Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

WCC Transitional Cycleways Parking Management Plan

Ngaio

20 January 2023

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Version	Date	Description	Author	Approver
1	29/07/2022	Draft for client review	J Morse	A Head
2	17/10/2022	Draft issue for traffic resolution	J Morse	A Head
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1. Introduction

The purpose of this report is to assess and analyse the parking demand and behaviour in Ngaio as part of the Ngaio Transitional Cycleway Project.

The Transitional Cycleways Programme, led by Wellington City Council (WCC) and alongside Lets Get Wellington Moving (LGWM), will take a new approach to community engagement and installation to help increase the pace of change. By using lower-cost materials that can be adjusted once they are in place, the city can install an interim bike network and gain feedback in real time. This will also inform future permanent changes while gaining benefits earlier.

For the project this route has been split into five distinct sections: Kaiwharawhara Road (Ngaio Gorge Road to Hutt Road), Cameron St (Kaiwharawhara Road to the Bridle Track), Ngaio Gorge Road (Perth Street to Kaiwharawhara Road), Kenya Street (Crofton Road to Ngaio Gorge Road) and Crofton Road (Ottawa Road to Kenya Street). These sections are shown in Figure 1. Parking demand on the adjacent streets to the transitional cycleway corridor are also considered in this report. For each section, the report examines current parking demand and drivers of parking demand on the street.

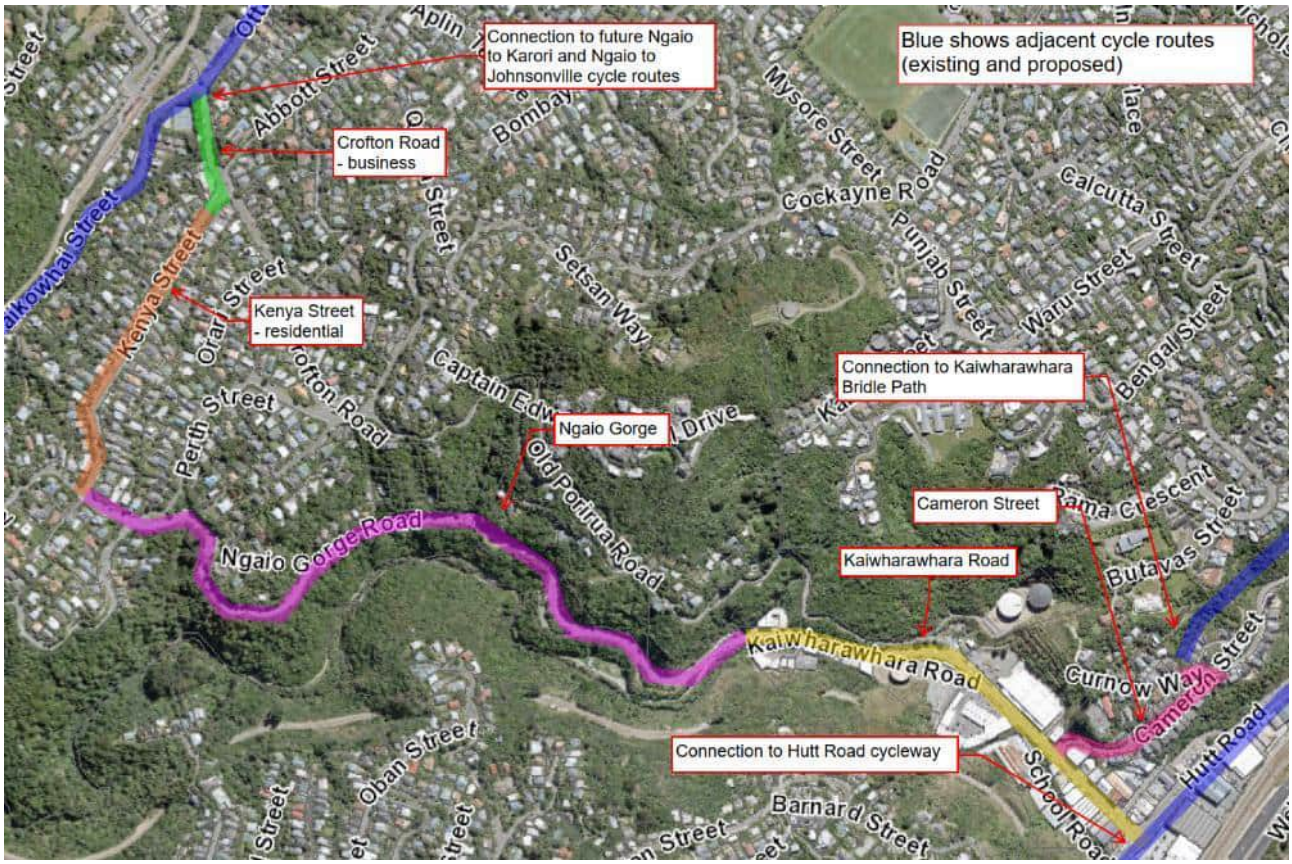


Figure 1 Extent of transitional cycleway and sections

For this report the parking inventory quoted is the number of parking spaces available, typically, on-street. Where spaces are unmarked, this is determined based on the kerb length, and assuming one space for every 6m (rounded down).

1.1. Wellington Parking Policy 2020

Wellington City Council adopted an updated Parking Policy in August 2020. The parking policy sets the objectives and principles for the management of Council-controlled on-street and off-street parking, and how parking supports achieving the vision for Wellington.

The Council's vision for Wellington is built around people and communities. The future city will be a place where people and goods can easily move to and through the city, based on a transport system that can accommodate moving more people using fewer vehicles. The city has also set a goal to be a zero-carbon capital by 2050 and transport will play a key role in achieving this goal.

The policy acknowledges that Wellington needs a more efficient transport system that makes better use of limited road space. This means moving more people using fewer vehicles; using public transport more; more people walking and on bikes, and fewer people driving and parking in busy areas. Achieving this will mean removing some on-street parking spaces on key transport routes, reallocating on-street road space to support active and public transport, and re-prioritising the remaining on-street space.

The policy establishes a parking space hierarchy for different parts of the city to ensure that limited parking supply is prioritised appropriately. The parking space hierarchy describes which types of parking have the highest and lowest priorities in different areas. It also sets out the priority level for each type of parking space, rather than the number of spaces. The hierarchy for outer residential areas applies to the Ngaio Transitional Cycleway project and is shown in Table 1.

Table 1 Parking space hierarchy for Outer Residential Areas

Priority	Outer Residential Areas
Highest priority	Safe and efficient movement of people and goods
High priority	Bus stops Urban design features Residents
Medium priority	Car share Mobility Electric-vehicle charging Coach and bus (Short Stay)
Low priority	Short-stay parks (car & motorcycle) Loading zones
Lower priority	Bicycle/micromobility Small passenger service vehicle (SPSV)/taxi stands Commuter (car & motorcycle) Coach and bus (long stay)
Lowest priority	Long stay parking of private non-motorised vehicles

This report considers the impact of the proposed cycleway upgrades on the number of car parks available and the ability of users to access local destinations using these car parks, both before and after mitigation.

A six-point scale is used to assess the level of impact, as outlined in Table 2. This table is used to assess the ability of displaced users to find a similar parking space within a certain walking timeframe. This scale of impact considers the occupancy of the alternative parking spaces.

Table 2 Level of impact scales for parking removal

Level of Impact	Definition
Very High	Removal of parking spaces has a very high impact on the ability of users to find a parking space in the vicinity of their destination. Alternative parking spaces of the same type are not available within walking distance.
High	Removal of parking spaces has a high impact on the ability of users to find a parking space in the vicinity of their destination. Alternative parking spaces of the same type are available within a 10-minute walking distance.
Moderate	Removal of parking spaces has a moderate impact on the ability of users to find a parking space in the vicinity of their destination. Alternative parking spaces of the same type are available within a 5-minute walking distance.
Low	Removal of parking spaces has a low impact on the ability of users to find a parking space in the vicinity of their destination. Alternative parking spaces of the same type are available within a 3-minute walking distance.
Very low	Removal of parking spaces has a very low impact on the ability of users to find a parking space in the vicinity of their destination. Alternative parking spaces of the same type are available within a 1-minute walking distance.
None or N/A	No impact on the ability of users to park and access local destinations or not applicable because this type of parking is not present.

1.2. Occupancy Threshold

The figure of 85% represents a parking occupancy above which traffic circulation will be high as motorists search for an available car park and may not be able to find an available car park space. Non-compliant parking may also be widespread and illegal parking can be common in situations where high occupancy is occurring. The occupancy of 85% is discussed in “Parking Pricing Implementation Guidelines” (T. Litman, Victoria Transport Policy Institute, 2010). The occupancy of 85% is considered to be a threshold value in the Wellington City Council Parking Policy (2020). It is further noted that if peak parking occupancies are well below this threshold there is inefficient use of the road space allocated exclusively for parking.

1.3. Parking survey methodology

Parking surveys were undertaken from 9am to 5pm on Thursday 12th May and Saturday 14th May 2022. A survey was undertaken on two days to understand parking behaviour during both a weekday (predominantly to understand commuter parking behaviour) and a weekend (where resident, shopping and recreational parking behaviour is more prevalent). The weather on the Thursday survey was fine, however, there were showers during the Saturday survey. This weather is not expected to have significant implications on the results. This survey does not measure any differences in behaviour during different seasons, however, it is considered to provide an accurate picture of typical parking demand and characteristics in Ngaio. In addition, a weekday and weekend overnight snapshot survey was undertaken to assess the level of occupancy in the area after working hours.

This survey involved assessing both the occupancy and duration of stay of all vehicles parked within the study area (See Figure 2). The duration of stay and occupancy was recorded by recording the first four characters of the license plates of vehicles parked on-street or within

Council controlled parking areas each hour during the survey. This involved recording vehicles on both the roads where the cycleway is proposed, and the surrounding streets to attain an overall picture of parking behaviour. Duration of stay has been assessed on all streets in the study area. This allows for any changes to on-street parking availability as a result of the transitional cycleway to be managed effectively.

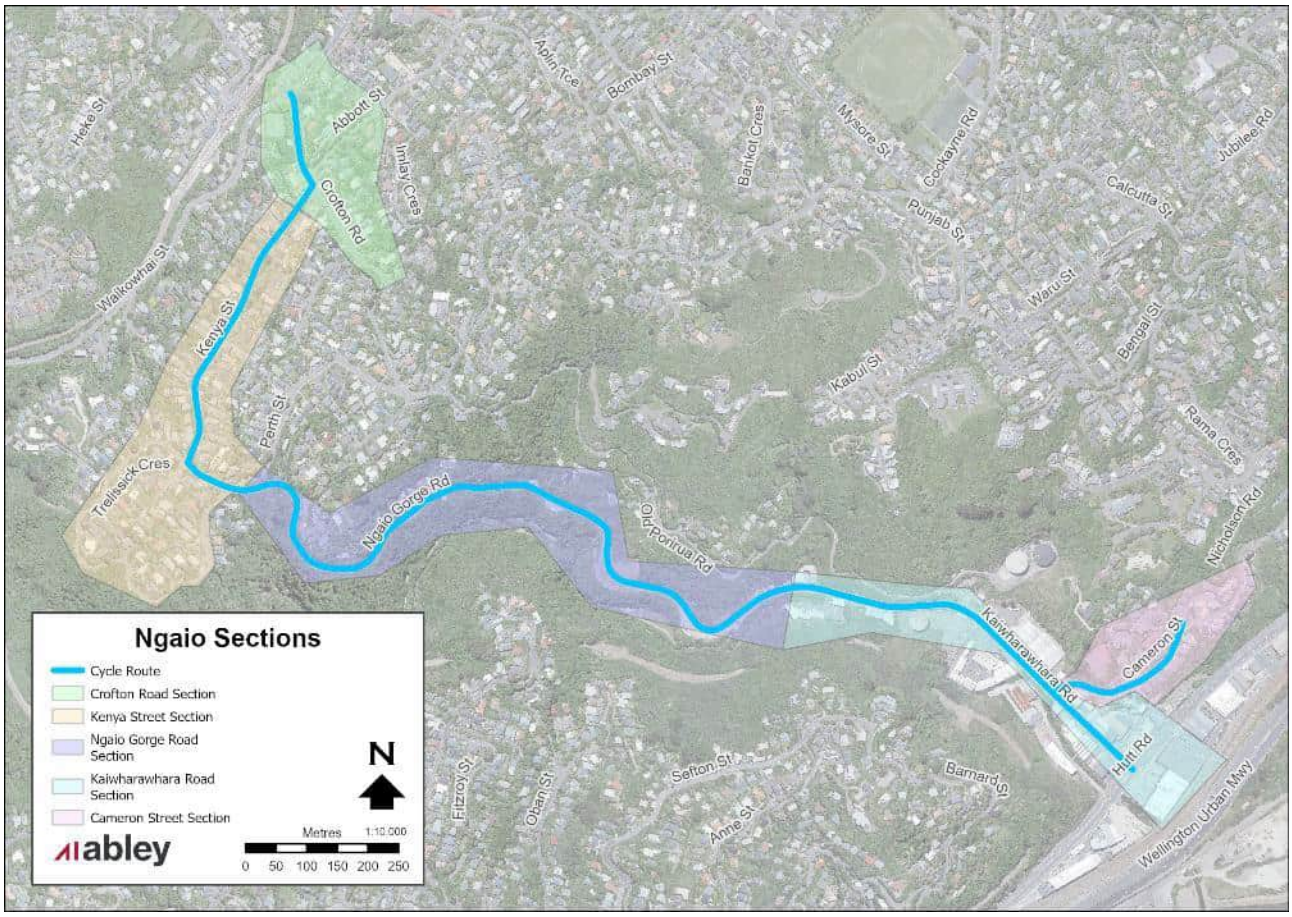


Figure 2 Ngaio study area

1.4. Impacts of Covid-19

During the time of the survey occurring, New Zealand was in the orange traffic light setting of the COVID-19 protection framework. The largest impact this setting has on the survey results is that people are encouraged to work from home where possible. Therefore, it is expected that there is less commuter demand into the city, and the demand for parking by residents may be higher than anticipated as there is more working from home. This effect is difficult to quantify, so the data obtained has not been modified to account for this.

2. Kaiwharawhara Road

2.1. About the area

The Kaiwharawhara Road section is a primarily commercial section at the southern end of the proposed cycleway corridor. This section connects the bottom of the Ngaio Gorge to Hutt Road. This area has multiple cafes, retail businesses, commercial/industrial businesses, a courier post depot, and other various commercial activities. At the northern end of this section, roadworks were occurring on the Ngaio Gorge during the parking surveys (major works relating to the large slip at the lower end of the gorge). These roadworks did not affect the parking supply in this area. This section is shown as Figure 3.

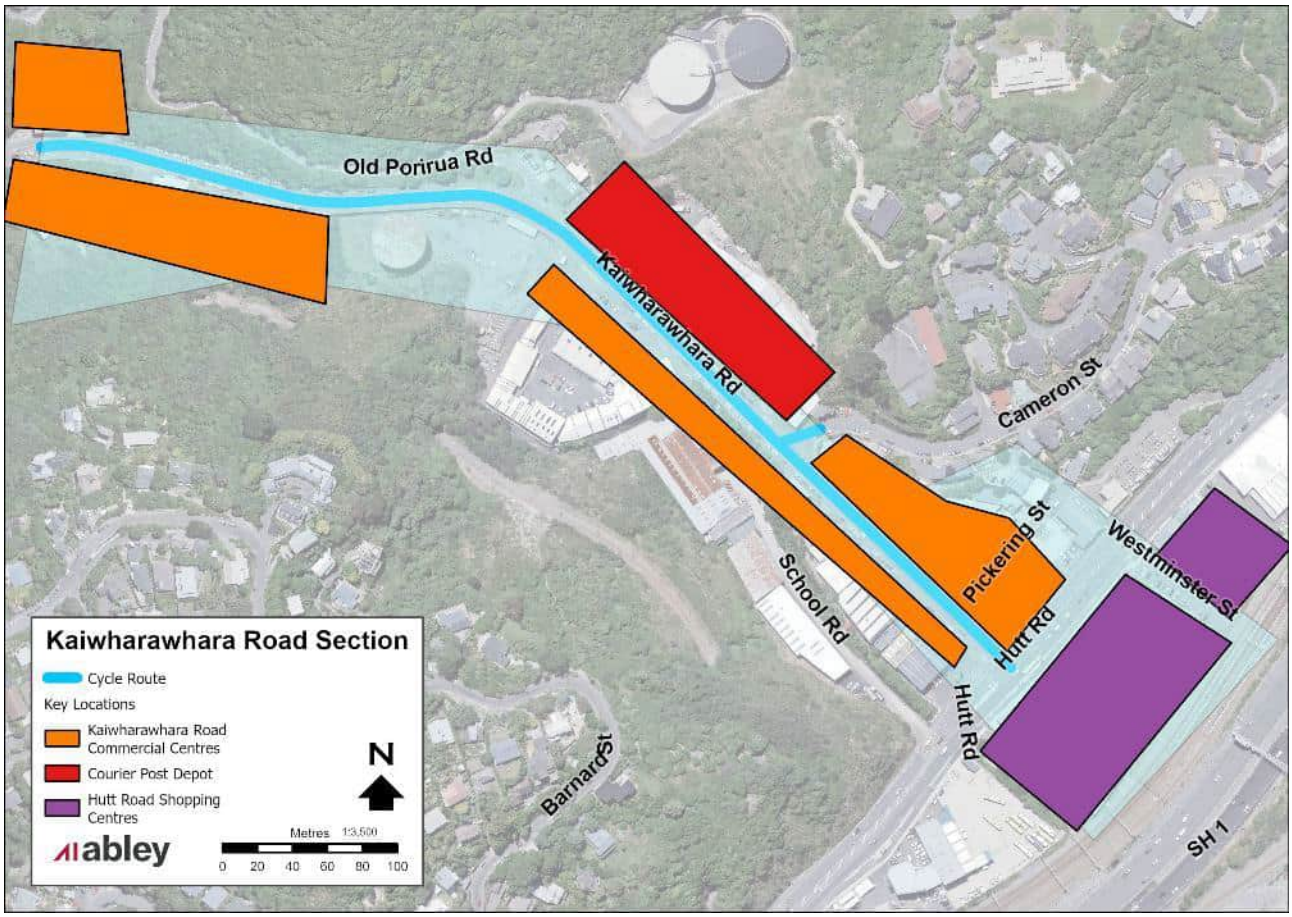


Figure 3 Kaiwharawhara Road parking study area

2.2. Current parking and usage

The parking in this section is a mixture of both unrestricted and time restricted parking (See Appendix A). The inventory and type of parking in this section is shown in Table 3. The parking in this section is all on-street, however, given the low volumes and no exit nature of Westminster Street, it functions as a pseudo off-street parking facility. There is one mobility park and one loading zone on Westminster Street. The seven (7) P60 parking spaces on Cameron Street are considered to be part of this section for the analysis. This is because it is expected that most people who use these parks are accessing the businesses on Kaiwharawhara Road. The parking spaces on the north-eastern side of Kaiwharawhara Road are not available when the bus lane is operating between 7-9am on weekdays. The parking spaces on School Road were not surveyed.

Table 3 Parking inventory in the Kaiwharawhara section (including number of spaces on Kaiwharawhara Road)

Restriction	Overall section inventory	Kaiwharawhara Road inventory (towards Ngaio)	Kaiwharawhara Road inventory (towards City)*
Unrestricted	125	43	74
P60	31	0	0
P30	19	3	16
Mobility	1	0	0
Loading	1	0	0
Total	177	46	90

*Note this inventory is the parking spaces available when the bus lane is not operating

The parking occupancy on both days of this survey is shown as Figure 4. The occupancy of the overall area and the parking just on Kaiwharawhara road is shown. This occupancy has been compared to the occupancy threshold of 85%. The parking occupancy in this section varies significantly between the two survey days. The parking occupancy on the Thursday peaks at 85% on Kaiwharawhara Road. On the Saturday the peak on Kaiwharawhara Road is 45%. This is expected given the high level of business activity that occurs along Kaiwharawhara Road. During the Thursday survey, the occupancy of this section overall was above 70% for most of the day (10am-2pm). This is a high occupancy and is driven by visitors/staff of the businesses in this area.

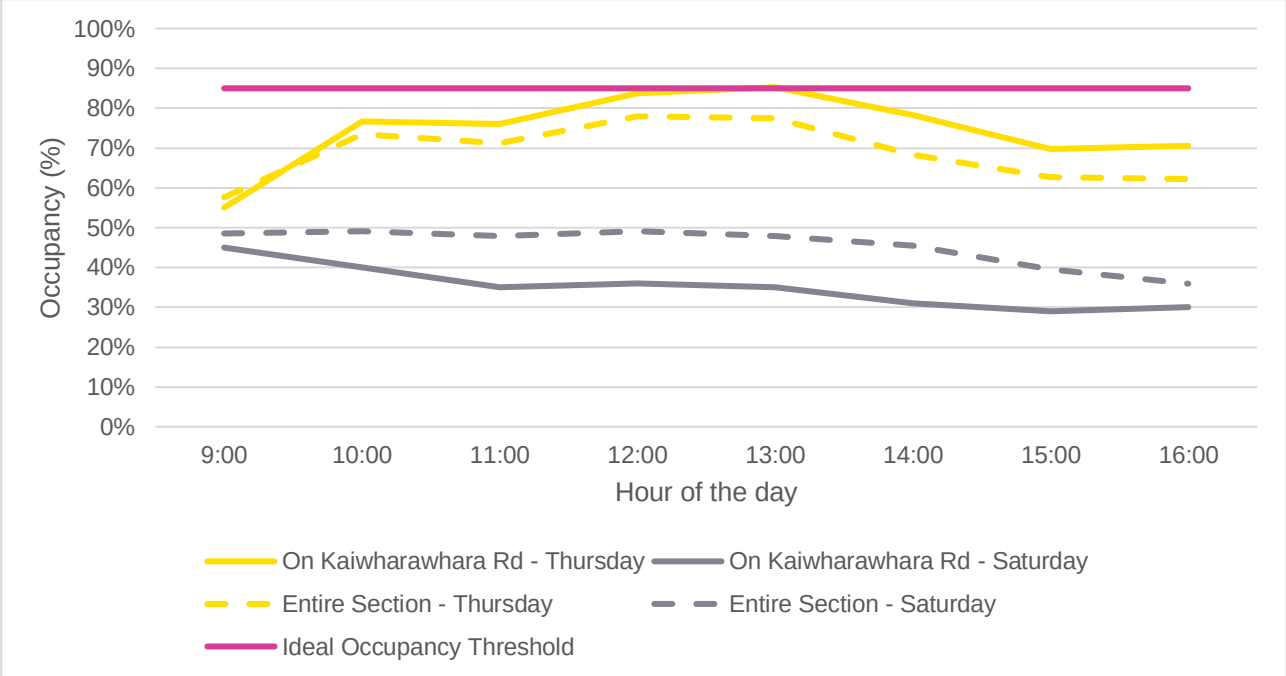


Figure 4 Kaiwharawhara Road parking occupancy on both survey days compared to the occupancy threshold of 85%.

Figure 5 shows the parking occupancy for the different restriction types in this section. The time restricted parking is typically less occupied than the unrestricted parking on the Thursday, however, on the Saturday, the time restricted parking is significantly more occupied.

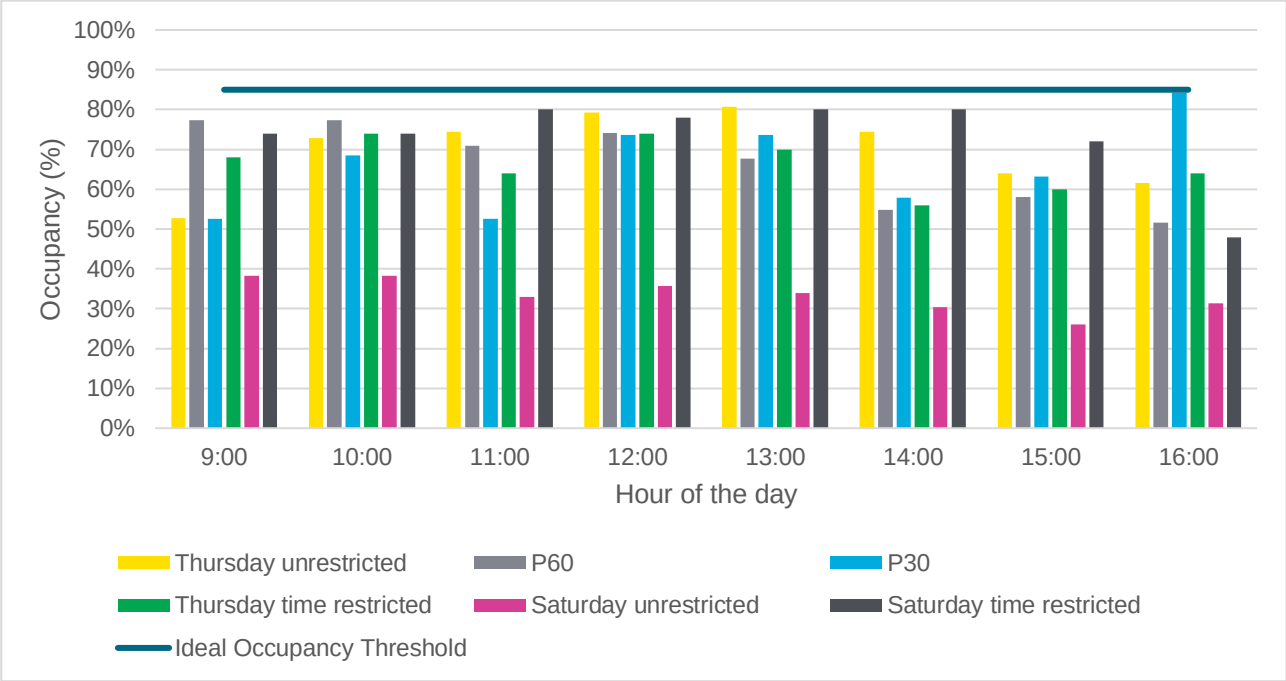


Figure 5 Comparison of parking occupancy between unrestricted and time restricted parking spaces

Figure 6 and Figure 7 show the parking occupancy per street in this section. This data shows that there is uniform parking demand on the Thursday, as nearly all the section is over 80%. This is not the case on Saturday, as there are concentrated areas of high parking demand on Pickering Street and Westminster Street, however, the rest of the section is relatively unoccupied. This demand is expected on Westminster Street given the proximity of the local businesses (Animates, cafes, etc.).

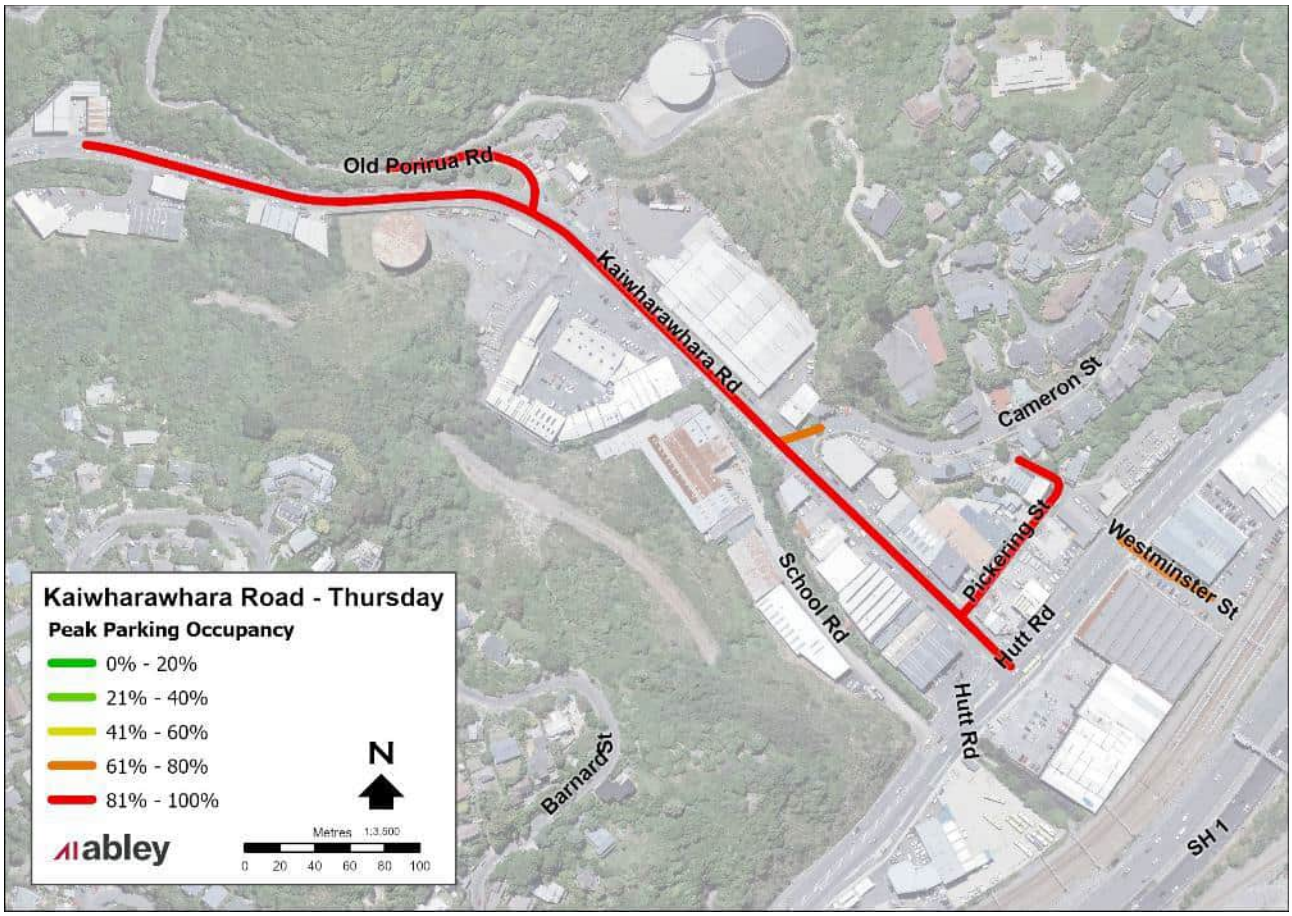


Figure 6 Kaiwharawhara Road section Thursday peak parking occupancy per street

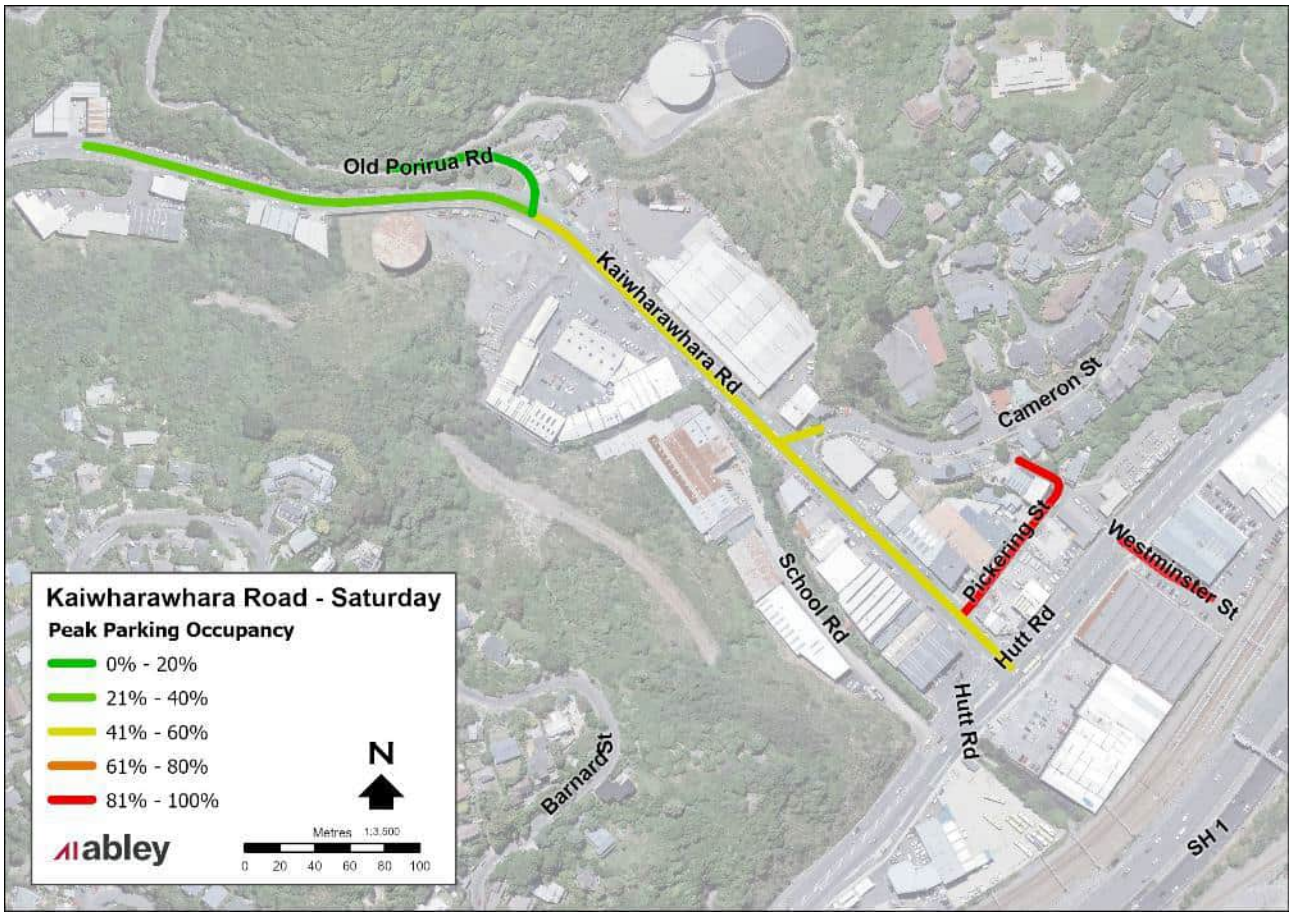


Figure 7 Kaiwharawhara Road section Saturday peak parking occupancy per street

2.2.1. Duration of stay

The duration of stay data can be assessed in this section to get a picture of the different user types of the parking. Figure 8 shows the duration of stay data on both the Thursday and the Saturday. The parking behaviour changes significantly on the two days. On the Saturday survey, the majority of users of the unrestricted parking were short stay users (45% <1 hour compared to 11% 4+hour). On the Thursday, 18% of users were short stay compared to 27% long stay. This shows there is a significant portion of users parking in this area for the entire day as part of their commute. It is not clear whether these users are working in the Kaiwharawhara businesses or commuting further into Wellington CBD (this parking is free compared to parking on Hutt Road which is paid).

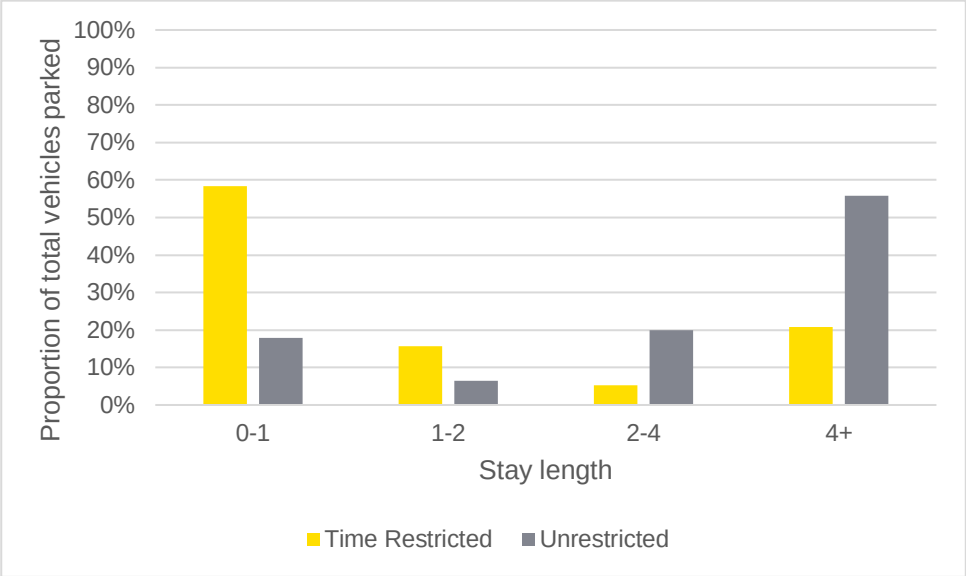


Figure 8 Duration of stay comparison for time restricted and unrestricted parking spaces

This data can be used to assess the extent to which drivers are non-compliant with parking restrictions in this area. Given the duration of stay data is taken every hour, the exact extent of the restriction compliance cannot be assessed (as the restrictions in this section are P10 and P30). It has been assumed that everyone who stays for longer than one hour is non-compliant.

Table 4 shows the level of non-compliance for the different parking restrictions. This data shows a relatively high amount of non-compliance with the parking restrictions.

Table 4 Non-compliance rates for the time-restricted parks on both survey days

Restriction	Thursday	Saturday
P60	41%	20%
P30	42%	32%

2.2.2. Overnight parking

The overnight parking shows a similar behaviour to the weekend occupancy (see Figure 9). There is relatively low occupancy throughout the area, which is driven by the high proportion of commercial land use in this area, rather than residential. One thing which was noticed was there was a significant number of courier post vehicles parked on the south side of Kaiwharawhara Road (opposite courier post). These vehicles were not observed during the 9am survey, which implies they are purely overnight parkers, resulting from staff. There is a bus lane which operates from 7am-9am during the weekdays. During the overnight weekday survey, there were no vehicles present in this bus lane. However, by the 10am survey period, the lane was significantly filled. This implies that people are parking in this section to commute, either to Kaiwharawhara Road or Wellington CBD. This is evidenced by most parkers in this section being long-stay users (46% stay for 4+ hours).

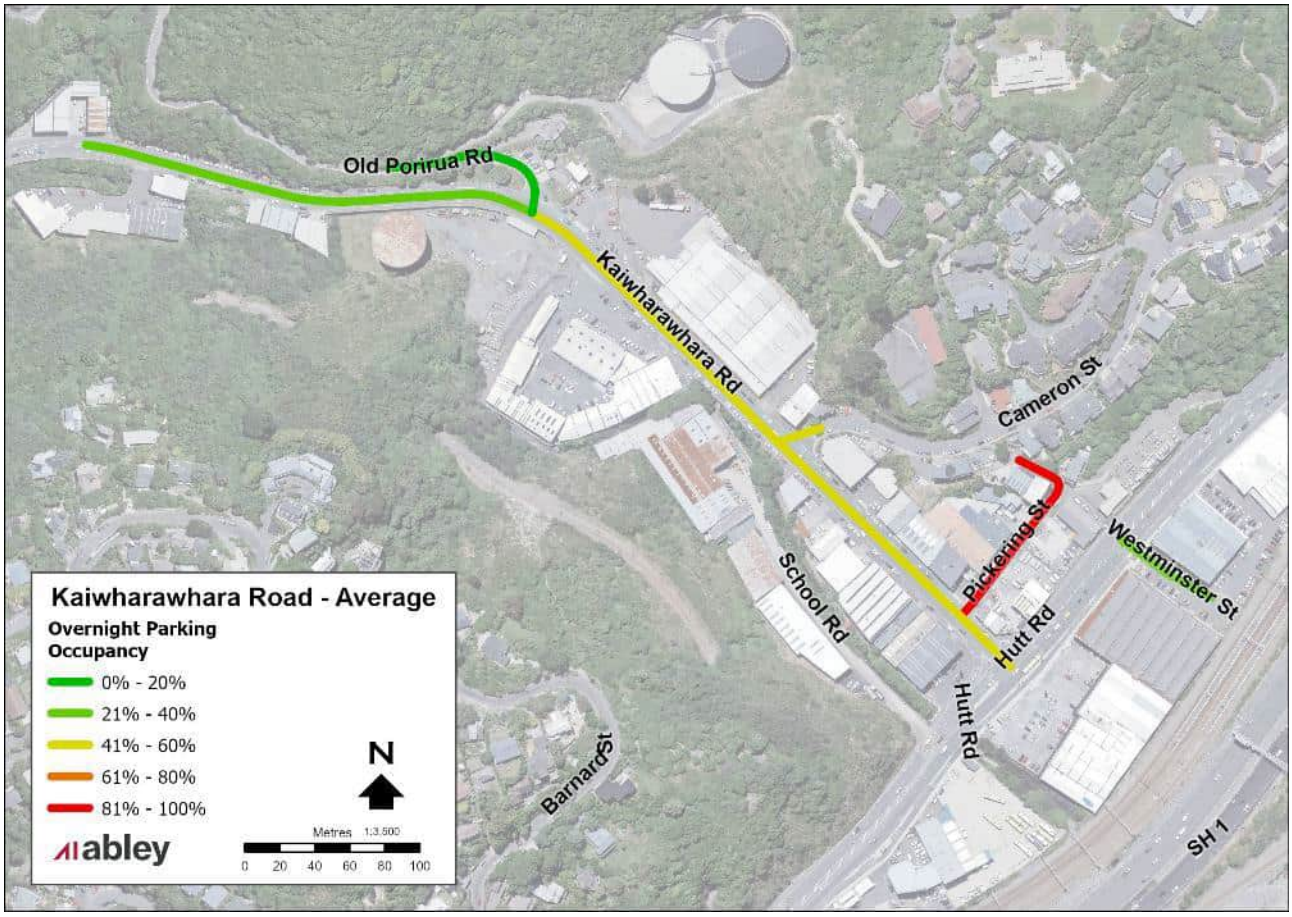


Figure 9 Kaiwharawhara Road overnight average occupancy from the two survey days

2.3. Impacts of Ngaio Transitional Cycleway on parking

The proposed cycle facility in this section is to be implemented in phases. The impacts on parking are outlined below.

Stage 1 – completion in 2024

The transitional cycleway project will maintain the existing peak hour bus lane with off-street parking on the east side of Kaiwharawhara Road. On the west side, the transitional project will initially include a combination of peak hour clearway with parking permitted off-peak (from #1 to #25 and #53 to #57 Kaiwharawhara Road) and a separated cycleway along the reminder of this section. Overall, there are 46 existing parking spaces on the west side of Kaiwharawhara Road. The following details Stage 1 for the west side:

- From #1 to #25 Kaiwharawhara Road, there will be a clearway from 4-7pm Monday to Friday. This means during this three-hour period, parking will not be permitted in this location. This equates to a removal of nine unrestricted spaces and three P30 spaces between 4-7pm. During the day time, when the clearway is not active (i.e. 7am to 4pm) the remaining spaces will be converted to P60 spaces from P30 spaces.
- From #27 to #53 Kaiwharawhara Road, the facility will be a separated/buffered cycleway. This results in the removal of all the parking on the west side of Kaiwharawhara Road in this section (at all times). This amounts to a removal of 23 parking spaces.
- From #53 to #57 Kaiwharawhara Road, the cycle facility will be a clearway from 4pm-7pm Monday to Friday. During this three-hour period, parking or loading will not be permitted in this location. Three of the spaces in this section will be removed. Four of the spaces will be converted into a Loading Zone P10 from 7pm to 4pm and clearway from 4-7pm. Four of the spaces will be converted to P60 from 7am-4pm and clearway from 4-7pm.

One unrestricted parking space will be removed due to the installation of no stopping lines at the bottom of Old Porirua Road. On the eastern side of Kaiwharawhara Road (in the downhill direction) the P30 parking will be converted into P60 parking to allow a longer stay (e.g. lunch or a meeting). This changes 16 P30 spaces to 16 P60 spaces.

Stage 2 – completion in 2025

The second stage is to construct a separated cycleway in the uphill direction along the entire length of Kaiwharawhara Road. This results in the removal of all parking spaces on the west side (46 spaces on Kaiwharawhara Road). The loading zone outside #55 Kaiwharawhara Road will be retained.

Parking inventory through the stages

The parking inventory in this section throughout the changes is shown in Table 5. This shows the existing inventory, Stage 1 and Stage 2. There is a total removal of 33 spaces in Stage 1. There is a total removal of 49 spaces in Stage 2. There is one existing loading zone, and one loading zone being added. These are not included in Table 5. The parking inventory per street before and after the changes is shown as Table 6.

Table 5 Parking inventory in the Kaiwharawhara Road section before and after the cycleway project

Restriction	Existing inventory	Stage 1 inventory	Stage 2 inventory
Unrestricted	125	79	79
P60	31	63	47
P30	19	0	0
Mobility	1	1	1
Total	176	143	127

*Two P60 spaces removed and two added

Table 6 Inventory per street for the entire Kaiwharawhara Road section existing and after the Stage 2 changes

Street	Existing Inventory	Inventory after Stage 2
Kaiwharawhara Road	Unrestricted: 120 P30: 19 P60: 0	Unrestricted: 79 P30: 0 P60:16
Old Porirua Road	Unrestricted: 5	Unrestricted: 4
Westminster Street	P60: 15 Mobility: 1 Loading: 1	P60: 15 Mobility: 1 Loading: 1
Pickering Street	P60: 9	P60: 9
Cameron Street	P60: 7	P60: 7

Anticipated parking occupancy after Stage 2

At the end of Stage 2, there will be 49 parking spaces permanently removed. This is approximately 27% of the entire section inventory and 33% of the inventory on Kaiwharawhara Road. When only the unrestricted spaces are considered, this is a removal of 37% of the unrestricted spaces in the entire section and 36% of the unrestricted spaces on Kaiwharawhara Road. For the time restricted spaces, this is a 10% decrease in the entire section and 16% on Kaiwharawhara Road.

Table 7 shows the peak occupancy of the unrestricted and the time restricted (P30 and P60) parking on Kaiwharawhara Road from the surveys as well as the expected peak occupancy after the parking is removed. The time restricted parking is assessed together as it is all less than an hour. It is assumed that the users who would previously use the P30 spaces would now use the P60 spaces.

Table 7 Occupancy on Kaiwharawhara Road from survey and the expected occupancy after parking removal

Day	Restriction	Peak from survey	Expected peak after parking removals
Thursday	Time Restricted	84%	100%
	Unrestricted	80%	100%**
Saturday	Time Restricted	74%*	100%**
	Unrestricted	37%*	60%

*It should be noted that on the Saturday the two peak values were the first recordings of the day

** This is the maximum capacity achievable; the actual demand is higher than this

During weekdays after Stage 2, it is expected that there will be insufficient parking supply on Kaiwharawhara Road to achieve the desired occupancy threshold of 85%. On Saturdays, the time restricted parking is likely to be over capacity and the unrestricted parking is likely to have sufficient capacity.

During the weekday, the unrestricted parking removed is typically used by commuters (See Section 2.2.1). This parking is classed as lower priority according to the Wellington Parking Policy 2020 (See Table 1). The occupancy of the Kaiwharawhara Road section is relatively high (approximately 81% throughout the day on the Thursday). After the removal of parking spaces, there are approximately 33 unrestricted parking users who will need to find an alternative car park to reduce the occupancy to 85% at the peak. The other unrestricted parking in the Kaiwharawhara Road section is already over the 85% occupancy threshold. When the Kaiwharawhara Road section is at its peak (1pm - weekday), the Cameron Street section is only expected to be at 66%. This section will have capacity to accommodate approximately 8 displaced users from Kaiwharawhara Road. There will still be several users (approx. 25) who cannot be accommodated in either the Kaiwharawhara Road section or the Cameron Street section. Mitigation measures for these users are discussed in Section 2.4.

When the weekday time restricted parking is considered, the occupancy is currently 84%. After the removal of the three time restricted parks, there is not enough capacity to accommodate all users in the Kaiwharawhara Road section. However, several unrestricted spaces in the Cameron Street section are proposed to be converted to P60 & P120 restrictions. It is expected the excess users from Kaiwharawhara Road (approx. two vehicles) will use these (See Section 2.4).

In the weekend, the occupancy of the unrestricted spaces on Kaiwharawhara Road are not expected to exceed the 85% occupancy threshold, however, the time restricted parking will. There are adequate unrestricted spaces to accommodate the short-term users who have been displaced. Therefore, no users are expected to transfer into the Cameron Street section on weekends. This change is reflected in Table 9.

Table 8 Thursday peak occupancy and expected occupancy of the unrestricted spaces after removals in the Kaiwharawhara Road and Cameron Street sections due to the cycleway

Section	Current occupancy (Kaiwharawhara Road peak)	Expected peak occupancy (Kaiwharawhara Road peak)
Kaiwharawhara Road	81%	85%*
Cameron Street	52%	85%*

*This is capped at the occupancy threshold. The demand exceeds 100%.

Table 9 Saturday peak occupancy and expected occupancy of the unrestricted spaces after removals in the Kaiwharawhara Road and Cameron Street sections due to the cycleway

Section	Current occupancy (Kaiwharawhara Road peak)	Expected peak occupancy (Kaiwharawhara Road peak)
Kaiwharawhara Road	38%	63%
Cameron Street	27%	27%

The parking changes through the stages are shown in Figure 10, Figure 11, and Figure 12. These figures show all spaces which are being removed/ modified as a result of the cycleway project. Figure 10 shows the existing restriction of these spaces, Figure 11 shows the restrictions in Stage 1, and Figure 12 shows the restrictions in Stage 2. Where parking has been removed all together for the improvements, it has been removed from the maps.

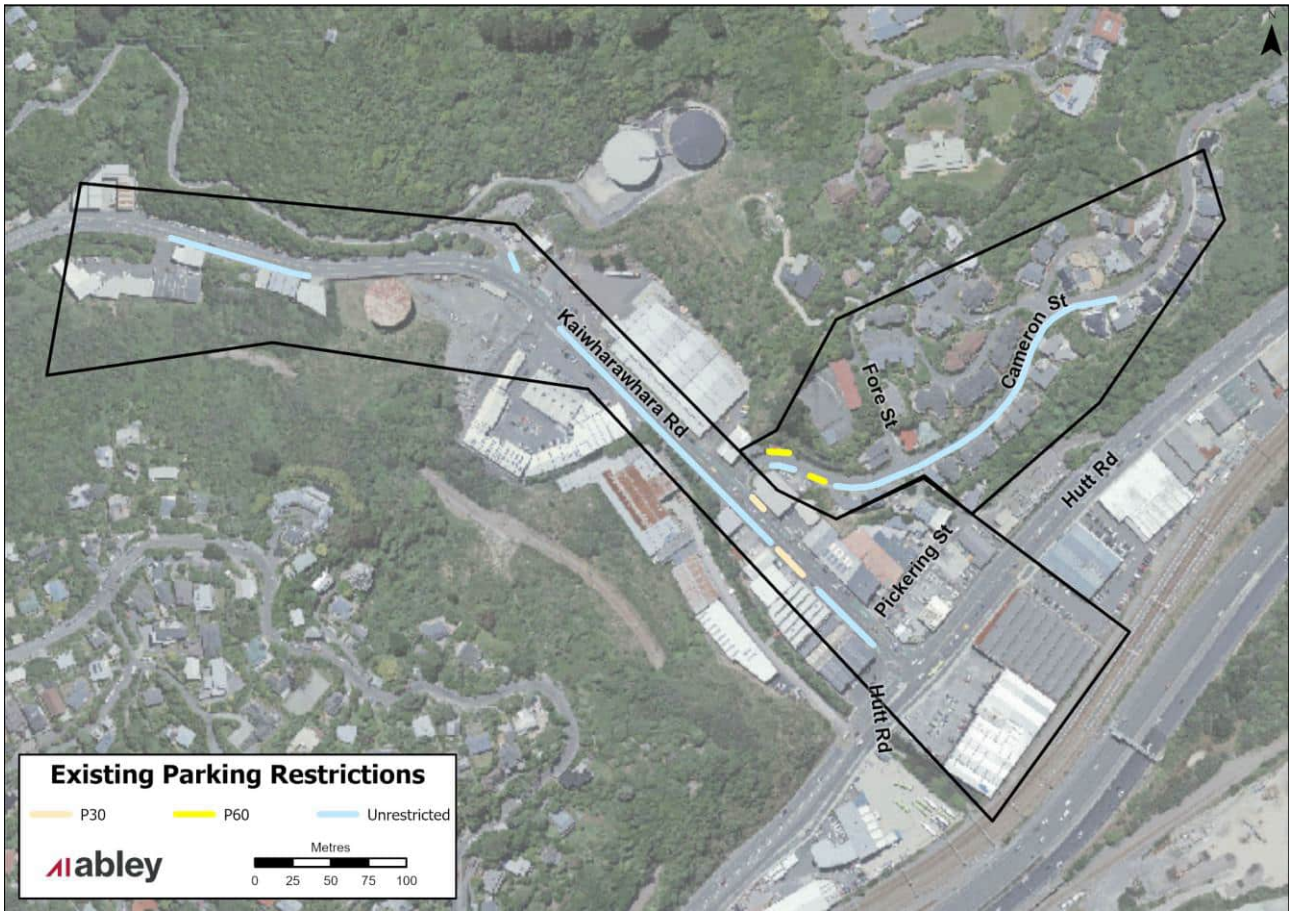


Figure 10 Existing parking restrictions of parking spaces affected by the cycleway project

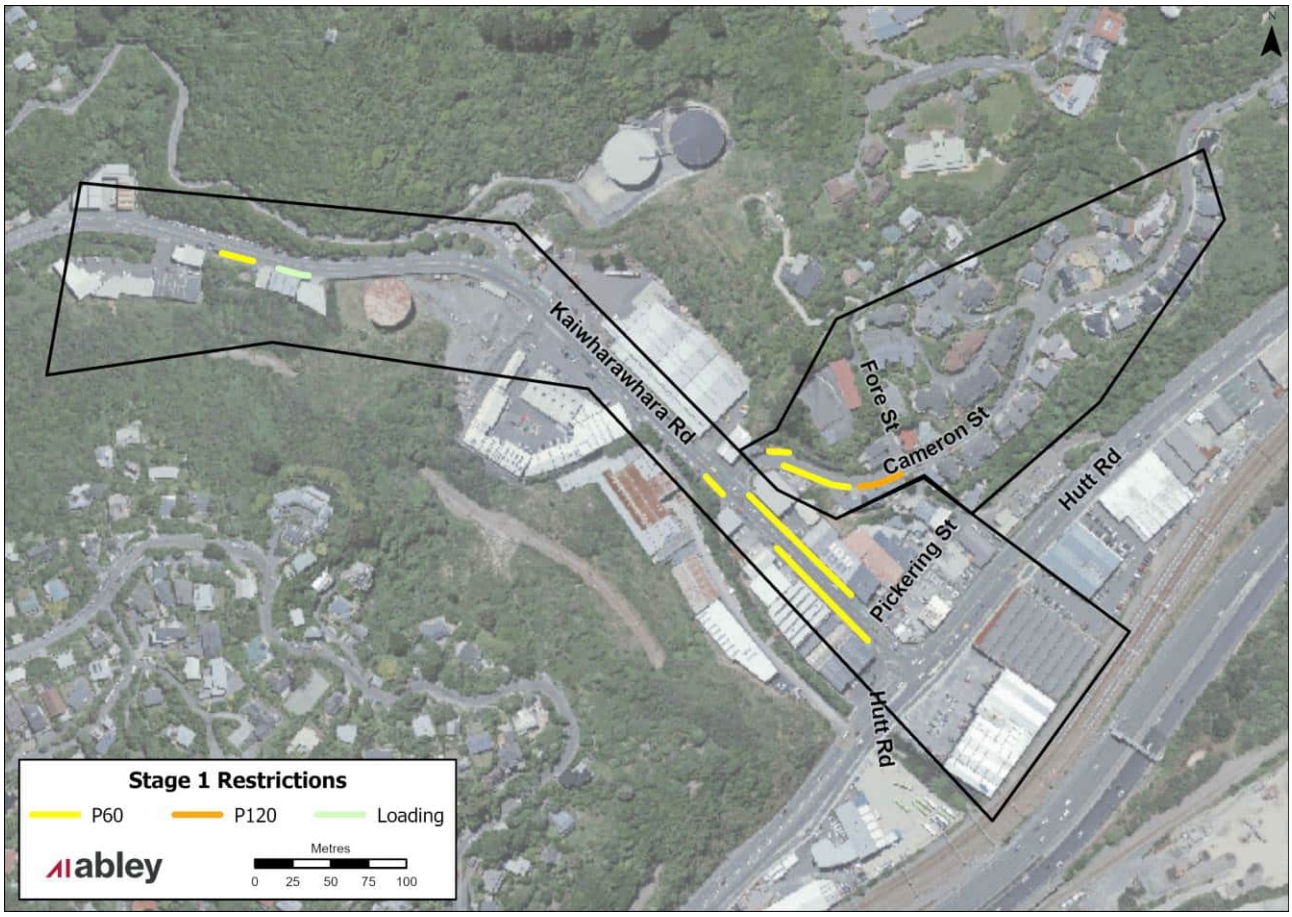


Figure 11 Stage 1 & 2 parking restrictions of parking spaces affected by the cycleway project (Note: Parking spaces and the loading zone on the west side of Kaiwharawhara Road will be subject to a clearway during the afternoon period)

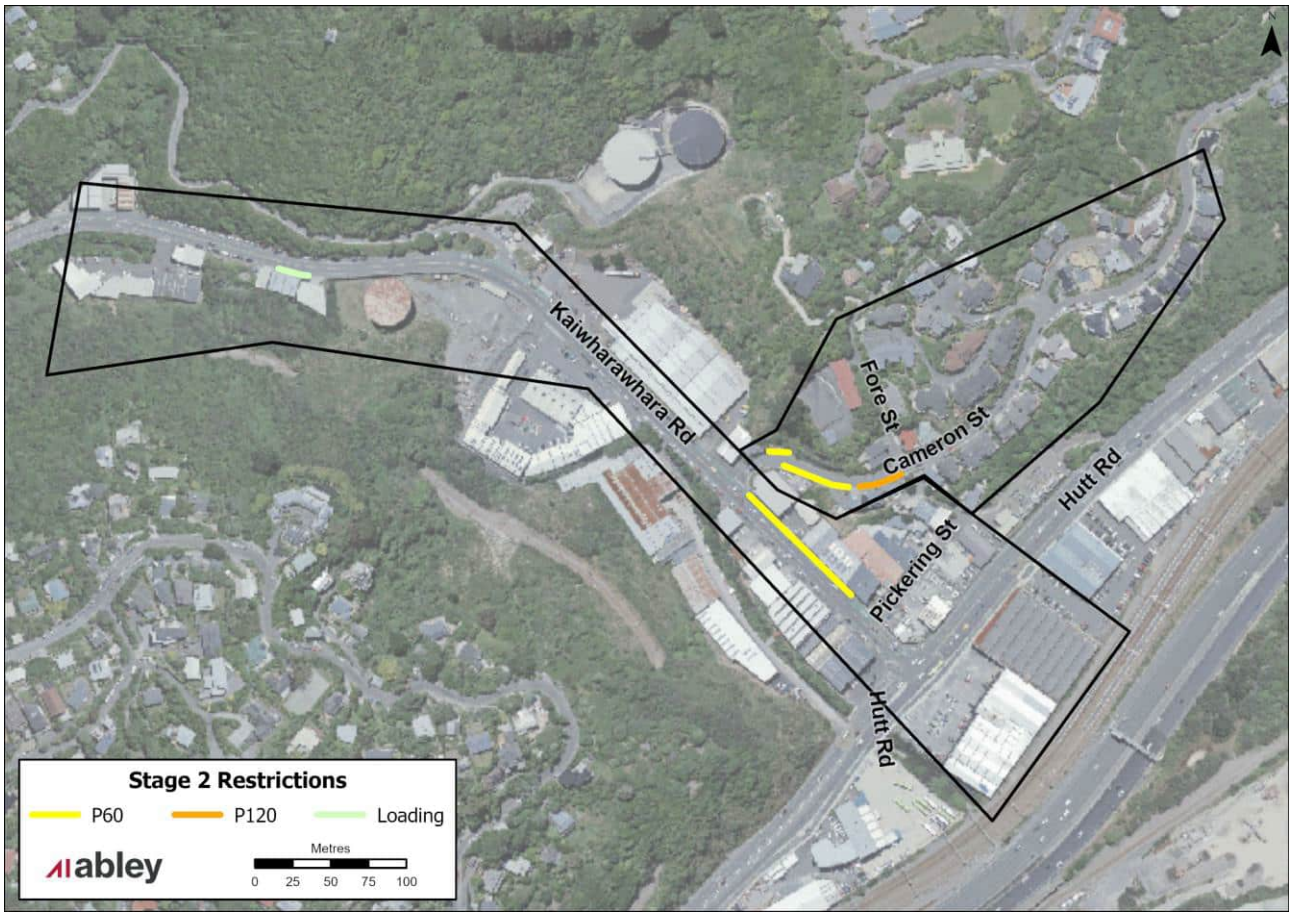


Figure 12 Stage 3 parking restrictions of parking spaces affected by the cycleway project

2.4. Mitigation of parking impacts

There is inadequate capacity to accommodate all of the displaced users from Kaiwharawhara Road. Both the Kaiwharawhara Road and Cameron Street sections are at or above the 85% threshold after the changes due to the cycleway project. Table 10 shows the proposed mitigation for both commuters and short stay users.

Table 10 Proposed Mitigation

Parking Type	Proposed Mitigation	Level of Impact after
Commuter (Lower Priority)	Encourage other modes of travel where possible. Commuter parking is lower priority (See Table 1). No additional commuter spaces are provided.	Very High
Short Stay	Encourage short stay users to park in the P60 and P120 parking on Cameron Street.	Low – this parking is available within a three-minute walk from the removed P30 spaces

It is recommended that WCC engages with residents and businesses in the Kaiwharawhara Road area to detail the changes occurring and where there is excess parking available. On top of this, WCC could provide more cycle parking facilities/storage to encourage the commuters to the businesses in Kaiwharawhara Road to use more active transport modes. This will aid the encouragement already provided from the installation of the cycleway.

3. Cameron Street

3.1. About the area

The Cameron Street section is a primarily residential section which connects the main cycleway route on Kaiwharawhara Road to the Bridle Track (which connects to Khandallah). There were no roadworks occurring in this section during the survey days which would affect the parking survey. The section is shown as Figure 13.

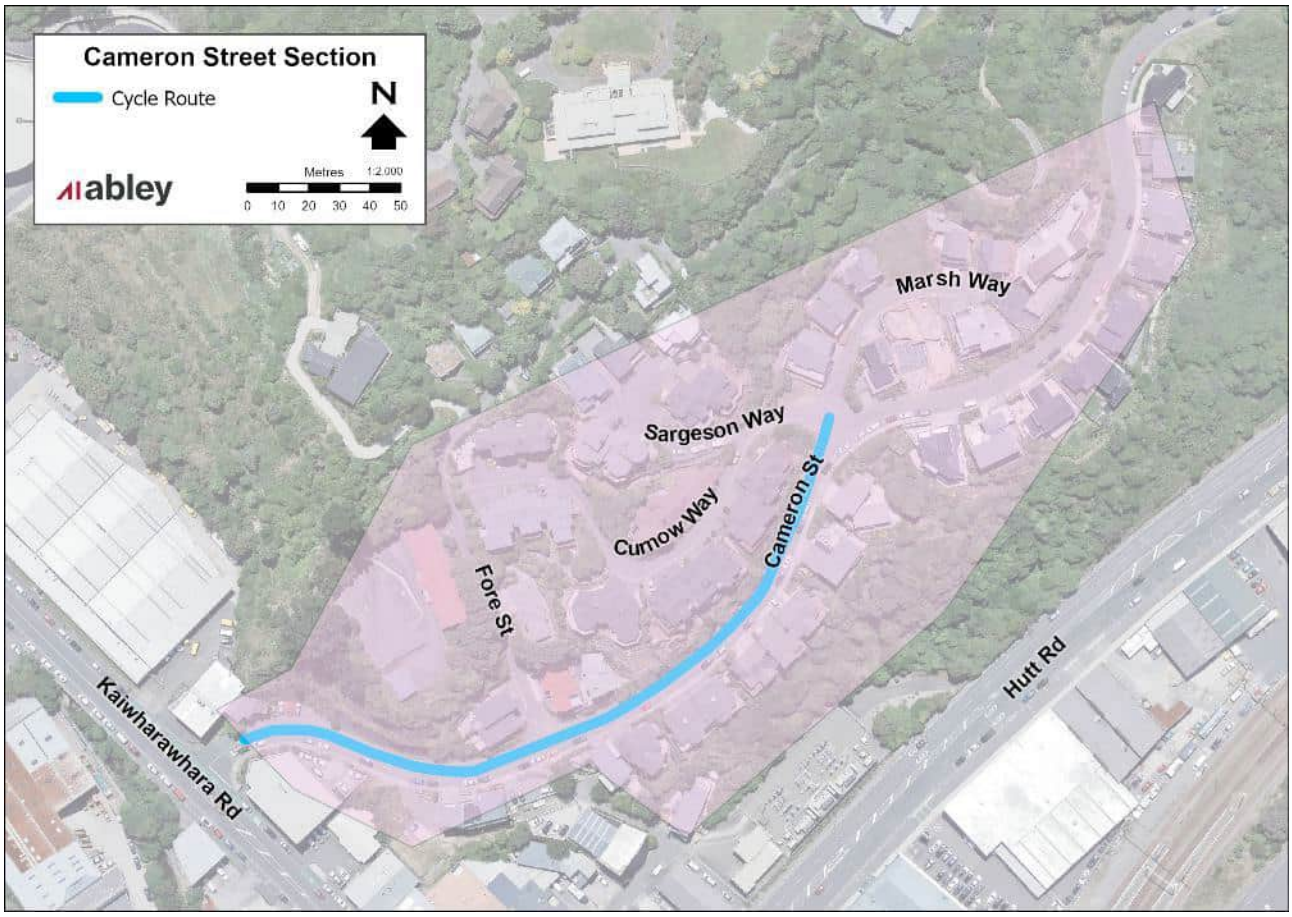


Figure 13 Cameron Street parking study area

3.2. Current parking and usage

All of the parking in this section is unrestricted on-street parking. There is a small section of P60 parking at the southern end of Cameron Street (See Appendix A), however, this is considered to be part of the Kaiwharawhara Road section as part of this analysis. There are 52 spaces on Cameron Street in the parking survey (noting the survey only extended to #54 Cameron Street (see Table 11). Marsh Way, Curnow Way and Sargeson Way are private roads which are all accessed from Cameron Street. During the surveys it has been observed that there is a small number of vehicles parking on the roadside on these roads. These are a mix of what is assumed to be residential parking and some visitors (tradesperson vans were observed). Given the private nature of these roads, they have not been included in this analysis. Given the narrow width and steep gradient of Fore Street it has been assumed that it is not suitable for on-street parking.

Table 11 Parking inventory for the Cameron Street section

Restriction	Overall section inventory	Cameron Street uphill inventory	Cameron Street downhill inventory
Unrestricted	52	9	43

Figure 14 shows the parking occupancy throughout the day on Cameron Street (which is all the parking in the section). This shows the occupancy on both days. In this section, throughout the day, the occupancy decreases relatively consistently. On the Thursday survey the occupancy starts high (63%) and slowly decreases throughout the day. The occupancy in the entire section is approximately 20% higher from the Thursday survey compared to the Saturday survey. Most of the houses in this area have off-street parking facilities.

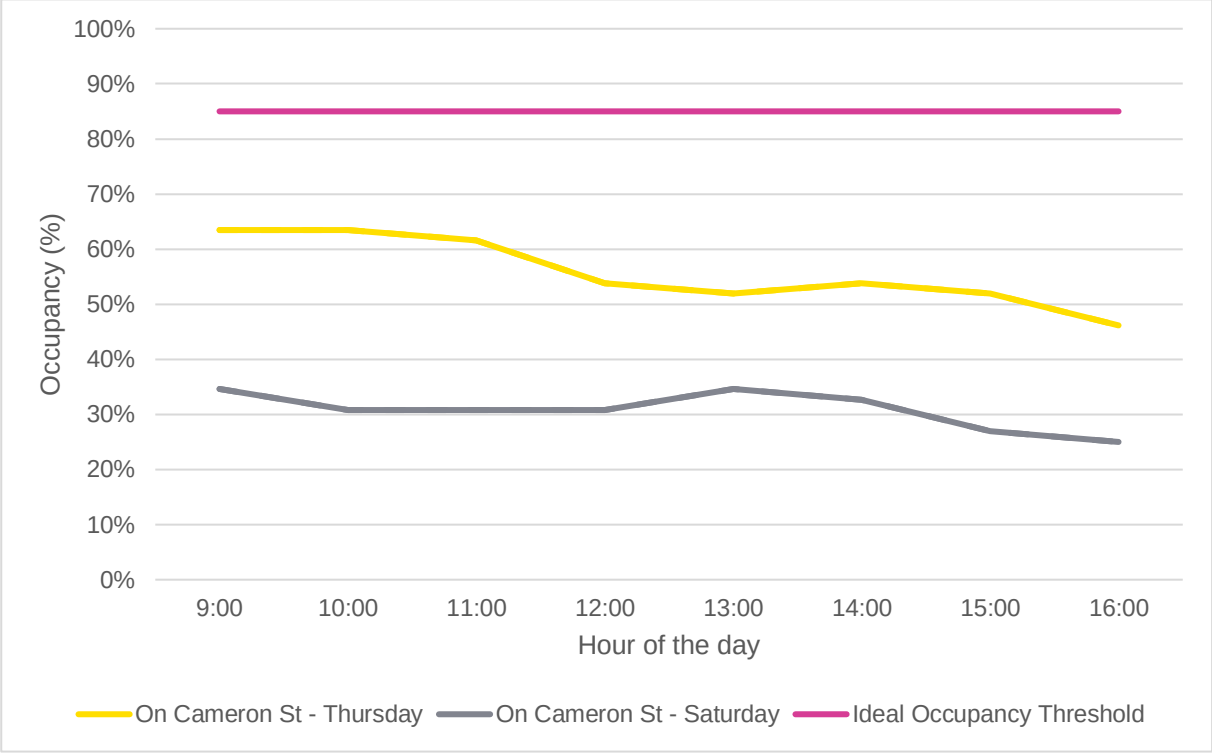


Figure 14 Parking occupancy from both survey days compared to the ideal parking occupancy of 85%

The duration of stay data for this area shows that most users are staying for 4+ hours (52%). This indicates there is a high proportion of residents parking occurring in this area. On top of this, it is expected that some users will be parking and commuting to work (either on Kaiwharawhara Road or in the CBD).

3.2.1. Overnight parking

Overnight, the average parking occupancy was 45% (from both survey days). When compared to the occupancy found during the weekday survey, this is notably lower. It is expected that a significant number of the users on Cameron Street are commuters, which drives the occupancy up during the day. During the weekend, the occupancy throughout the day is similar to the overnight occupancy, which also implies commuter parking is occurring during the week on Cameron Street. Overall, there is a mix of residents and commuters using this parking.

3.3. Impacts of Ngaio Transitional Cycleway on parking

The proposed cycle facility on this section includes an uphill cycle lane and a downhill shared lane. This results in the following changes to the parking on Cameron Street. These are all occurring during the first stage of the Kaiwharawhara Road improvements (see Section 2.3):

- No stopping lines added on Cameron Street opposite the entrance to Fore Street – this results in the removal of one unrestricted parking space.
- Four unrestricted spaces at the Kaiwharawhara Road end of Cameron Street (in the downhill direction) will be changed to two P60 spaces. Two of these spaces are removed to aid with safety at the Cameron Street/ Kaiwharawhara Road intersection. The 7 P60 spaces at the bottom of Cameron Road that have been analysed as part of the Kaiwharawhara Road section will be retained.
- Five unrestricted spaces in the downhill direction on Cameron Street are to be changed to P120 spaces.
- The remaining unrestricted spaces on Cameron Street will remain unrestricted. This includes 42 surveyed spaces. There are more spaces further up Cameron Street, however, these were not surveyed.

Table 12 shows the existing parking inventory and the parking inventory after these changes in the entire Cameron Street section.

Table 12 Cameron Street section inventory before and after upgrades

Restriction	Existing Inventory	Inventory after changes
Unrestricted	52	42
P60	0 (7 P60 are counted in Kaiwharawhara Road section)	2 (7 P60 are counted in Kaiwharawhara Road section)
P120	0	5
Total	52	49

Table 13 shows the current peak inventory and expected peak inventory after the removals of parking on Cameron Street. Both surveyed days are still below the 85% occupancy threshold.

Table 13 Occupancy of the Cameron Street section existing and after the proposed changes

Day	Restriction	Peak from survey	Expected peak after parking removals
Thursday	Unrestricted	63%	79%
Saturday	Unrestricted	35%	44%

There are expected to be vehicles who can no longer park in the Kaiwharawhara Road unrestricted spaces who will search for a car park on Cameron Street. The unrestricted parking being retained on Cameron Street is expected to be used by the same users (residents, commuters) as the unrestricted parking at present. There is enough space in the unrestricted parking on Cameron Street to accommodate approximately 8 additional users displaced from Kaiwharawhara Road before it exceeds the 85% occupancy target (during the Kaiwharawhara

Road peak). Table 14 shows the expected occupancy on the two survey days with the addition of users displaced from Kaiwharawhara Road. These users are expected to be commuters, which are 'lower priority' according to Table 1. Therefore, there are still a number of users from the Kaiwharawhara Road section who will be unable to find a park (See Section 2.3).

Table 14 Occupancy of the Cameron Street section existing and after the proposed changes – including the users transferred over from Kaiwharawhara Road

Day	Restriction	Occupancy during Kaiwharawhara Road peak - existing	Expected peak after parking removals
Thursday	Unrestricted	52%	85%
Saturday	Unrestricted	44%	44%

3.4. Mitigation of parking impacts

There is inadequate capacity to accommodate all the displaced users from Kaiwharawhara Road in the Cameron Street section. Both the Kaiwharawhara Road and Cameron Street sections are at or above the 85% threshold after the changes due to the cycleway. Table 15 shows the proposed mitigation for both residents and commuters. As discussed in Section 3.2, both residents and commuters currently use Cameron Street to park.

Table 15 Proposed Mitigation

Parking Type	Proposed Mitigation	Level of Impact after
Commuter (Lower Priority)	Encourage other modes of travel where possible. Commuter parking is lower priority (See Table 1). No additional commuter spaces are provided.	Very High
Resident (High Priority)	Encourage residents to use off-street parking where available. If it is found that there is significant issue with commuters taking all the available resident parking, a more rigid residents parking restriction should be implemented (e.g. P120 with residents exempt).	Very Low – none of the current residential users in Cameron Street are displaced more than a one-minute walk from the currently available parking spaces after the upgrades.

The time restricted parking is not expected to exceed the 85% occupancy threshold in this section. The removal of time restricted spaces on Kaiwharawhara Road is expected to cause short term users to transfer over into the new P60/P120 spaces at the bottom of Cameron Street. However, these are not expected to exceed the 85% occupancy threshold. When the occupancy begins to exceed 85% it is expected that some users will attempt to park on Fore Street or the private roads off Cameron Street. WCC should actively monitor this and provide no stopping lines where necessary. It is recommended that no stopping lines be added on the western side of Fore Street, as there is not sufficient width for safe vehicle passage when vehicles are parked.

4. Ngaio Gorge Road

4.1. About the area

This section is a low activity residential section that connects the industrial area of Kaiwharawhara to the residential parts of Ngaio (See Figure 15). There are few areas on this section for stopping, and most of the parking in this section is associated directly with the houses (through off-street pull in areas). At the time of the survey, major construction works were happening in the lower section of Ngaio Gorge Road. These works have resulted in the removal of parking spaces, however, given this has been the case for the last approximately five years, it is expected that the users of parking in the Ngaio Gorge have adjusted. This construction is not expected to affect the parking behaviour on Ngaio Gorge Road. It has been indicated by WCC that there is a plan to reinstate 15 car parks in the lower end of the gorge.

Given most of the parking in this section is available in pull over areas, which almost act as private parking areas for the residences close to them, a full survey has not been performed. Instead, the occupancy in this section has been assessed every two hours.

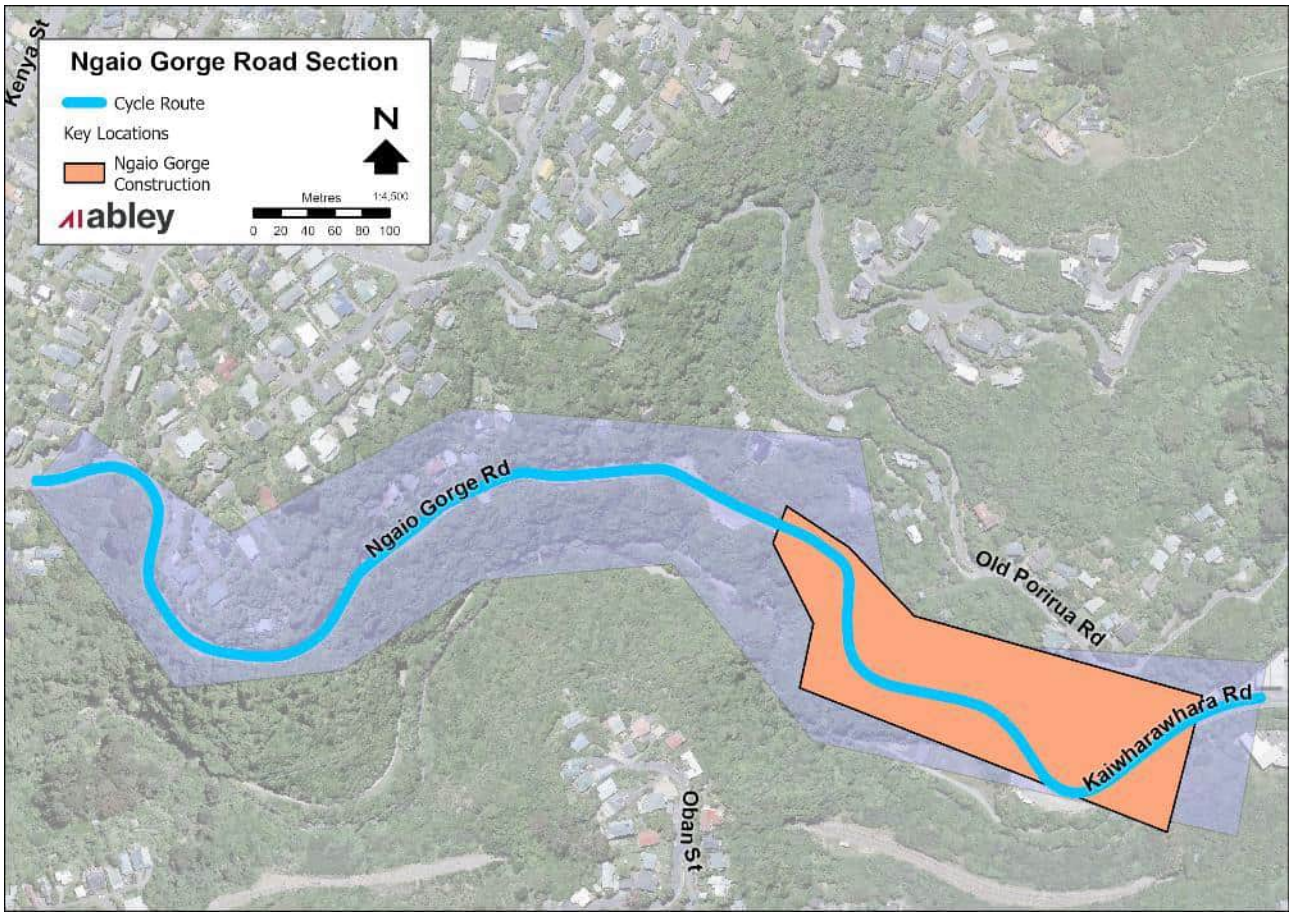


Figure 15 Ngaio Gorge Road study area

4.2. Current parking and usage

All the parking in this section is unrestricted parking and it is all in off-street pull in areas, which are only expected to be used by residents. There was an instance of vehicles who were observed to park illegally on the berm (see Figure 16) and an instance of vehicles who were observed to park illegally on the roadside; either with one wheel on the kerb or not (see Figure 17). Given this, it is hard to quantify exactly what the parking occupancy is in this section. However, given there are no spaces being proposed to be removed as part of this cycleway project in this section (as there are none on-street) this is not an issue.

Figure 16 Cars parked on the berm on Ngaio Gorge Road

Figure 17 Cars parked on the kerb in the Ngaio Gorge

Table 16 shows the number of vehicles parked in this section during the day on both survey days. This has not been assessed as an occupancy. This data shows the level of parking in this section

is relatively consistent throughout the day. There is more variation on the Saturday compared with the Thursday. This is expected, as the people who typically would have commuted to work (and left cars at home) are now not at work and likely using their cars (for errands, recreation, etc.).

Table 16 Parking counts on Ngaio Gorge Road on both survey days

Time	Thursday Count	Saturday Count
9am	18	19
11am	17	16
1pm	17	15
4pm	15	17

4.3. Impacts of Ngaio Transitional Cycleway on parking

The preferred option is a separated cycleway uphill and a shared lane towards the city. This results in no parking removal in this area. There is very limited parking in this section anyway, as most occurs in off-street pull in areas, typically associated with nearby residents.

When the Ngaio Gorge Slope Stabilisation project is complete, there will be 15 parking spaces provided in the former pull-in bays (which were used as parking for access to Trelissick Park prior to the slips occurring). They will be unrestricted publicly available spaces.

4.4. Mitigation of parking impacts

Given there is no parking removed in this section, little mitigation is required. As shown in Figure 17, vehicles park on the kerb on the uphill side of the road on Ngaio Gorge Road. This should be continually monitored after the cycleway is installed as vehicle parking in this section has the potential to block the cycleway, pushing cyclists into the live lane.

5. Kenya Street

5.1. About the area

The Kenya Street section is residential in nature and the entire section includes the top of Ngaio Gorge Road, and Trelissick Crescent. There are no shops or commercial activities in this area (aside from small businesses run out of residences). On both the survey days, roadworks were affecting the parking supply in this area (on both Kenya St and Trelissick Crescent). The parking occupancy data has been adjusted accordingly (see Section 5.2). The area assessed, with the cycleway location included, is shown in Figure 18.

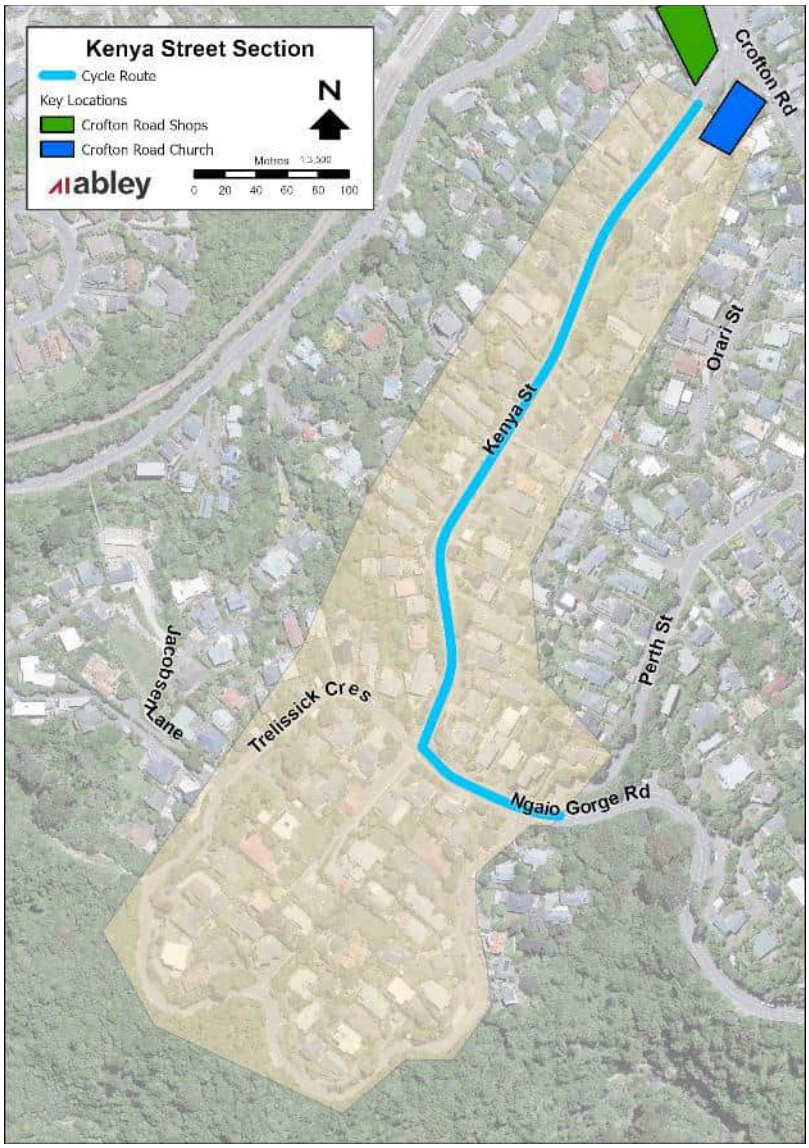


Figure 18 Kenya Street parking study area

5.2. Current parking and usage

All the parking (162 spaces) in this section are unrestricted on-street parks that are typically unmarked. Table 17 shows the parking inventory in this area. This includes the number of spaces on the roads in the parking study area. The construction in this section occurred at the southern end of Kenya Street. This was found to have closed a total of 25 spaces on both sides of Kenya Street. No spaces on Kenya Street were closed on the Saturday. The construction extended to Trelissick Crescent, this closed 20 spaces on the Thursday and 25 on the Saturday on Trelissick Crescent. Table 17 shows the number of spaces assuming no construction.

Table 17 Kenya Street section parking inventory

Restriction	Overall section inventory	Kenya Street inventory (towards Ngaio)	Kenya Street inventory (towards City)
Unrestricted	205	39	59

The occupancy throughout the day, on both days, is shown as Figure 19. This occupancy has also been compared to the occupancy threshold of 85% (See Section 1.3). Again, this data has been considered for the entire section and the parking spaces on Kenya St itself. The parking occupancy overall and on Kenya St are similar throughout the day. This is expected given approximately 50% of the spaces in this section are on Kenya St. The parking in this section is consistent throughout the day (variation of 5% on the Thursday and 6% on the Saturday). This low variation implies that a high proportion of the vehicles in this area are resident vehicles (long-stay parkers). This is expected, given there are no destinations (shops etc.) in this section or parking restrictions. Also, it is common for houses in this area to have off-street parking available. This is particularly the case on the south side of Kenya Street (approximately 90% of residences have off-street parking facilities). It was observed that some off-street parking was not being used, even during the overnight occupancy checks.

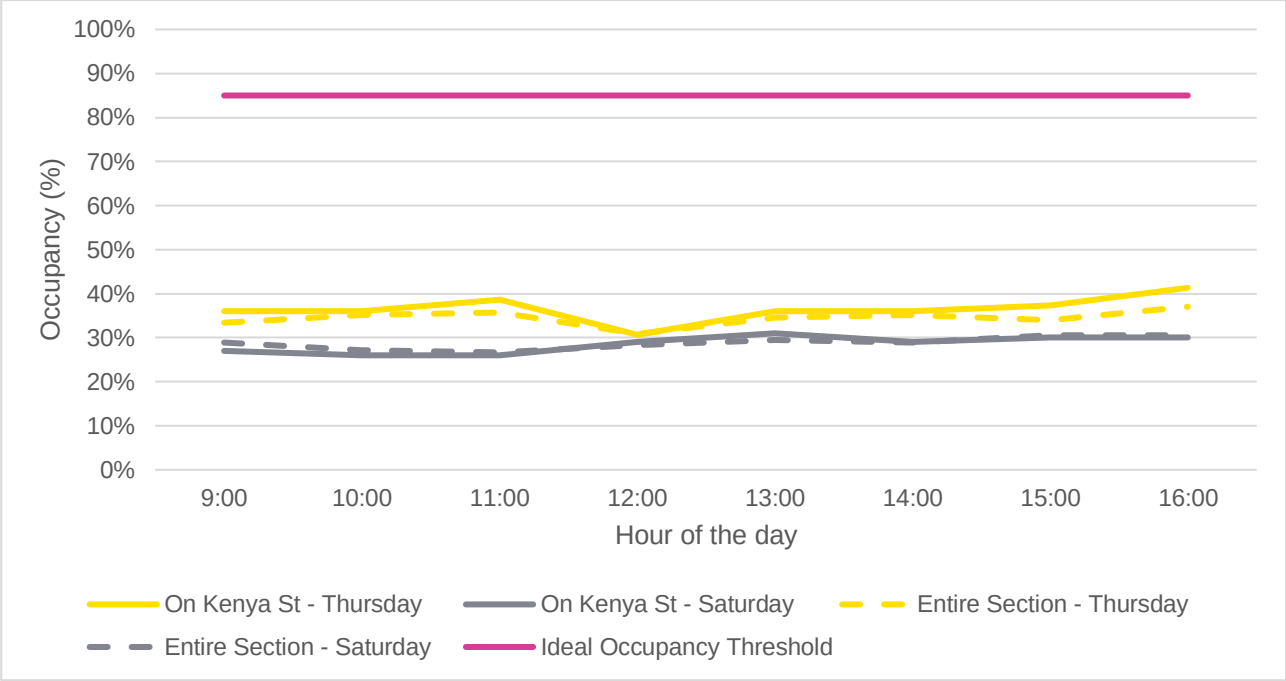


Figure 19 Kenya Street parking occupancy throughout both survey days compared to the occupancy threshold of 85%

The duration of stay data for this section shows that most users (38% on Thursday, 39% on Saturday) stay for 4+ hours. This further indicates the high proportion of residents parking occurring, as these users are not expected to move their cars during the day.

The peak occupancy on each street in this section is shown in Figure 20 and Figure 21. These figures show this entire section has an occupancy less than 40%.

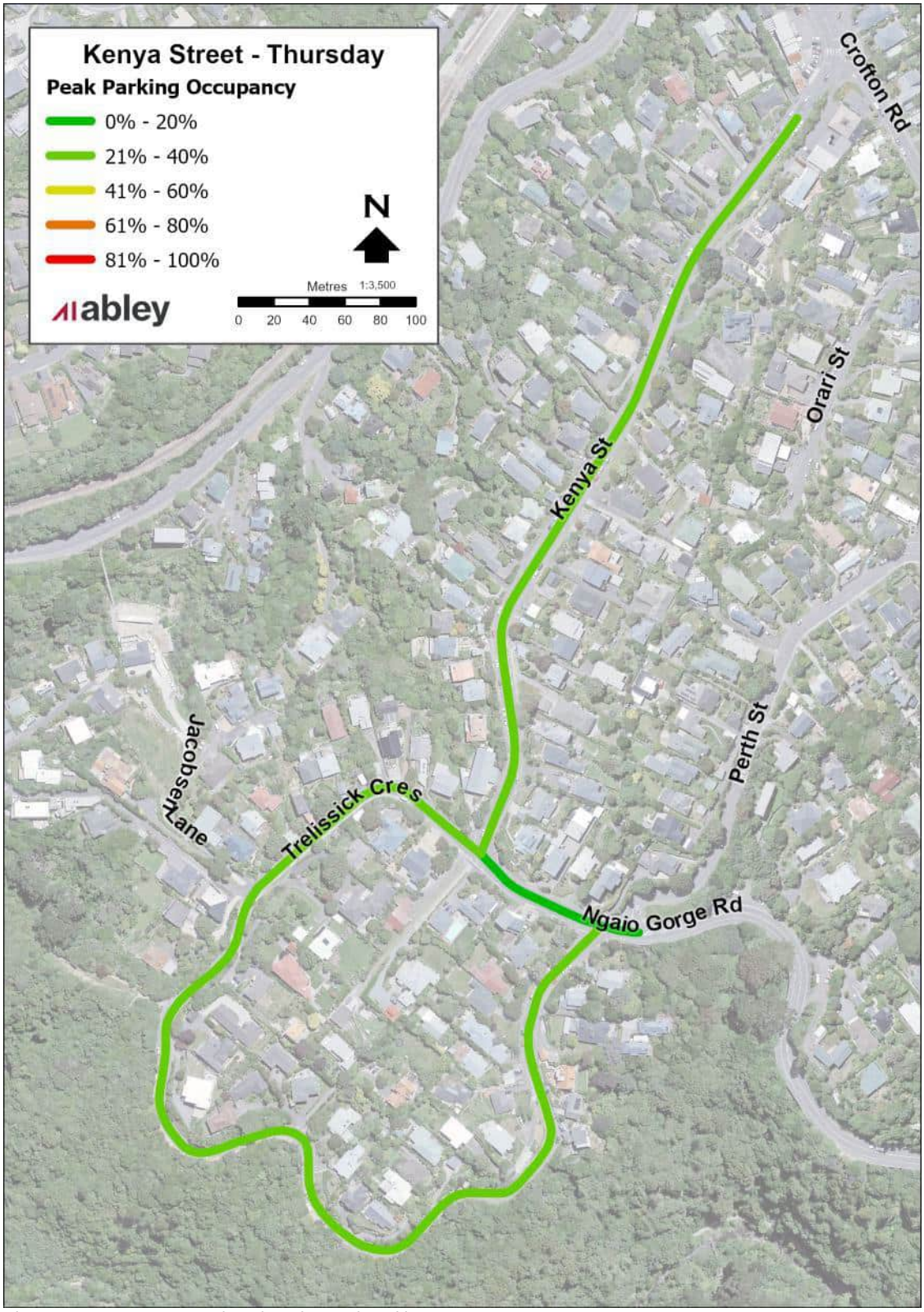


Figure 20 Kenya Street section Thursday peak parking occupancy per street

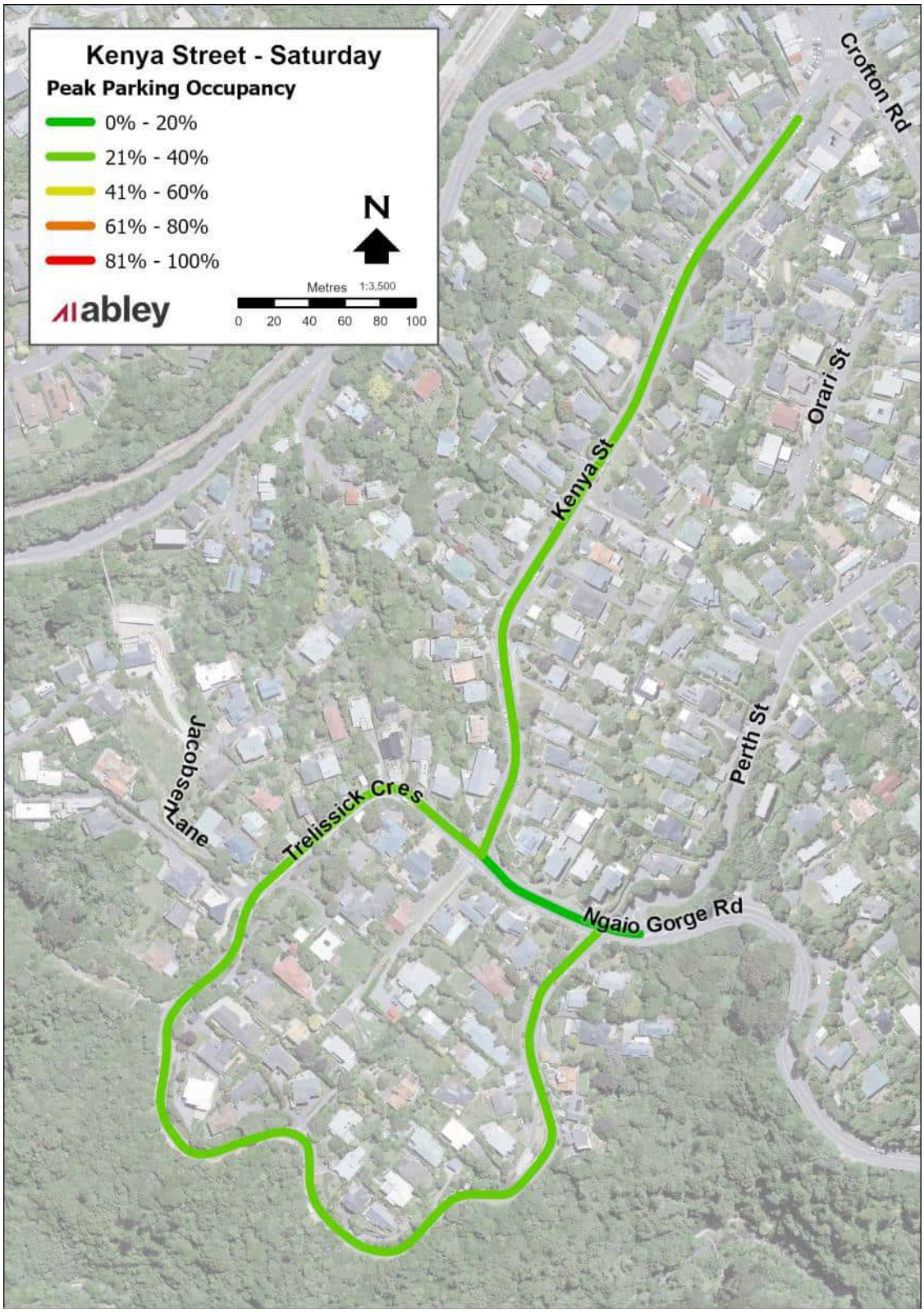


Figure 21 Kenya Street section Saturday peak parking occupancy per street

5.2.1. Overnight parking

Figure 22 shows the average parking occupancy from the two overnight occupancy checks taken. This occupancy shown is very similar to the peak occupancy data shown in Figure 20 and Figure 21. This is expected given the low levels of variation in parking demand throughout the day and is due to the limited destinations in this section. Most users of the parking are expected to be

residents/long-stay parkers. This is evidenced by the duration of stay data showing approximately 40% of users on both days stay for 4+ hours.

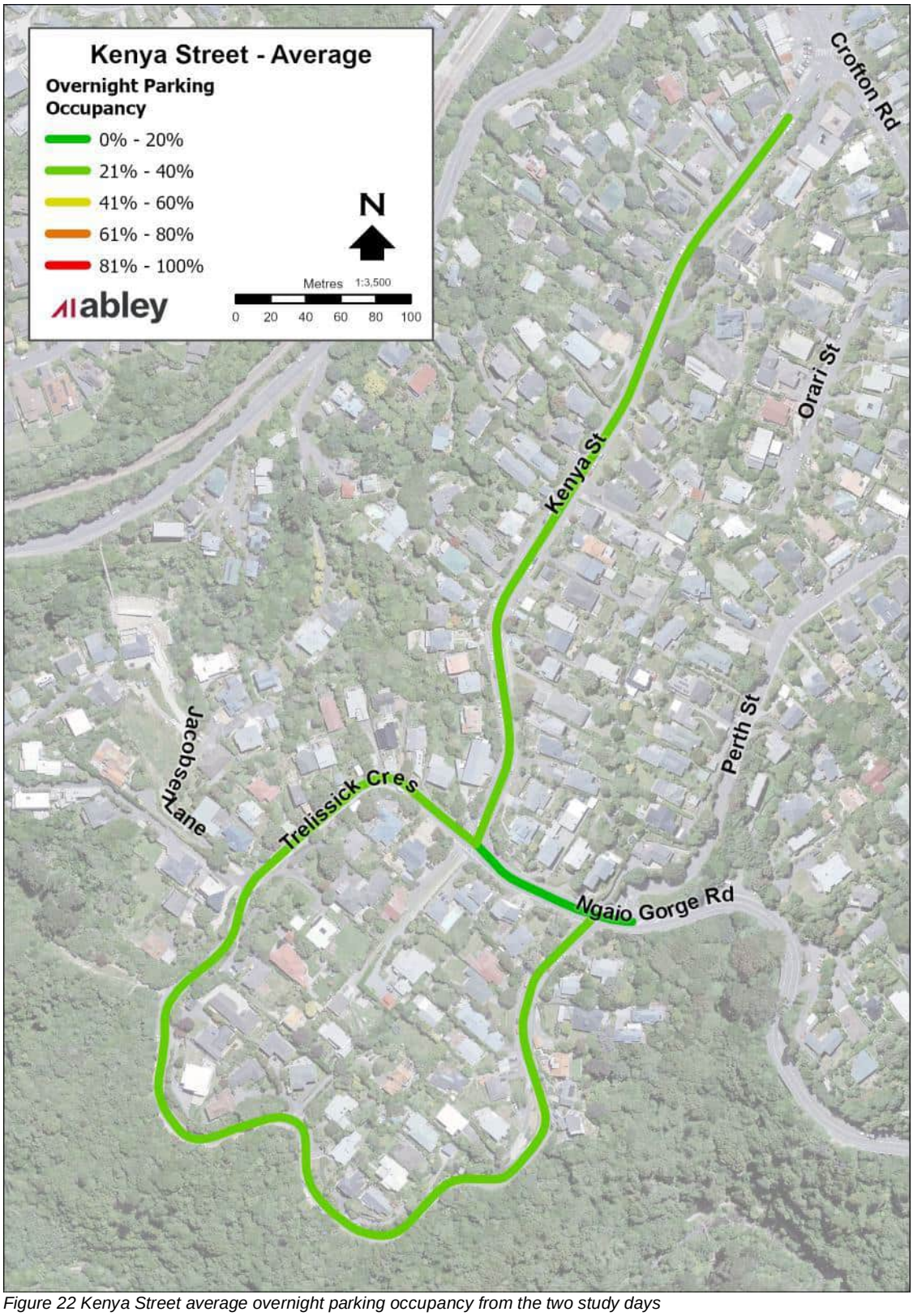


Figure 22 Kenya Street average overnight parking occupancy from the two study days

5.3. Impacts of Ngaio Transitional Cycleway on parking

The proposed option in this section provides a shared traffic lane towards Ngaio and a separated cycleway in the uphill direction away from Ngaio. This will result in parking only on the side of the road towards Ngaio. This is a removal of 58 parking spaces in the towards City direction, and four

spaces in the towards Ngaio direction (for tracking around corners). This removal is approximately 33% of the entire parking in this section and 63% of the parking spaces on Kenya Street.

The peak occupancy on Kenya Street from both days, along with the expected peak occupancy after the installation of the cycleway is shown in Table 18. It is noted that the parking inventory on the Thursday survey was decreased due to roadworks on the southern section of Kenya Street. The existing occupancy appears higher, however, the actual number of vehicles parked is very similar to the Saturday. Therefore, the peak occupancy shown is accounting for all the available spaces, so is the same on both days.

Table 18 Kenya Street peak occupancy on both days and the expected occupancy after the parking removal

Day	Peak occupancy currently	Expected peak occupancy after installation of cycleway
Thursday	41%	85%
Saturday	31%	85%

After the parking is removed to accommodate the cycleway, it is expected that the parking occupancy will exceed the 85% occupancy threshold. The excess parking can easily be accommodated by Trelissick Crescent and Abbott Street/ Crofton Road (part of the adjacent section). The parking removed is all unrestricted on-street parking. This duration of stay data and overnight parking occupancy heavily implies a high number of residents parkers in this section. Therefore, it is expected that the majority of parking removed will be used by residents. Residents parking is high priority (See Table 1). The adjacent streets where parking is available are close, and it is likely that users will be able to find a space within a 5-minute walking distance at most. This is likely to be the most distance someone will need to walk to find a space, so is a conservative estimate. All the available spaces within a 5-minute walk from the centroid of the parking removal are shown as Figure 23.

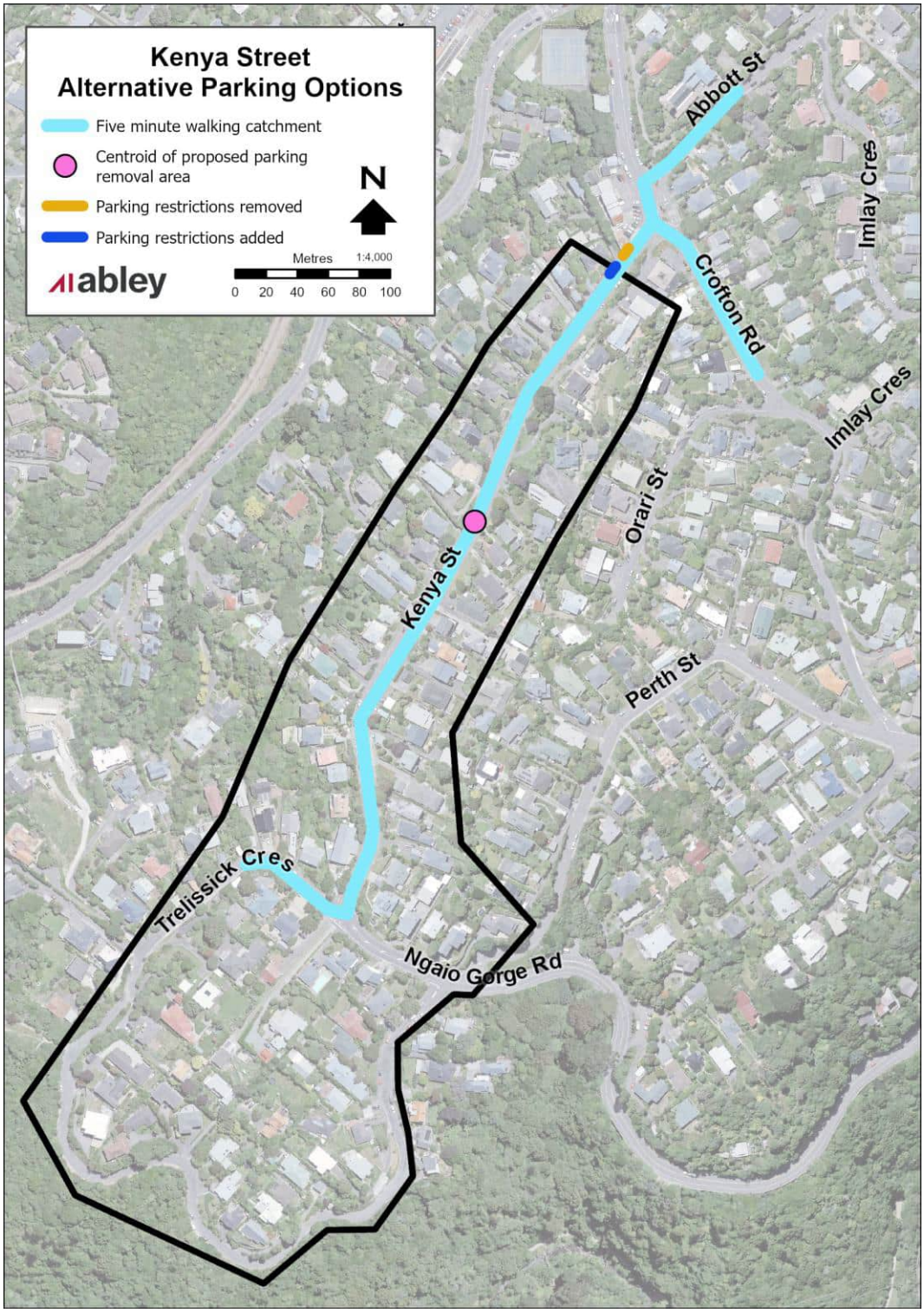


Figure 23 Parking within a five-minute walk from the centroid of the spaces removed on Kenya Street

5.4. Mitigation of parking impacts

Table 19 shows the proposed mitigation due to the removal of spaces on Kenya Street.

Table 19 Proposed Mitigation

Parking Type	Proposed Mitigation	Level of Impact after
Resident (High Priority)	Encourage residents to use off-street parking where available. Encourage residents of Kenya Street to park in the surrounding streets where possible.	Moderate – none of the current residential users in Kenya Street are displaced more than a five-minute walk from the currently available parking spaces after the upgrades.

6. Crofton Road

6.1. About the area

The Crofton Road section is located to the north at the top of the Ngaio Gorge. This area includes Crofton Road and Abbott Street, as well as the off-street car parks at the Ottawa Road / Crofton Road intersection. This area is primarily residential but includes a small section of business activity on the western side of Crofton Road. There is a dairy, takeaway shop, butcher and auto repair shop. Ngaio School is at the top of Abbott Street, however, it is beyond the area surveyed. On the survey days, there were no roadworks or parking closures affecting the parking supply in this area. The section assessed, with the cycleway location, is shown in Figure 24.

Figure 24 Crofton Road study area (with cycleway route shown)

6.2. Current parking and usage

Most of the parking in this section is unrestricted on-street parking. There is a small section of P30 parking around the shops on Crofton Road (See Appendix A). There are two off-street council owned facilities at the northern end of Crofton Road. These facilities have both unrestricted and time restricted parking. Table 20 shows the inventory of the different parking restrictions on Crofton Road and in the entire section area.

Table 20 Crofton Road section parking inventory

Restriction	Overall section inventory	Crofton Road inventory (towards Ngaio)	Crofton Road inventory (towards City)
Unrestricted	132	9	16

P30	9	8	0
P10	2	0	0
Mobility	2	0	0
Total	145	17	16

The parking occupancy throughout the day on both survey days is shown in Figure 25. This is compared to the occupancy threshold of 85% (See Section 1.3). The occupancy of the entire section is shown as well as the parking occupancy on Crofton Road itself. The occupancy in this section on both days was significantly lower than the occupancy threshold of 85%. The occupancy in this section does not often exceed 40%, with the peak on Crofton Road being at 2pm on the Thursday. The time restricted parking in this area has a peak occupancy of 55% at 2pm also on the Thursday. The unrestricted parking in this section peaked at 1pm during the Thursday survey (37%).

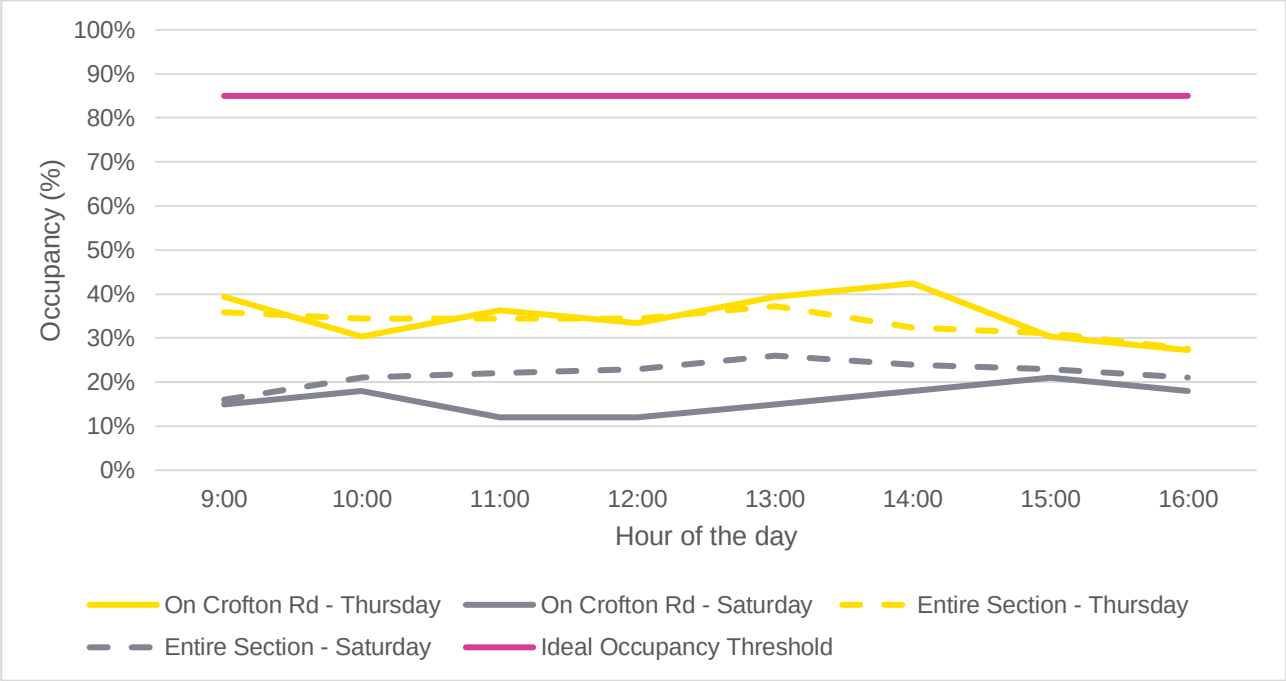


Figure 25 Crofton Road parking occupancy on both days compared to the occupancy threshold of 85%

The peak parking occupancy on each street in this area is shown in Figure 26 and Figure 27 for the Thursday and Saturday surveys respectively. The results show the following:

- The Ottawa Road car park was more than 80% occupied at its peak. No other street in this area was more than 60% occupied at any point during the two survey days.

Figure 26 Crofton Road section Thursday peak parking occupancy per street

Figure 27 Crofton Road section Saturday peak parking occupancy per street

6.2.1. Duration of stay

The duration of stay data can be used to assess the parking behaviour around the shops on Crofton Road. Figure 28 shows the average duration of stay profile for the two survey days. The time restricted parking is used for short stay (<1 hour) parking by 76% of users on the Thursday and 93% of users on the Saturday. The unrestricted parking typically has a similar proportion of short stay and long stay users (41% <1-hour compared to 35% 4+ hours).

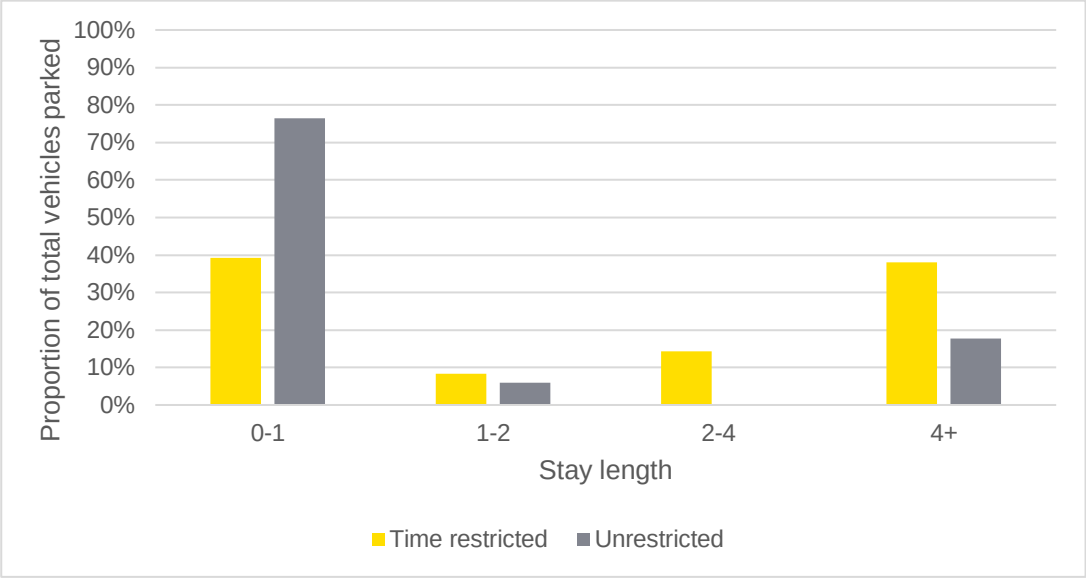


Figure 28 Parking duration of stay behaviour comparing the time restricted and unrestricted parking spaces in the entire section

As described in Section 2.4 this data can be used to assess the extent to which drivers are non-compliant with parking restrictions in this area. It has been assumed that everyone who stays for longer than one hour is non-compliant.

The survey found that an average of 16% of users of the time restricted parks stayed longer than the restriction allows. Table 21 shows the level of non-compliance for each parking restriction type on both survey days.

Table 21 Non-compliance with parking restrictions

Restriction	Thursday	Saturday
P30	23%	7%
P10	25%	No users surveyed

6.2.2. Overnight parking

In addition to the surveys throughout the day, overnight snapshot surveys were undertaken to assess the evening occupancy in the area. Figure 29 shows the average overnight occupancy of this section from both the weeknight and weekend checks. The occupancy overnight never exceeded 40% for any of the streets in this section. It is expected that most of the vehicles parked in this section overnight are residents' vehicles, so this data provides an insight into the residents' parking behaviour on Crofton Road.

Figure 29 Crofton Road overnight average occupancy from the two survey days

6.3. Impacts of Ngaio Transitional Cycleway on parking

The proposed cycleway in this section is the same as the Kenya Street section, a shared lane in the towards Ngaio direction and a separated cycleway in the opposite direction. This results in parking only being available on the side of the road in the towards Ngaio direction except for three P10 spaces proposed in the towards city side of Crofton Road (eastern side). This results in the removal of 16 unrestricted spaces. This is approximately 50% of the parking spaces on Crofton

Road where the cycleway is and approximately 11% of the parking spaces in the entire section. The P30 space outside the takeaway shop on Kenya Street has been removed to provide sufficient space for vehicle tracking. All the other P30 spaces on Crofton Road in the towards Ngaio direction outside the shops and businesses would remain. This is a total removal of 13 spaces on Crofton Road.

Table 22 shows the peak occupancy of the spaces on Crofton Road currently from both surveys as well as the expected occupancy after the removal of the parking spaces.

Table 22 Peak occupancy of the parking spaces on Crofton Road and the expected occupancy after the removal

Day	Surveyed peak occupancy	Expected peak occupancy after parking removals
Thursday	42%	70%
Saturday	17%	47%

All the parking removed is unrestricted all-day on street parking. It is expected that some of these spaces are currently used by residents, but this is not a high proportion. This is high priority parking (See Table 1). On top of this, given the proximity to the shops, it is expected that there is a reasonable number of short-term visitors parking on the towards city side of the road currently to access the shops and businesses. This is evidenced by the duration of stay data, see Section 6.2.1 (41% of users stay <1 hour). This parking is low priority parking according to Table 1. However the three P10 spaces on the eastern side of Crofton Road will provide for these visitors.

After the removal of the 13 parking spaces on Crofton Road, the occupancy of the spaces on Crofton Road are expected to reach 70% on the Thursday.

6.4. Mitigation of parking impacts

Given the parking occupancy is not expected to exceed 85% after implementation of the improvements, no specific mitigation is required. It is recommended that WCC continues to monitor the parking use in this area.

To allow for visitors to the businesses on Crofton Road, four new P10 spaces are being added (See Figure 30). This results in the removal of four unrestricted spaces in this section. There is also the removal of a P30 space due to the proposed improvements.

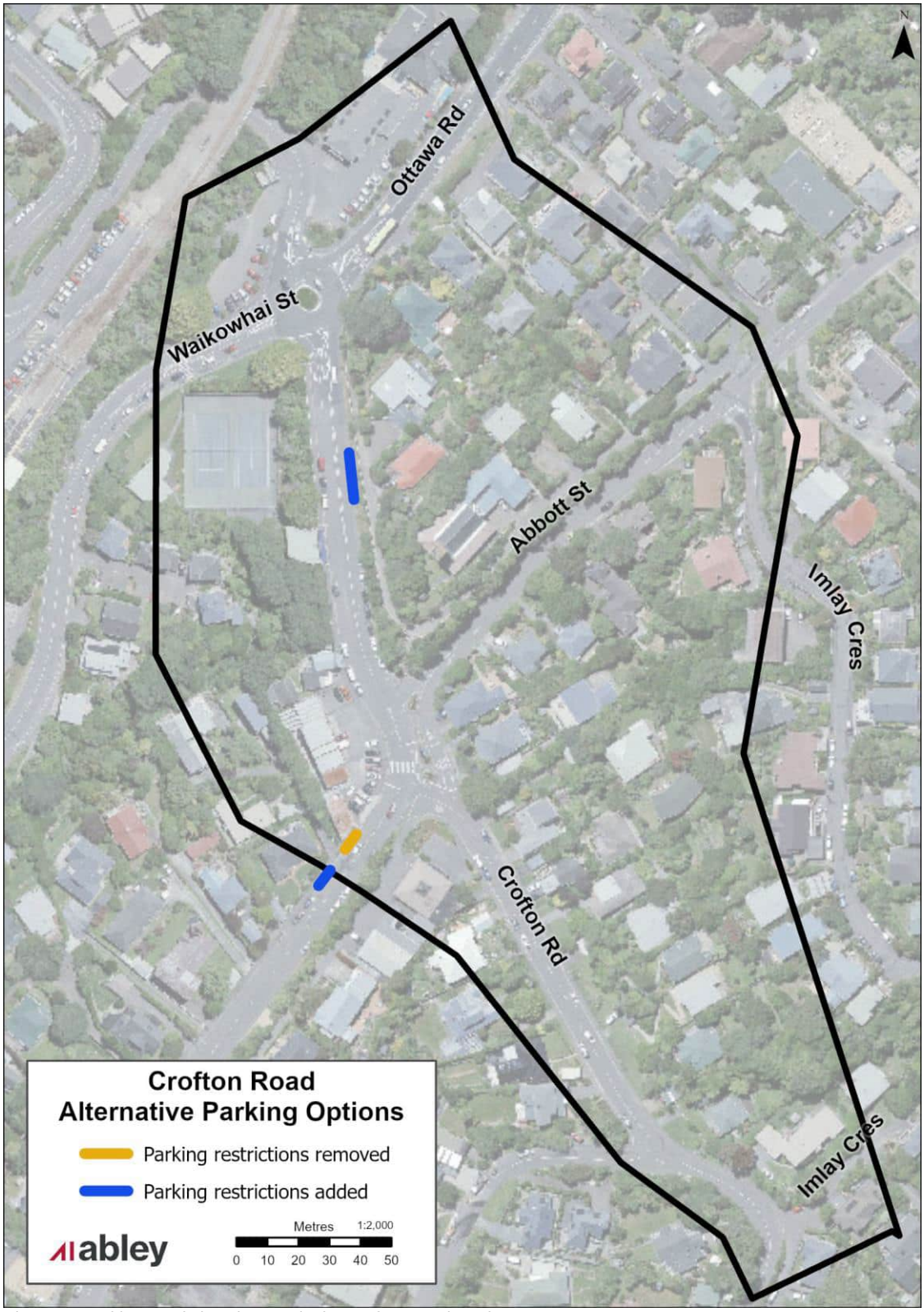


Figure 30 Parking restriction changes in the Crofton Road section

7. Conclusions

The key observations from this assessment are as follows:

- In all study sections, the parking occupancy on the streets where the cycleway is proposed is typically higher than the surrounding areas. This is largely due to the destinations located on the corridor.
- The parking occupancy is the highest around the commercial centres at the bottom of the Ngaio Gorge (on Kaiwharawhara Road and Westminster Street).
- In most areas, the overnight occupancy observed is like that observed throughout the day in the unrestricted parking sections. The main difference is on Kaiwharawhara Road during the weekday, where the occupancy was significantly higher through the day than at night.
- Of the entire parking in this area, 43% of users stay for one hour or less. Overall, 33% of users stay for 4+ hours. This is driven by the high number of users accessing the Kaiwharawhara Road commercial centres.
- There is a significant occurrence of users overstaying time restricted parks on Kaiwharawhara Road (approximately 40% from the weekday survey).
- The average occupancy throughout the entire study area is 44% on the Thursday and 28% on the Saturday.

Table 23 shows the summary of parking changes in each section as a result of the Ngaio transitional cycleway project. This shows the peak occupancy expected on the roads with cycleway sections before and after the parking changes and mitigation. All of the roads where the cycleway is proposed are expected to have a parking occupancy at or near the ideal peak occupancy. There is adequate capacity in the surrounding streets to account for the removal of the spaces on the cycleway corridor.

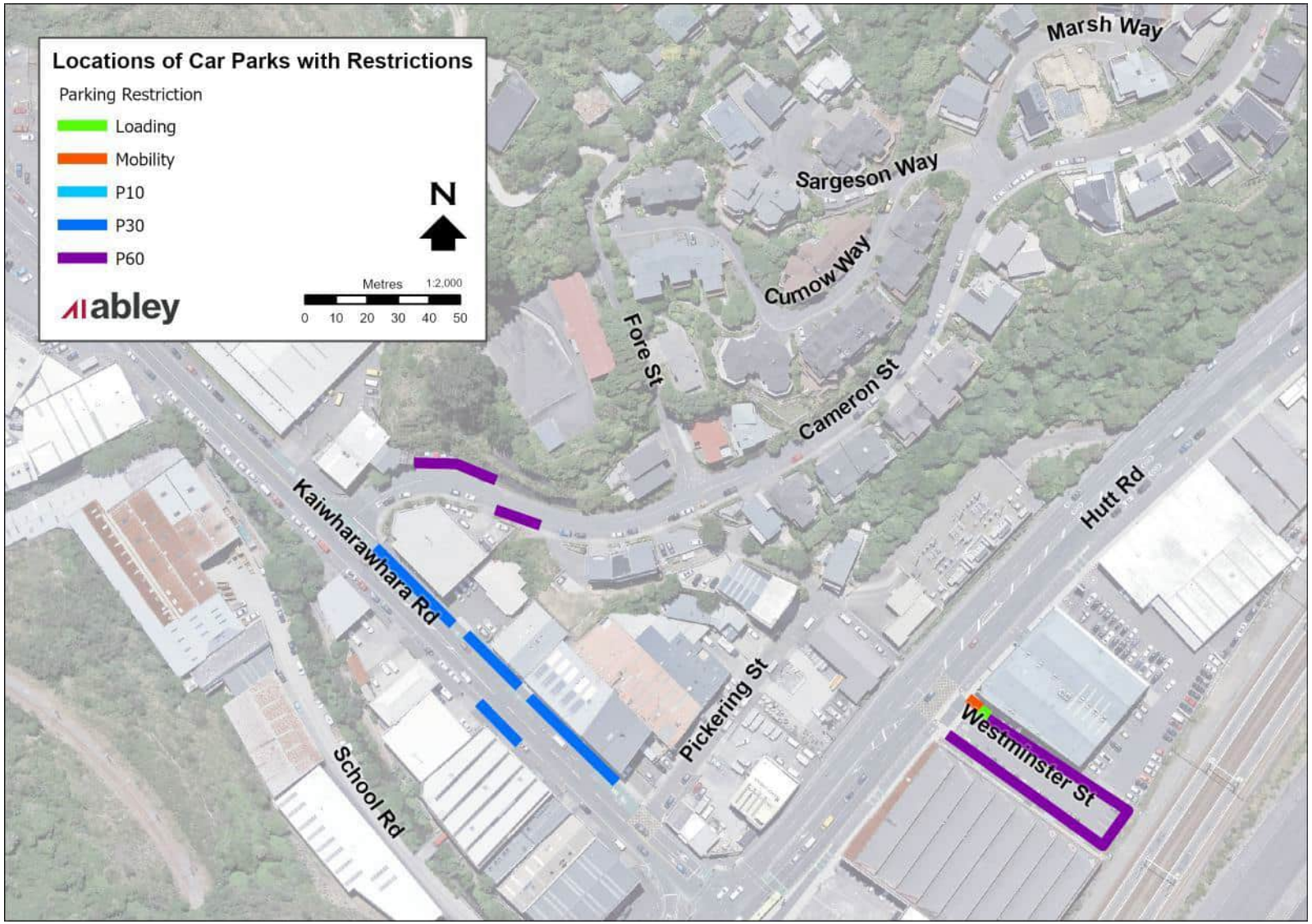
Table 23 Summary of proposed changes to parking for the Ngaio Transitional Cycleway Project (after completion of Stage 3)

Section	Current peak occupancy	Expected peak occupancy	Proposed changes
Kaiwharawhara Road	79% (1pm)	85%* (1pm)	Loss of 43 unrestricted spaces on Kaiwharawhara Road. Loss of three P30 spaces on Kaiwharawhara Road. All remaining P30 spaces on Kaiwharawhara Road to be converted into P60 spaces. Two P60 spaces and five P120 spaces to be added on Cameron Street (changed from unrestricted currently) to accommodate short term parking users displaced from Kaiwharawhara Road. Monitor the parking occupancy in Cameron Street (due to the overflow of vehicles from Kaiwharawhara Road), and if significant issues occur implement a parking restriction (P120/ P180 with the option for residents exempt)
Cameron Street	77% (9am)	85%* (1pm)	Change Four unrestricted spaces at the bottom of Cameron Street to two P60 – east side Change Four unrestricted spaces at the bottom of Cameron Street to P120 – east side Retain 42 unrestricted spaces on the east side of Cameron St Monitor the parking occupancy in Cameron Street (due to the overflow of vehicles from Kaiwharawhara Road), and if significant issues occur implement a parking restriction (P120/ P180 with the option for residents exempt)

Ngaio Gorge Road	-	-	No parking loss in this section as there is no on-street parking available. Addition of 15 unrestricted spaces after completion of the slope stabilisation project
Kenya Street	41% (4pm)	70%* (4pm)	Loss of 62 unrestricted spaces on Kenya Street.
Crofton Road	42% (2pm)	85%* (2pm)	Loss of 16 unrestricted spaces on Crofton Road across the road from the shops. Loss of one P30 space outside the takeaway on Kenya Street Convert one unrestricted space on Kenya Street to a P10. Addition of three P10 spaces on eastern side of Crofton Road..

*Maximum expected capacity due to the occupancy outlined in Section 1.2.

Appendix A – Existing Parking Restriction Maps


Locations of Car Parks with Restrictions
Parking Restriction
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Curnow Way
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Hutt Rd
Kaiwharawhara Rd
Pickering St
School Rd
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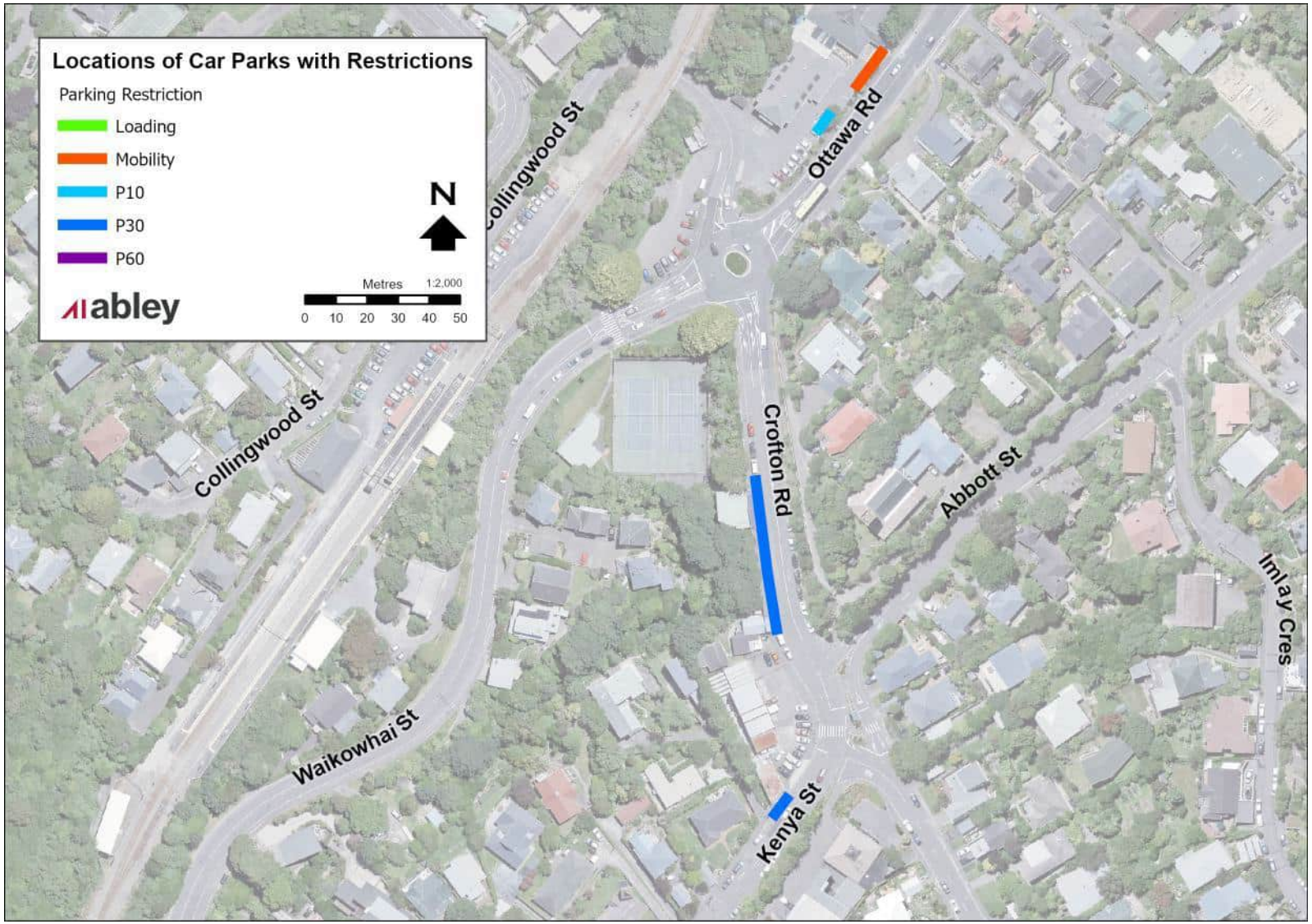
Locations of Car Parks with Restrictions
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Collingwood St
Crofton Rd
Abbott St
Imlay Cres
Waikowhai St
Kenya St

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

https://wellington.govt.nz/parking-roads-and-transport/transport/cycling