



Parking Impact Assessment

Thorndon Quay Hutt Road

17 September 2020

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1 Introduction

This memo provides an assessment of the potential impacts of changes to parking management along Thorndon Quay and Hutt Road.

The Thorndon Quay Hutt Road project is one of the Let's Get Welly Moving (LGWM) Early Delivery interventions. The benefits of this project include relatively quick project delivery and avoiding constraint by larger elements in the LGWM programme, such as Mass Transit. The project is currently in its first stage of development, which is seeking to identify a preferred option to deliver on the investment objectives agreed by the LGWM Steering Group.

Thorndon Quay and Hutt Road are part of the critical northern route to and from the city. As such, the early benefits that could be achieved along this route were identified as:

- Bus prioritisation
- Reliability improvements and safety improvements for commuters between the city and the planned Te Ara Tupua walking and cycling link between Ngauranga and Petone.

The objectives of the Thorndon Quay Hutt Road are to:

- 1)** Improve reliability of bus service equivalent to current daytime speed and variability by 2026 and maintained to 2036.
- 2)** Improve Level of Service for non-car modes by 2026 and maintained to 2036 - Walking LoS (C), Cycling LoS (A/B), Public Transport – Sufficient capacity for growth.
- 3)** Reduce the safety risk along Thorndon Quay and Hutt Road for all vulnerable road users and Hutt Road for vehicles by 2030.
- 4)** Amenity aligns with Place and Movement Framework criteria for Thorndon Quay by 2036.

To deliver on these objectives, there may be a need to manage or reduce the current parking capacity along Thorndon Quay and Hutt Road to provide bus priority and/or better cycling infrastructure.

2 Policy Setting

Wellington City Council (WCC) adopted a new parking management strategy on 26 August 2020 to better manage the demand across the city¹. The objectives of the parking policy are to:

- 1) Support shift in the type of transport used
- 2) Support safe movement
- 3) Support business well-being
- 4) Support city place-making, amenity and safety
- 5) Support access for all
- 6) Support move to becoming an eco-friendly city
- 7) Deliver service excellence and a safe working environment

There are a number of principles and tools for the management of parking, which will be implemented using an “area-based” plans developed in discussion with communities². It is beyond the scope of the project to develop an area-based parking management plan. However, the relevance of the policy in relation to this assessment is the parking hierarchy, which for the City Centre³ is summarised below.

Priority	User Group
Highest	Safe and efficient movement of people and goods (footpaths, bus lanes, cycleways, no stopping zones/clearways, construction and maintenance works)
High	Bus stops, mobility, urban design features, bicycle/ micromobility, Loading zones, short stay (car and motorcycles), car share
Medium	SPSV/taxi stands, EV charging
Low	Coach and bus (short stay and long stay)
Lower	Residents, commuters (cars and motorcycles)
Lowest	Long stay parking of private non-motorised vehicles

¹ <https://www.letstalk.wellington.govt.nz/41514/widgets/235013/documents/178807>

² Parking Policy (Section 4.5)

³ Parking Policy (Section 4.4 p23 Table)

3 Methodology for Occupancy Assessment

The assessment of the carparking demands has been undertaken using information gathered from WCC’s carpark sensor data provided to Beca Limited (Beca). Beca has processed this information for use by AECOM for the assessment of the demands. AECOM have relied on the information provided by Beca for this assessment.

The carpark sensor data was collected from the month of November 2019 and captured between 7AM – 7PM in 15-minute intervals. Parking demand has been split into stay durations of <= 30 mins, <= 2 hours, 2 - 4 hours and >4 hours to align with the parking hierarchy in the WCC parking policy. The effect and impacts of converting the angled parking on Thorndon Quay to parallel parking on the surrounding area has been.

The analysis and conclusions have relied upon a Power BI dashboard⁴, provided by Beca. Limitations and assumptions of the data are outlined below.

- A car in a space for less than 15 minutes has not been counted. i.e. a car stays for 5 minutes 7:05 – 7:10 won’t be counted.
- Duration of stay data will only contribute to the average stay for the day that the vehicle arrives. So, if spread across two days it won’t contribute to the average duration for its restriction type the next day.
- All parking instances in November of 12 hours or less have been included. This includes some that occurred out of the operating hours of the paid tariff, so the average stay might be inflated as a result, only including those parking instances of 12 hours or less is aimed at reducing the influence of these parking instances.

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<https://app.powerbi.com/view?r=eyJrIjoiNmFmYjI5OTktZmRiNi00Mjg1LWlzMWItMTA1NiYwNzBkYmQ2liwidCI6ImJiMGY3MTI2LWlxYzUtNGYzZS04Y2ExLTJiMjRmMGY3NDYyMCIsmMiOiEwfQ%3D%3D>

4 Thorndon Quay

Thorndon Quay is a key transport route linking the northern suburbs of Wellington to the CBD and providing local access for the western suburbs of Thorndon and Pipitea. It is the busiest commuter cycling route and a key bus route. It also provides access to local businesses with on-street car-parking (angled and parallel) and driveway access points along its length.

4.1 Existing Parking Capacity

There are 382 parking spaces available on Thorndon Quay with 272 of these for parking spaces up to 2 hours (P120, P30 and P5) leaving the remaining (P540 and P600) 110 parks for stays greater than 2 hours. The spaces provided are a combination of parallel and angled parking spaces. In the southbound direction, there is a clearway in place (no parking) during the morning peak period.

The parking adjacent to the southbound traffic lane is subject to clearway provisions in the morning peak period, which means no parking is permitted in these spaces during the time when the clearway is operating. The exception is the P5 parks near Bordeaux Bakery, which are not subject to the clearway provisions. There is no clearway in the northbound direction meaning that those spaces are available throughout the day.

Figure 1 shows the types of parking restrictions on Thorndon Quay. These parking restrictions have been allocated different sections/zones and the number of parks in each zone have been outlined. P120-W17 is split across two different locations and has 92 parks in total across the two locations.

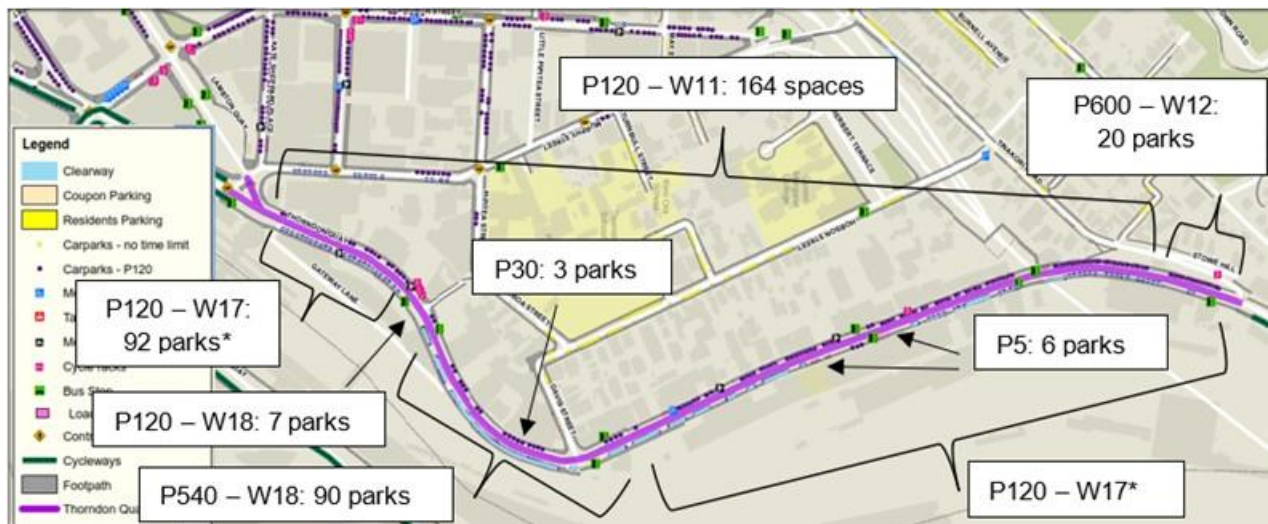


Figure 1: Thorndon Quay parking restrictions

4.2 Peak occupancy of existing car parking spaces

Table 1 outlines the maximum demand for car parking spaces on Thorndon Quay by duration of stay (<=30 mins, <= 2 hours, <= 4 hours and > 4 hours). The maximum occupancy for each stay period peaks at different times across the day meaning the maximum demand across the day to not equate to the sum of the different demand durations. Overall, the current peak demand for parking spaces is about 60% of the overall capacity for parking, and the commuter demands are only occupying approximately 60% of the long-stay spaces.

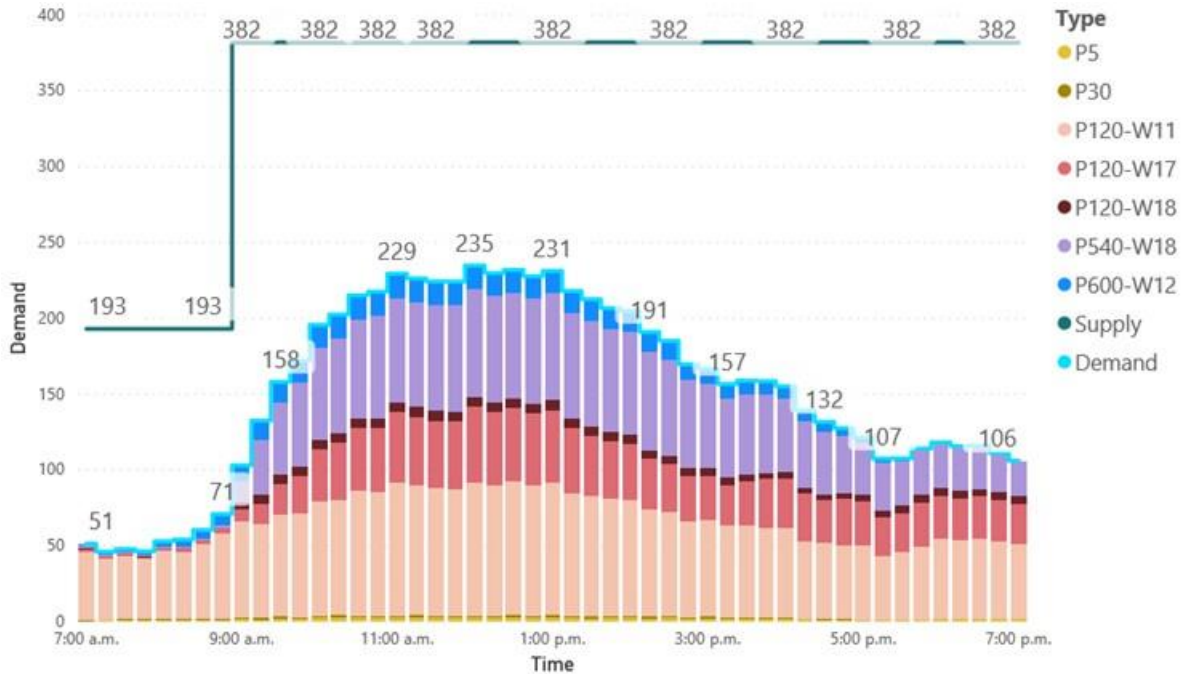


Figure 2: Demand for parking spaces on Thorndon Quay

Appendix A provides details of the demand profiles throughout the day for each of the areas shown in Figure 2. The detail provided in the Appendix indicates that the long-stay parking spaces (the 9-11 hour spaces) are being used by people staying for shorter durations. For instance, approximately one-third of the peak demand for the long-stay parking spaces is used by people staying less than 4 hours. However it is not clear whether people are shifting spaces to avoid non-compliance or whether they are leaving the area altogether. Some of the other commuter (long-stay) demands are occupying other time restricted spaces along the corridor.

Table 1: Maximum demand for car parking on Thorndon Quay by length of stay

Duration of Stay	Spaces available for time restriction	Maximum spaces occupied			
		Weekdays		Weekends	
		By duration	Cumulative*	By duration	Cumulative*
Very short stay (<= 30 mins)	9	30		36	
Short stay (30 mins - 2 hours)	263	81	111 (41%)	89	120 (44%)
Medium stay (2 - 4 hour stay)	110	44	155 (41%)	33	151 (40%)
Long stay (> 4 hour stay)		83	235* (62%)	29	173* (44%)
Maximum spaces	382		235*		173*

4.3 Converting angled parking to parallel parking

Of the 382 spaces on Thorndon Quay, 278 are angled spaces. Normally, angled parking maximises the capacity for on-street carparking. However, in this case, it is at the expense of providing infrastructure to support safer cycling along the corridor.

A high-level exercise was undertaken to assess the potential loss of carparking spaces if the angled parking spaces on Thorndon Quay were converted to parallel car parking spaces. The existing angled spaces are approximately 2.5 m wide (along the kerblines), and it was assumed that parallel parking spaces would be 6 m in length (occupying 6 m of kerblines), compared to many parallel spaces along Thorndon Quay marked as low as 5 m.

Furthermore, this assessment did not consider potential losses associated with the provision of longer bus stops or providing adequate sight lines for new or existing intersections and/or crossings for pedestrians and cyclists.

If all angled parks were to be converted to parallel parking spaces, there would be approximately 130 car parking spaces, resulting in a reduction of 149 on Thorndon Quay (a 39% reduction in parking spaces). This was based on providing parallel parking bays 6 m in length to replace the existing angled parking spaces. Table 2 outlines the effects of this on each of the parking zones.

The assessment by individual area is provided in Appendix B.

Table 2: Capacity of parks on Thorndon Quay as a result of converting angled parks into parallel parks

Duration of Stay	Existing spaces (angled and parallel)	Spaces if all angled spaces are converted to parallel spaces
Short stay (<= 30 mins)	9	6
Short stay (30 mins - 2 hours)	263	173
Medium stay (2 - 4 hour stay)	110	54
Long stay (> 4 hour stay)		
Total	382	233

4.4 Residual parking capacity versus observed demands

Table 3 outlines the observed peak parking demands versus the capacity that could remain if the angled parking spaces were converted to parallel parking spaces. On the weekends, the residual parking space capacity is sufficient to accommodate the current demands and allow for some growth in demand over time. On weekdays, there is likely to be sufficient residual capacity to meet the short-stay peak demand for spaces, and accommodate some, but not all longer stay demands.

As indicated prior, this assessment does not consider additional reductions in carparking spaces associated with providing safer intersections and crossings. Notwithstanding that, it is anticipated that the number of spaces available will be able to accommodate the peak demands for short and medium stays.

Table 3: Peak Demand versus capacity with parallel parking spaces converted to angled parking spaces

Duration of Stay	Spaces remaining if angled parking was converted to parallel parking	Weekdays	Weekends
Very short stay (<= 30 mins)	6	30	36
Short stay (30 mins - 2 hours)	174 (180)	81 (111) (62%)	89 (120) (67%)
Medium stay (2 - 4 hour stay)	53 (233)	44 (155) (67%)	33 (151) (65%)
Long stay (> 4 hour stay)		83 (235*) (100%)	29 (173*) (74%)

5 Hutt Road

Figure 3 shows the types of parking restrictions on Hutt Road. There are 127 parks on Hutt Road. Although, only one section (P660 – W15) has parking sensors with 47 parks. The parks with sensors will be the basis for the analysis. Near Kaiwharawhara Road (on the right of Figure 3) the spaces with no time restrictions are subject to clearway in the morning peak period, and the P10 spaces are indented from the carriageway and are available throughout the day.



Figure 3: Hutt Road parking restrictions

Figure 4 and Figure 5 show the average distribution of parking demand on Hutt Road for a weekday and a weekend day, respectively. The supply line indicates the maximum number of parks available at any time. The reduced number of parks available is due to the clearway from between 7AM and 9AM on weekdays.

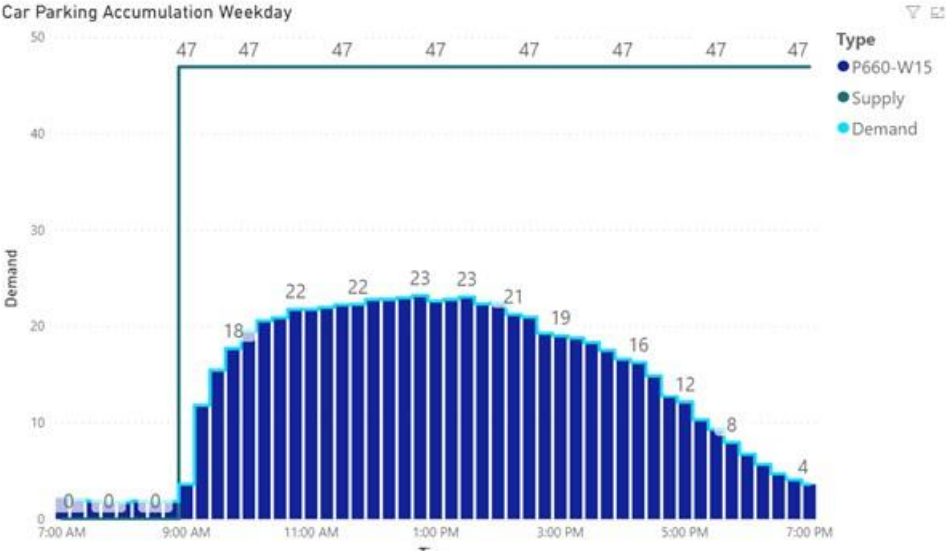


Figure 4: Average weekday demand distribution for car parking along Hutt Road

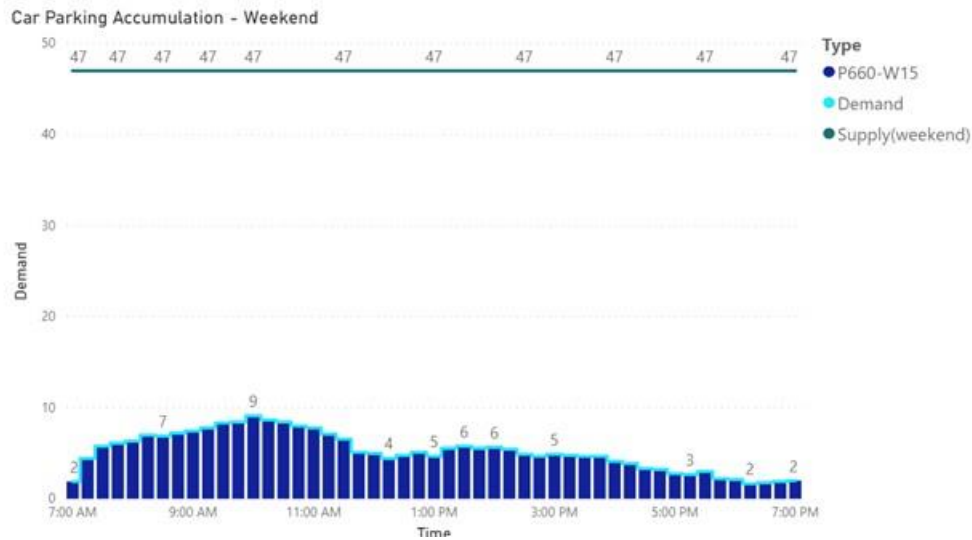


Figure 5: Average weekend day demand distribution for car parking along Hutt Road

The conclusions that can be drawn are as follows:

- The bulk of the demand for parking on weekdays begins around 9:30AM and starts to taper off from 2PM.
- The spaces on Hutt Road are typically underutilised. The most vehicles that do use the car parks occupy it between 9am and 11am. Overall, the weekend day has a relatively flat distribution across the day with slightly less demand moving into the afternoon.
- The largest demand for parks was for vehicles staying longer than 4 hours. Vehicles staying longer than 4 hours occupied 43% and 13% of parks on weekdays and weekend days respectively. This indicates that this parking is likely used for commuter parking during the working week.

6 Comparison with previous studies

The “Northern Connection – Thorndon” Draft Issues Paper (Opus, 2017) canvassed the parking demand in some detail along the corridor and on the side streets (Davis Street, Sar Street and Mulgrave Street). On the side streets the report noted very high utilisation of the available parking spaces, indicating that it would be unlikely to consider these streets as options for mitigating parking losses on Thorndon Quay.

On Thorndon Quay, the report noted similar demands for parking spaces throughout the day, with a peak demand of 248 vehicles (p56) of which 32 were “medium” stay (2 – 4 hours) and 103 long stay. This compares with 235, 44 and 83, respectively. Noting the different times of the surveys, it indicates that the demand for parking spaces along the corridor has remained constant over the last 2-3 years.

Of note in the report is the utilisation of parking spaces, which indicates that the section between Davis Street and Moore Street was the highest utilised area for on-street parking (>80% utilised) from 10AM – 3PM. The carpark sensor data from November 2019 indicates that the long-stay parking in this area has a high utilisation (>80%) but does not provide the granularity to assess the utilisation of time-restricted parking in the northbound direction.

On Hutt Road (Aotea to Sar Street), the report indicates that the peak demand is approximately 50 vehicles with a utilisation of between 40 – 60%. This includes the parking that is available on the northern side of Hutt Road. The carpark sensor data from November 2019 only considers parking in the southbound direction and indicates that this is approximately half full (23 utilised out of 47 spaces). This indicates that there may be the opportunity that Hutt Road could offset losses in parking along Thorndon Quay. The information indicates that Hutt Road may have enough spare on-street car-parking capacity to accommodate an additional 20 – 30 vehicles.

7 Potential Issues and Mitigation

7.1 Options

The options that are being considered for further development are outlined in Table 4.

Table 4: Potential Options

Location	Option	Potential Impact on parking
Thorndon Quay and Hutt Road between Tinakori Road and Aotea Quay	Southbound bus lane with bi-directional cycle path on one side OR Bus lanes in both directions with cycle paths on both sides.	Both options (or combinations of bus lanes and cycle paths) have no additional restrictions preventing direct property access.
	(a) Peak time only	<ul style="list-style-type: none"> • Potential impact on parking capacity – converting angled to parallel parking (refer to discussion in Section 7.2) • Impact on P5 spaces on Thorndon Quay (refer to discussion in Section 7.3) • Impact on parking capacity – displacement of northbound parking during peak time operation (refer to discussion in Section 7.4)
	(b) All day	<ul style="list-style-type: none"> • Parking capacity – displacement of all on-street parking (refer to discussion in Section 7.2)
Hutt Road between School Road and Ngauranga	Priority lane (or Special Vehicle lane) in southbound or both directions with:	
	(a) No change to access restrictions	<ul style="list-style-type: none"> • Parking capacity – displacement of all on-street parking in the southbound direction if priority lanes operate all-day. There is no on-street parking northbound (refer to discussion in Section 7.5).
	(b) A central raised median	<ul style="list-style-type: none"> • No additional parking impacts resulting from raised median
	(c) A southbound service lane between Onslow Road and Kaiwharawhara Road	<ul style="list-style-type: none"> • No impact to “no limit” parking southbound • Impact on P10 parking (refer to discussion in Section 7.5) • Deliveries and parking where priority lane is peak time only (refer to discussion in Section 7.5)
	Dynamic lane management (Tidal Flow)	<ul style="list-style-type: none"> • No impact to parking

7.2 Parking Capacity – Converting Angled Parking to Parallel Parking

As discussed earlier in this document, the conversion of existing angled parking spaces to parallel parking spaces is expected to result in the loss of approximately 150 spaces along Thorndon Quay, retaining approximately 230 spaces. Based on the priorities in the adopted Parking Management Strategy (outlined in Section 2.0) the remaining spaces are expected to accommodate demand for parking on Thorndon Quay which is approximately 155 spaces, but is unlikely to accommodate all demand for long stay parking (currently 83 spaces).

As noted in Section 6.0, the work done to inform the “Northern Connection – Thorndon” Draft Issues Paper (Opus, 2017) indicated that the side streets (Davis Street, Sar Street and Mulgrave Street) is unlikely to accommodate demand from the displaced parking spaces on Thorndon Quay.

Along the corridor there are three private car parks as well as the residual parking capacity on Hutt Road to potentially accommodate lost spaces along Thorndon Quay (as shown in Figure 6). The carparking charges vary, and at the time of writing this document, it was not determined whether these locations had spare capacity to accommodate displaced on-street parking.

If the preferred option in the longer term was to operate the bus lanes all-day (for example between 7am and 7pm), it is not yet understood whether the off-street carparking locations shown in Figure 6 would be able to accommodate the displaced parking demands with the current land use. At the next stage of project development, a survey of the off-street carparking spaces is recommended to understand their capability to accommodate displaced demands for on-street parking spaces.

If this area was to be redeveloped with more mixed-use development, it is possible that a condition of the consent could include commitments that no on-street parking will be provided to assist the progressive implementation of all-day bus lanes.

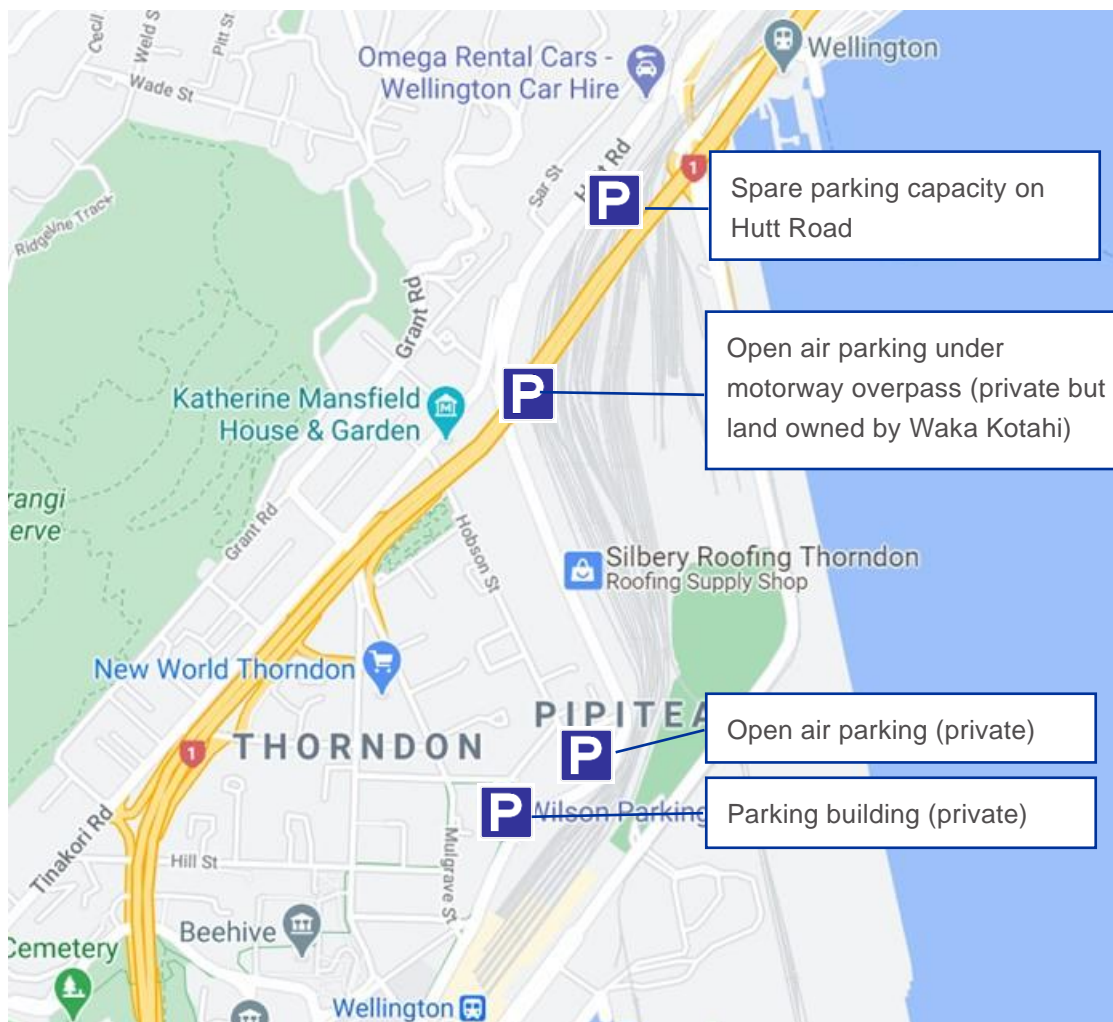


Figure 6: Alternative parking locations

7.3 P5 parking on Thorndon Quay

The current options being considered for Thorndon Quay are seeking to provide bus lane(s) at the expense of parking spaces that would be available during the time of operation. This would effectively remove the availability of the existing P5 parking along Thorndon Quay during the times when the bus lane(s) are operating.

There may be an opportunity to retain the all-day availability of the P5 parking by indenting the P5 parking bays as indicated in Figure 7 and Figure 8. The consequence of indenting the P5 parking bays is the lost opportunity for a buffer between the road and the cycleway, and the lost opportunity for improved amenities where those spaces are provided. Given that there may be safety issues associated with the loss of the buffer, it may only be applicable for the 6 spaces that are currently available, but not as a wholesale solution for the corridor. Of note, the indented parking spaces could not be provided if the preferred option is to provide a cycle path on both sides and bus lanes in both directions without narrowing the footpaths.

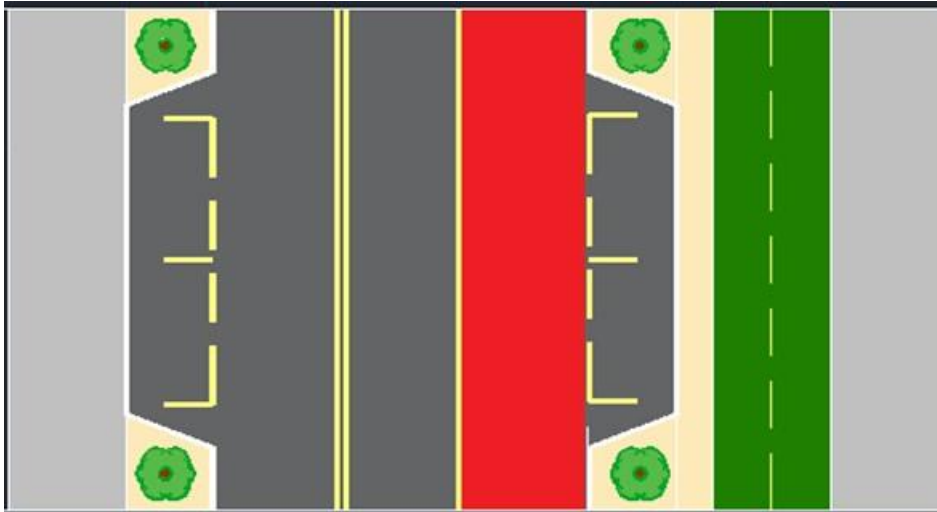


Figure 7: Potential retention of P5 spaces on Thorndon Quay with southbound only bus lane

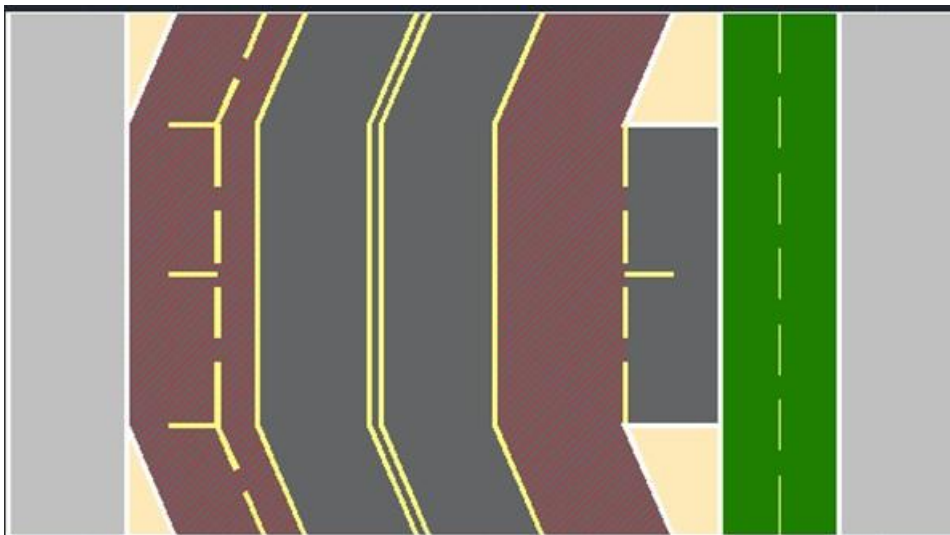


Figure 8: Potential retention of P5 spaces on Thorndon Quay with bus lanes in both directions (compatible only with a bi-directional cycle path on one side)

7.4 Northbound Bus Lane Thorndon Quay

The option to provide a northbound bus lane either in peak times or all day is likely to impact on people who currently park on-street. Figure 9 outlines the demand for spaces throughout the weekday from the carpark sensor data.

For the case where the bus lane operates during the evening peak period, there is some demand for parking on the western (northbound) kerbside, possibly associated with the business operating times. Under the evening peak time operating scenario, it is possible that parking in the southbound direction will be available, as the southbound bus lane may not be operating.

The implications of the all-day bus lane scenario are outlined in Section 7.2.



Figure 9: Demand for parking spaces on northbound side of Thorndon Quay

7.5 Priority Lane Operating Times on Hutt Road

The potential operating times of a priority lane on Hutt Road may affect the availability of on-street parking currently provided in the southbound direction. Alongside the businesses, there are a number of angled P10 parking spaces (indented) which were included in the design of the cycleway to offset the loss of parking in front of those businesses. However, there are sections of Hutt Road (between Westminster and the early childhood centre, and near Placemakers) where on-street in-lane parking is permitted outside the clearway times.

The occupancy of these spaces has not been investigated, and it is recommended that in the next stages of the project, a parking survey is completed to understand the occupancy of the spaces.

If the preferred option for the priority lane on Hutt Road is to operate it all day (for example 7am – 7pm), the potential options to mitigate this loss are to do-nothing, work with the businesses to reconfigure their sites, or to potentially indent the parking bays, as was done for the P10 parking (as outlined in Figure 10). The preferred solution will be developed through subsequent stages of the project.



Figure 10: Indented P10 parking on Hutt Road (Source: Google Maps)

7.6 Service Lane on Hutt Road (Onslow to Rangiora)

To mitigate the potential risk of crashes associated with the implementation of a priority lane on Hutt Road to address the existing crash risk of turning vehicles colliding with cyclists, a service lane is being considered between Onslow Road and Rangiora Avenue. The potential cross section is shown in Figure 11.

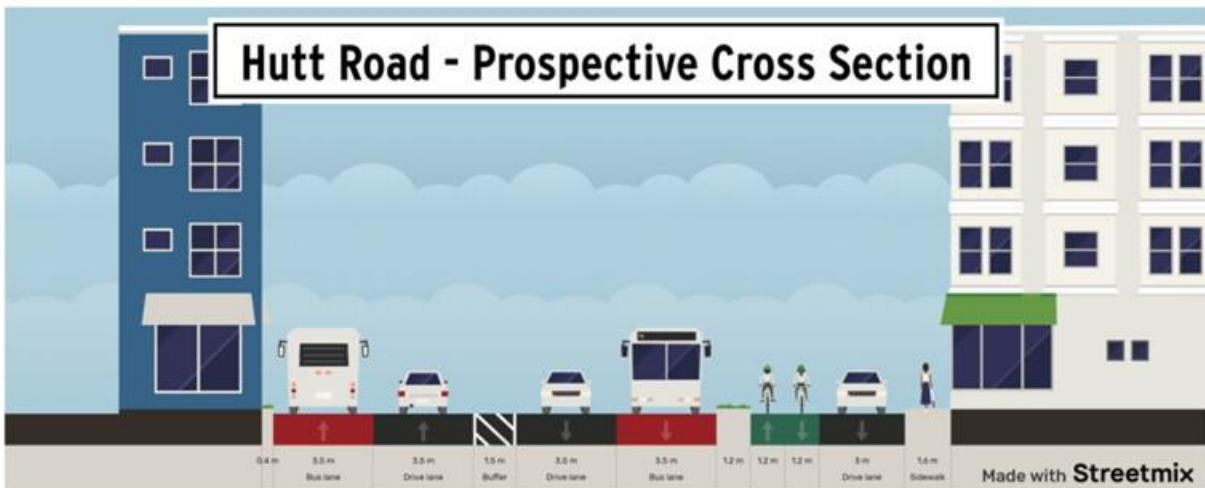


Figure 11: Potential cross section for a service lane on Hutt Road

The implications on parking for the service lane concept are that:

- 1)** There is unlikely to be any space to provide indented parking along the service lane, hence no parking would be available at any time - the P10 parking that is currently available would likely be removed.
- 2)** It is likely that deliveries and parking (where allowed outside of the priority lane operating times) would be limited to the kerbside lane on the main road, which is similar to the current situation; however this may be a confusing situation, as direct property access would be via the service road but parking and deliveries would be on the main road.

8 Conclusion and Next Steps

With the options being considered for Thorndon Quay and Hutt Road, there may be a need to manage or reduce the parking capacity that is currently available along Thorndon Quay and Hutt Road to provide bus priority and/or better cycling infrastructure.

The proposals to convert angled parking to parallel parking spaces on Thorndon Quay are expected to leave a sufficient number of spaces to accommodate short and medium stay demands during the week and all demands on the weekends in the medium term. The information presented in this paper indicates that the demand for parking spaces has remained relatively constant over the last few years, which is indicative of a stable land use. The conversion of angled parks to parallel parks can also, see the easy reallocation of parking restrictions to either accommodate more P5 parking spaces or loading zones for deliveries to businesses.

If the land along Thorndon Quay is redeveloped, this may lead to increase demands for parking, which could potentially be accommodated off-site (although with the new direction on the provision of parking spaces, it would not be a mandatory requirement), or existing spaces could be removed to enable the progression towards all-day bus lanes.

On Hutt Road between Onslow Road and Kaiwharawhara Road, the provision of peak time priority lanes is unlikely to impact the parking supply as it is already subject to clearway provisions. However, if the priority lane operates all-day, there may be an opportunity to provide indented parking in a similar fashion to the existing P10 parking spaces. However, this option is unlikely to be feasible if a service lane is preferred on Hutt Road.

There are options available to accommodate displaced parking from Thorndon Quay at existing off-street facilities, and using the residual parking space capacity on Hutt Road between Aotea Quay and Tinakori Road (if proposed bus lanes are peak time only).

At the next stage of the project, when travel patterns return to near normal it is recommended to complete parking capacity and occupancy surveys at the existing off-street facilities and in locations where data has not been available (Hutt Road between Tinakori Road and Aotea Quay northbound, and Hutt Road between Onslow Road and Kaiwharawhara Road southbound).

Appendix A: Thorndon Quay: Parking Demand and Capacity

Table 5: Weekday demands by duration of stay, compared with the existing capacity in each zone

Table 6: Weekend demands by duration of stay, compared with the existing capacity in each zone

Table 7: Weekend demands by duration of stay, compared with the reduced capacity in each zone

Table 8: Weekend demands by duration of stay, compared with the reduced capacity in each zone

Table 5: Average weekday demand by stay durations for each restriction zone

Location / Restriction	Capacity	< 2 hours	< 4 hours	Longer than 4hrs	Total peak demand	Total peak demand as % of capacity
P5	6	3	3	1	3	50%
P30	3	1	1	1	2	67%
P120 – W11	164	61	78	11	88	54%
P120 - W17	92	36	48	3	50	54%
P120 - W18	7	3	4	6	6	86%
Total for <= P120	272	100	129	20	148	54%
P540 - W18	90	12	24	52	71	79%
P600 - W12	20	2	4	12	16	80%
Total for > P120	110	13	28	63	87	79%

Table 6: Average weekend day demand by stay durations for each restriction zone

Location / Restriction	Capacity	< 2 hours	< 4 hours	Longer than 4hrs	Total peak demand	Total peak demand as % of capacity
P5	6	3	3	1	3	50%
P30	3	1	1	0	1	33%
P120 – W11	164	54	65	8	71	43%
P120 - W17	92	38	48	3	50	54%
P120 - W18	7	5	1	2	6	86%
Total for <= P120	272	97	118	12	127	47%
P540 - W18	90	21	10	16	39	43%
P600 - W12	20	3	1	1	4	20%
Total for > P120	110	23	34	15	43	39%

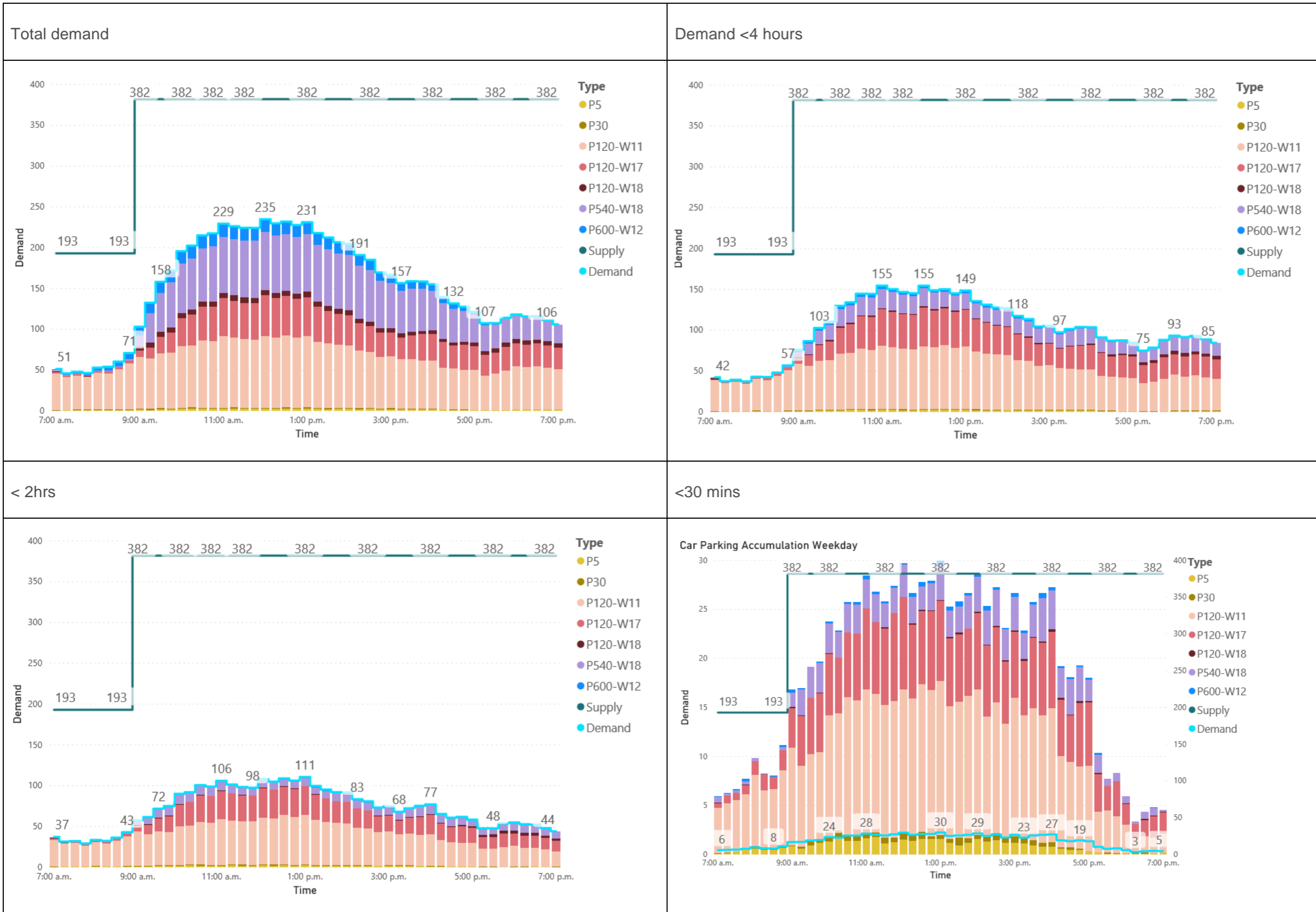
Table 7: Weekday occupancy and demand with conversion to parallel parks on Thorndon Quay

Location / Restriction	Capacity	< 2 hours	< 4 hours	Longer than 4hrs	Total peak demand	Total peak demand as % of capacity
P5	3	3	3	1	3	100%
P30	3	1	1	1	2	67%
P120 – W11	99	61	78	11	88	89%
P120 - W17	71	36	48	3	50	70%
P120 - W18	3	3	4	6	6	200%
Total for <= P120	179	100	129	20	148	83%
P540 - W18	43	12	24	52	71	165%
P600 - W12	11	2	4	12	16	145%
Total for > P120	54	13	28	63	87	161%
Total across all parks	233	111	155	83	235	101%

Table 8: Weekend day occupancy and demand with conversion to parallel parks on Thorndon Quay

Location / Restriction	Capacity	< 2 hours	< 4 hours	Longer than 4hrs	Total peak demand	Total peak demand as % of capacity
P5	3	3	3	1	3	100%
P30	3	1	1	0	1	33%
P120 – W11	99	54	65	8	71	72%
P120 - W17	71	38	48	3	50	70%
P120 - W18	3	5	1	2	6	200%
Total for <= P120	179	97	118	12	127	71%
P540 - W18	43	21	10	16	39	91%
P600 - W12	11	3	1	1	4	36%
Total for > P120	54	23	34	15	43	80%
Total across all parks	233	119	149	26	167	72%

Demand for Parking Spaces



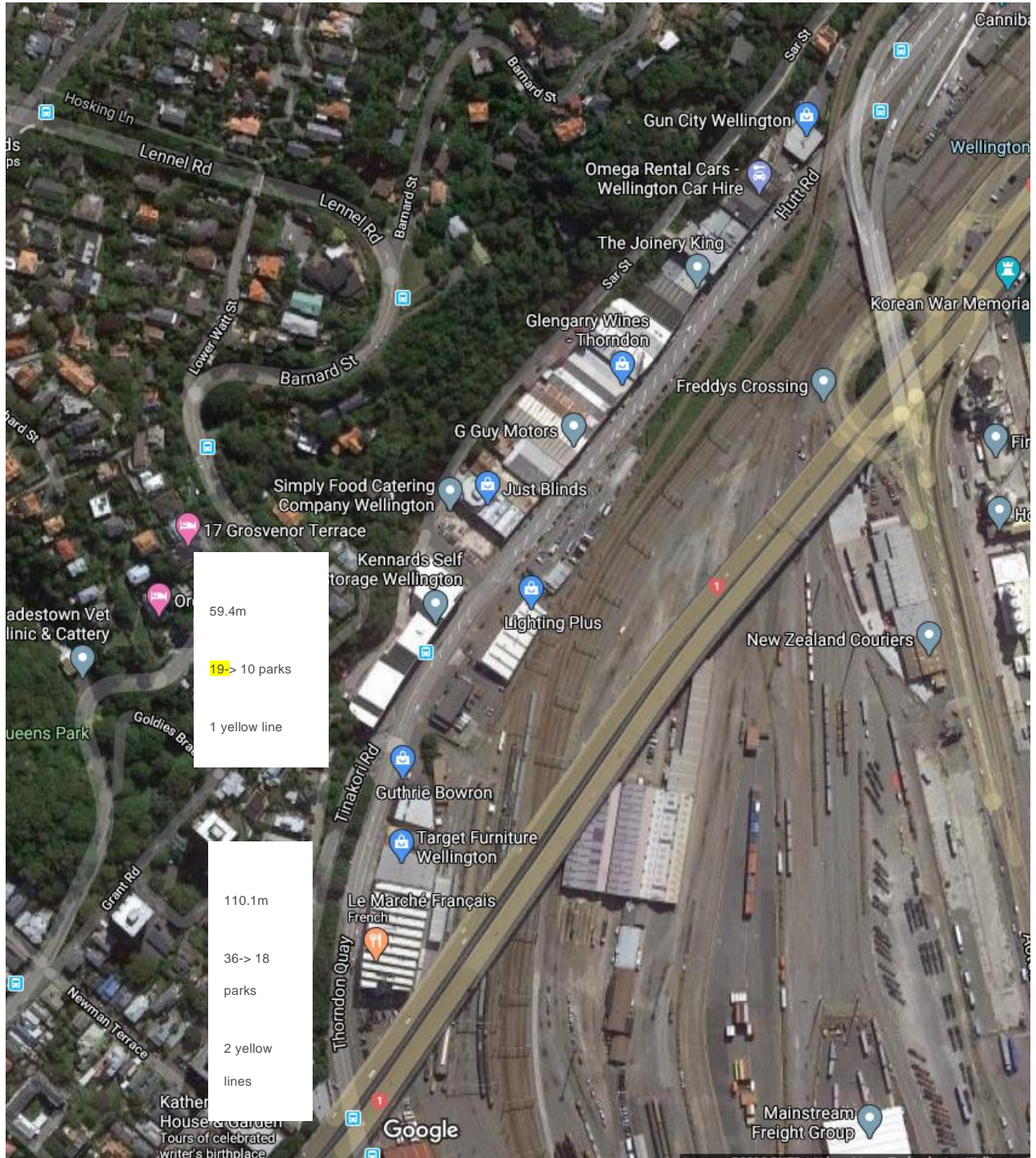
Appendix B: Conversion of angled spaces to parallel spaces

Table 9: Conversion of angled parking to parallel parking by zone

Location	Existing Capacity	Existing Parallel parking spaces	Existing Angled parking spaces	Number of parking spaces retained if converted to parallel parking	Parking capacity with parallel parking only
P5	6	1	5	2	3
P30	3	3	-	-	3
P120 - W11	164	42	122	57	99
P120 - W17	92	57	35	14	71
P120 - W18	7	0	7	3	3
P540 – W18	90	0	90	43	43
P600 – W12	20	1	19	10	11
Total	382	104	278	129	233

Conversion to angled parking by location

Tinakori Road – Motorway Overpass



Motorway Overpass – Davis Street



Davis Street – Moore Street



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