAN CHANGE 79

The decision version of PC 79 was released in August 2024. This has been reviewed in relation to the PPC site.

PC79 requires additional effects assessment when compared to the previous Standards for residential subdivisions between 40 and 100 dwellings (or with the potential for). These have been reviewed and addressed in Section 6.1 above. The remainder of amendments to the Unitary Plan are relevant at Resource Consent stage and will be addressed then rather than at PPC.

12 CONSTRUCTION TRAFFIC

The PPC Site is currently unoccupied for the most part. To facilitate construction, access to accommodate truck movements to and from the development will be via Crestview Rise and Kotahitanga Street.

As is typical with a development of this scale, it is recommended that as part of any resource consent, a Construction Traffic Management Plan (CTMP) should be required as a condition. It is considered that this Construction Traffic Management Plan should include:

- Construction dates and hours of operation including any specific non-working hours for traffic congestion/noise etc, aligned with normally accepted construction hours in the Auckland Region;
- Truck route diagrams between the site and external road network;
- Temporary traffic management signage/details for both pedestrians and vehicles, to manage the interaction of these road users with heavy construction traffic; and
- Details of site access/egress over the entire construction period and any limitations on truck movements. All egress points should be positioned to achieve appropriate sight distances.
- Application for Traffic Management Plan approval and Corridor Access Request to Auckland Transport

Based on previous experience, the implementation of an appropriate CTMP will ensure that construction activities of this scale can be managed to ensure any generated traffic effects are appropriately mitigated.

13 CONCLUSION

From a review of the proposal to rezone the sites at 28, 30 and 66 Crestview Rise, Papakura from Rural - Countryside Living Zone to Mixed Housing Urban Zone and relocate the RUB to incorporate future sites within it enabling the development of a residential subdivision, the following can be concluded:

- The PPC Site, with the mitigation / improvement measures identified, has accessibility to the various transport modes (primarily walking, and private vehicle, with cycling an option on the road network).
- The effects of the proposed increase in vehicles due to the development of the PPC Site on the transport network are expected to be minimal.
- Acceptable vehicle and pedestrian access and sufficient parking can be provided within the PPC Site; and
- The proposed development of the PPC Site is consistent with, and encourages, key regional and district transport policies.

The traffic effects associated with the development of the PPC Site, are overall considered acceptable.