



Downtown Carpark Site Development

Operational Integrated
Transport Assessment

November 2025

flow

TRANSPORTATION SPECIALISTS



TRANSPORTATION SPECIALISTS

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STATEMENT OF EXPERIENCE

My full name is Harry Shepherd. I am a Principal Transportation Engineer at Flow Transportation Specialists Limited. I have held this position since May 2023.

I hold a Bachelor of Engineering (Honours) degree specialising in Civil and Environmental Engineering from the University of Auckland. Before joining Flow, I was employed by Stantec New Zealand (previously TDG) between 2015 to 2019, where I last held the position of Project Transportation Engineer. I am a member of the Engineering New Zealand Transportation Group.

I have 10 years of experience as a transportation planner and engineer in public and private sector land development projects, which includes experience with plan changes, integrated transport assessments and development consenting.

I have been involved in the assessment of several plan changes and resource consent applications. I provided similar assistance for these planning processes, including review, assessment of transport effects and guidance on the relevant transport planning provisions and reporting associated with these projects. This work has included

- ◆ Expert witness in Council hearings in Auckland and Levin for retirement village developments¹.
- ◆ Acting for Auckland Council as an expert witness reviewing Private Plan Changes 107 and 109 and other ongoing plan changes in Whenuapai.
- ◆ Resource consent applications for the private sector for various developments² in Auckland.
- ◆ Motorway upgrade projects for NZTA Waka Kotahi³.

I confirm that, in my capacity as author of parts of this Fast Track Application, I have read and abided by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

¹ Saint Vincent - Metlifecare Retirement Village and MiLife Levin

² Multiple residential developments including in Riverhead (Coatesville-Riverhead Highway) and Milldale (64 Sidwell Road); various industrial developments in Auckland including Asmuss Steel Warehouse in Drury

³ State Highway 1 Papakura to Bombay project

SUMMARY OF OUR TRANSPORT ASSESSMENT

Precinct Properties New Zealand Limited ("**Precinct**") commissioned Flow Transportation Specialists Ltd to identify and assess the transport planning and traffic engineering matters relating to the proposed Downtown Carpark Site Development ("**Development**"), located at 2 Lower Hobson Street in the Auckland City Centre ("**Site**").

This report addresses the operational effects of the Development. A separate report assesses transport-related demolition and construction effects.

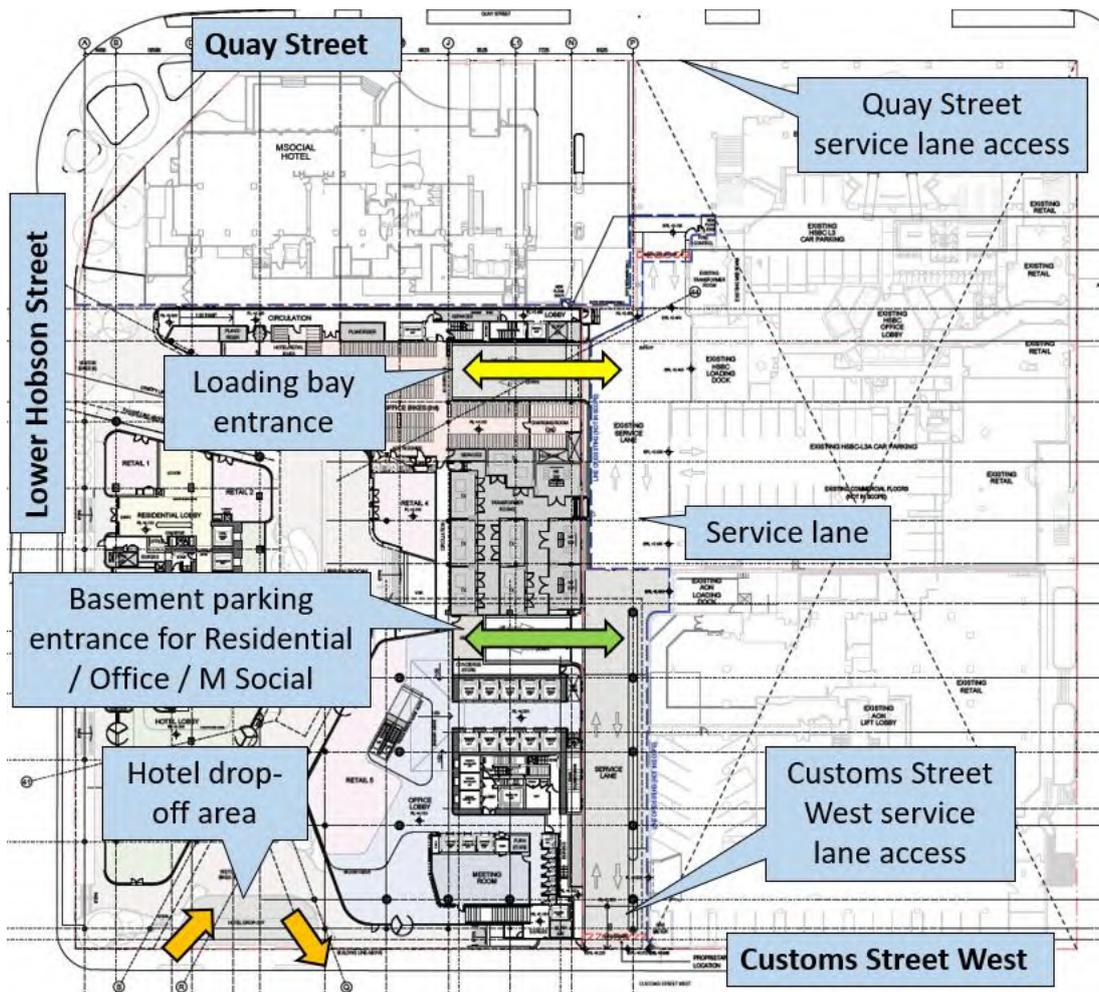
The Proposed Development

The Development includes the demolition of the existing Downtown Carpark building (together with the Lower Hobson Street pedestrian bridge and Customs Street West vehicle ramp located within part of the road reserve) and development of the Site to provide for a mixed-use precinct providing for commercial, residential, hotel, retail, food and beverage and civic uses.

The Development involves 3 podium buildings, 2 towers and 4 levels of shared basement parking (plus a plant level), including new public spaces and a new laneway network to provide connectivity within the city centre. In addition, the development involves modifications to the podiums of existing adjacent buildings (HSBC and Aon) to facilitate a new laneway network.

Figure S1 below shows a plan of Level 00 of the Development, showing vehicle access points.

Figure S1: Level 00 plan of Proposed Development



The Development includes the following key elements

- ◆ 160 apartment units, consisting of 23,200 m² GFA total
- ◆ 200 hotel rooms, consisting of 14,100 m² GFA total
- ◆ 87,000 m² GFA of commercial offices
- ◆ 1,179 m² GFA of retail/restaurant activities, assumed to be primarily food and beverage
- ◆ Vehicle access will be provided as follows
 - Vehicle access will be provided through the existing service lane, which in turn has vehicle access onto Quay Street and Customs Street West. The service lane accessway will be upgraded to accommodate two-way vehicle movement
 - The Quay Street vehicle crossing from the service lane will be retained and modified
 - The design of the Customs Street West vehicle crossing will be retained and modified
 - The Hotel pick-up and drop-off on Customs Street West will provide two vehicle crossings, one inbound and one outbound, with parking spaces for 2 vehicles, including a lane for vehicles to pass through the pick-up and drop-off area if the 2 spaces are occupied
 - Cars and vans can access the service lane via both the Quay Street and Customs Street West crossings. As a result of vertical clearance limitation (resulting from the Development's podium design over part of the service lane) all truck access to the Development is required to be through the Quay Street crossing
 - The existing vehicle crossings serving the Downtown Carpark onto Customs Street West and Fanshawe Street will no longer be required and will be redesigned to provide access to the pick-up and drop-off area outside the hotel.
- ◆ 463 parking spaces, accessed from the service lane, will be provided across 4 levels of basement parking. We note that the architectural plans show 454 spaces. We have assessed the provision of 9 additional parking spaces, which could be provided in place of water tanks. This is subject to finalising a wastewater solution with Watercare, which is addressed in the infrastructure assessment
- ◆ The parking spaces will be allocated as follows
 - up to 121 spaces will be allocated to the adjacent M Social site, and are off-site parking spaces
 - 160 spaces for residents
 - 170 spaces for offices and hotel valet parking
 - 1 carwash space for residential use
 - 2 facility management spaces
 - 9 casual spaces for residential and office activities
- ◆ Of these:
 - 21 tandem/ stacked parking spaces will be provided, which will be allocated to the same residential unit or office tenancy

- 21 accessible parking spaces will be provided
- ◆ The main parking basement area will be accessed from the service lane
- ◆ The facility management parking spaces will be accessed from the loading entrance off the service lane
- ◆ 5 loading spaces, designed to accommodate 8.3 m trucks, are provided in a separate loading area, accessed from the service lane. The Development provides 594 secure bicycle parking spaces and 94 visitor bicycle parking stands. These will be supported by 38 showers and 388 lockers to provide end-of-trip facilities
- ◆ A network of pedestrian connections within the Site connecting Lower Hobson Street and Customs Street West.

Alignment with central and local government land use and transport planning policy

The Development aligns well with the objectives set out in central and local government land use and transport planning policy documents. It is a high-density residential, hotel and commercial development located with excellent access to public transport, well connected for cycling and walking and with a large number of services and amenities within short walking distance.

The Site location, in combination with reducing the existing on-site parking supply by around 75 % compared to the existing Downtown Carpark, discourages the use of private vehicles as a mode of travel and contributes to Auckland Council's target reductions in transport-based greenhouse gas emissions.

Auckland Unitary Plan transport matters

Under the Unitary Plan transport-related rules, the Development has a Discretionary Activity status because the Development's basement will be used for up to 121 off-site parking spaces⁴. This relates to an existing agreement whereby the M Social hotel, located directly to the north of the Site, has the use of up to 121 off-site parking spaces in the existing Downtown Carpark, and so provision needs to be made in the Development. This arrangement will not result in any adverse transport effects, as it is an existing situation. We have considered the traffic generated by this off-site parking in our traffic assessment.

The provision and design of most transport facilities, including accessways, car and bicycle parking, loading facilities, and pedestrian facilities will comply with the standards of the Unitary Plan. We note the following design-related consent matters under the AUP that will apply.

- ◆ For service vehicles, this relates to the section of the service lane between the Quay Street access and the access to the basement loading area. (3.8 m vertical clearance is required, and 3.6 m clearance is provided). This is an existing situation, and we have observed that this small non-compliance of 200 mm still allows for trucks to use the service lane to access the existing loading docks on the service lane. Notwithstanding this, and to manage the effects of the Development's vertical clearance restrictions, we recommend that a Servicing and Loading Management Plan be

⁴ However, the Development overall requires Non-Complying Activity consent.

prepared to ensure that all servicing vehicles that access the Development comply with the necessary vertical clearance restrictions

- ◆ For accessible parking, 2.5 m of vertical clearance is not provided for all of the parking spaces or access areas. We have assessed accessible parking design standards, and consider the available vertical clearance of 2.3-2.4 m is appropriate
- ◆ Several small car parking spaces are proposed, which do not meet the standard parking dimensions. These spaces can be allocated to regular users, such as staff members or residents who will be aware of the smaller dimensions
- ◆ The Quay Street service lane and Customs Street West hotel pick-up and drop-off vehicle crossings do not meet several access design standards. We note that some of these infringements are existing, but the proposed designs will be improvements compared to the existing vehicle crossing layouts.

The Unitary Plan specifies that tandem or stacked spaces are permitted for residential activities. While the final parking allocation has not been determined, the tandem spaces could potentially be allocated to the office activities. We consider this can be managed by allocating the tandem spaces to the same office tenancies. The users of these spaces will be regular users, and the use of the tandem spaces can be coordinated and managed as required.

Under Plan Change 79 of the Unitary Plan, additional accessible parking spaces are required for all activities. The standards require a total of 55 accessible parking spaces, whereas 21 are proposed. The proposed provision will be sufficient to meet the residential accessible parking requirements, but have a shortfall for the office, retail and hotel activities. We consider that the proposed provision is acceptable as the private car mode share is expected to be low, given that excellent and accessible public transport options are available in close proximity to the Site.

Under the Unitary Plan, Quay Street and Customs Street West have vehicle access restrictions. We have accordingly completed an assessment of the Development's use of these (existing) accesses, having regard to the relevant restricted discretionary activity criteria in the Unitary Plan. We conclude that the location and design of these crossings are such that there is adequate sight distance for these crossings to function safely and efficiently under the predicted traffic demands.

Traffic effects assessment

With regard to access, we note that the number and design of the Site's vehicle accesses will have positive transport effects compared to the existing situation, as the access and vehicle crossing associated with the existing Downtown Carpark onto Fanshawe Street will be removed, and the Customs Street West accesses to the Downtown Carpark will be redesigned to provide access to a small pick-up and drop-off area outside the hotel.

The redesign of the existing crossings on Customs Street West to and from the Downtown Carpark will provide a safer environment for pedestrians, noting that these are the only locations within the block where pedestrian crashes have been recorded to have occurred over the past 5 years. The proposed hotel pick-up and drop-off vehicle crossings on Customs Street West will generate much lower traffic volumes compared to the Downtown Carpark volumes and can be managed safely.

The network traffic modelling results show the following for all scenarios and peak periods.

- ◆ Drivers will generally reroute away from the streets serving the existing Downtown Carpark (Sturdee Street, the Lower Hobson Street slip lane adjacent to the Site), towards routes to the Development's access points (Quay Street, Customs Street West and the Lower Hobson Street Flyover)
- ◆ The traffic volumes on Quay Street will remain similar, with no significant changes shown. While there will be an increase in trips exiting via the service lane vehicle crossing, there will also be a reduction in vehicles using Quay Street as a route to access the Downtown Carpark
- ◆ The change in vehicle volumes is mostly concentrated in the areas near the Development and Downtown Carpark access points. No significant changes in vehicle volumes are predicted on the wider network
- ◆ No increases in vehicle delays of more than 10 seconds are predicted in any scenario, both in the local area and the wider network, other than an increase in delays at the service lane in the evening peak period. All scenarios show a decrease in delays at the Downtown Carpark exit ramp onto Fanshawe Street, as this signalised intersection will no longer be required
- ◆ The Development will have a negligible impact on overall vehicle travel times across the network, with average journey times for all vehicles increasing between 0 to 2 seconds compared to the future baseline
- ◆ No noticeable change to bus route travel times is predicted. There will be some small increases and decreases of -17 to +10 seconds for some bus routes. High volume bus routes in the area (including the NX and WX routes) or bus routes utilising Quay Street (NX1, 95 and 97 routes) are predicted to have no notable increases in travel times.

Overall, we consider that the results of the SATURN network modelling of the City Centre have shown that the existing road network can efficiently accommodate the traffic generated by the Development.

Our traffic effects assessment of the site access points onto Customs Street West and Quay Street and of adjacent intersections concludes the following when the Development is operational.

- ◆ While traffic volumes using the Quay Street service lane access are expected to increase, the differences in delays and queues between the Future Baseline and With Development scenarios are minor
- ◆ There are no operational issues predicted at the Customs Street West service lane access, which will function as a left-in/left-out arrangement, with no significant outbound volumes. Similarly, there are no predicted issues associated with the hotel pick-up and drop-off access, which also functions as a left-in/left-out arrangement, with significantly lower traffic in comparison to the Downtown Carpark access
- ◆ While turning volumes at the service lane are expected to increase, this will be partially offset by a reduction in traffic volumes associated with the redistribution (to other car parks in the vicinity) of existing Downtown Carpark trips. Although the development will generate more trips to the Quay Street service lane, the overall change in local network performance is not significant

- ◆ Overall, both service lane access points and the hotel pick-up and drop-off accesses are expected to operate within their theoretical capacity, and the results do not indicate any safety or congestion-related concerns.

In summary, we believe that both access points of the service lane can operate within capacity. The results indicate there will not be any safety concerns as a result of turning traffic and congestion.

Summary

In summary, we consider that the Development will operate safely and efficiently from a transport perspective, as

- ◆ The Site has good walkable access to rapid and frequent public transport services, high-quality walking and cycling paths, and complementary land uses
- ◆ The proposed use of the vehicle accesses will not result in adverse effects on the surrounding road network nor internal site traffic, including
 - The development and implementation of a Servicing and Loading Management Plan to ensure that all servicing vehicles that access the Development comply with the necessary vertical clearance restrictions
 - The development and implementation of a Hotel Pick-up and Drop-off Management Plan to ensure the effective and safe use of the pick-up and drop-off spaces
- ◆ The vehicle traffic generated by the proposed activities can be readily accommodated by the adjacent road network
- ◆ The consents required in relation to the transport standards of the Unitary Plan do not generate adverse off-site effects, and any on-site effects can all be managed
- ◆ Demolition and construction traffic can be suitably managed, consistent with standard practice.

Overall, we consider the operational transport effects of the Development to be acceptable. The development provides a well-integrated transport arrangement that aligns with relevant planning provisions, meets technical design expectations, and supports a safe and accessible urban environment. There are no traffic engineering or transport planning reasons to preclude consent from being granted, subject to the conditions recommended.

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1 INTRODUCTION TO THIS REPORT

Precinct Properties New Zealand Limited has commissioned Flow Transportation Specialists Ltd to identify and assess the transport planning and traffic engineering matters relating to the proposed Development.

The Development includes the demolition of the existing Downtown Carpark building (together with the Lower Hobson Street pedestrian bridge and Customs Street West vehicle ramp located within part of the road reserve) and development of the Site to provide for a mixed-use precinct providing for commercial, residential, hotel, retail, food and beverage and civic uses.

The Development involves 3 podium buildings, 2 towers and 4 levels of shared basement parking plus a plant level, including new public spaces and a new laneway network to provide connectivity within the city centre. In addition, the Development involves modifications to the podiums of existing adjacent buildings (HSBC and AON) to facilitate the new laneway network.

In particular, the Development contains 160 residential apartment units, 200 hotel rooms, 1,179 m² of retail/restaurant gross floor area (“**GFA**”) activities and 87,000 m² GFA of commercial offices. These activities will be supported by car parking, loading spaces, bicycle parking, and end-of-trip facilities. Primary vehicle access will be provided via the existing service lane, extending between Customs Street West and Quay Street. An on-site hotel pick-up and drop-off area will also be provided, with two vehicle crossings on Customs Street West.

This Transport Assessment forms part of the Assessment of Environmental Effects report supporting the Fast Track Approvals Act (“**FTAA**”) application for the Development and addresses the transport planning and traffic engineering matters associated with the Development, including:

- ◆ a description of the Development, focusing on transport-related matters (refer to Section 2)
- ◆ an assessment of the Development against the relevant transport standards and provisions contained in the Auckland Unitary Plan – Operative in Part (“**Unitary Plan**”) (refer to Section 3)
- ◆ a description of relevant transport strategies and policy with regard to the Development (refer to Section 4)
- ◆ a description of the surrounding transport environment as it relates to the Site to give context to this Transport Assessment (refer to Sections 5 and 6) including:
 - the Site location and surrounding land use activities
 - the existing surrounding road network
 - transport elements of the existing Site, including existing vehicle access provisions and traffic generation
 - an assessment of the historic crash record in the vicinity of the Site
 - the accessibility of the Site by various transport modes
- ◆ an assessment of the transport elements and the resulting effects of the Development, having regard to the relevant Unitary Plan design standards and controls, including:

- an assessment of the access arrangements, focusing on the vehicular and pedestrian access associated with the Development (refer to Section 7)
- a parking and servicing assessment, including an assessment of the design and adequacy of the parking and loading areas to support the Development (refer to Section 8)
- a traffic assessment, including the number of vehicle trips the Development is likely to generate during peak hours and an assessment of the likely effect this traffic may have on the operation of the surrounding road network during weekday peak commuter hours. This assessment includes detailed traffic modelling using SATURN and SIDRA traffic modelling software (refer to Section 9)
- a summary of our recommended mitigation measures that will inform the proposed conditions of consent (refer to Section 10).

2 WHAT ARE THE LAND USE AND TRANSPORT ELEMENTS OF THE DEVELOPMENT?

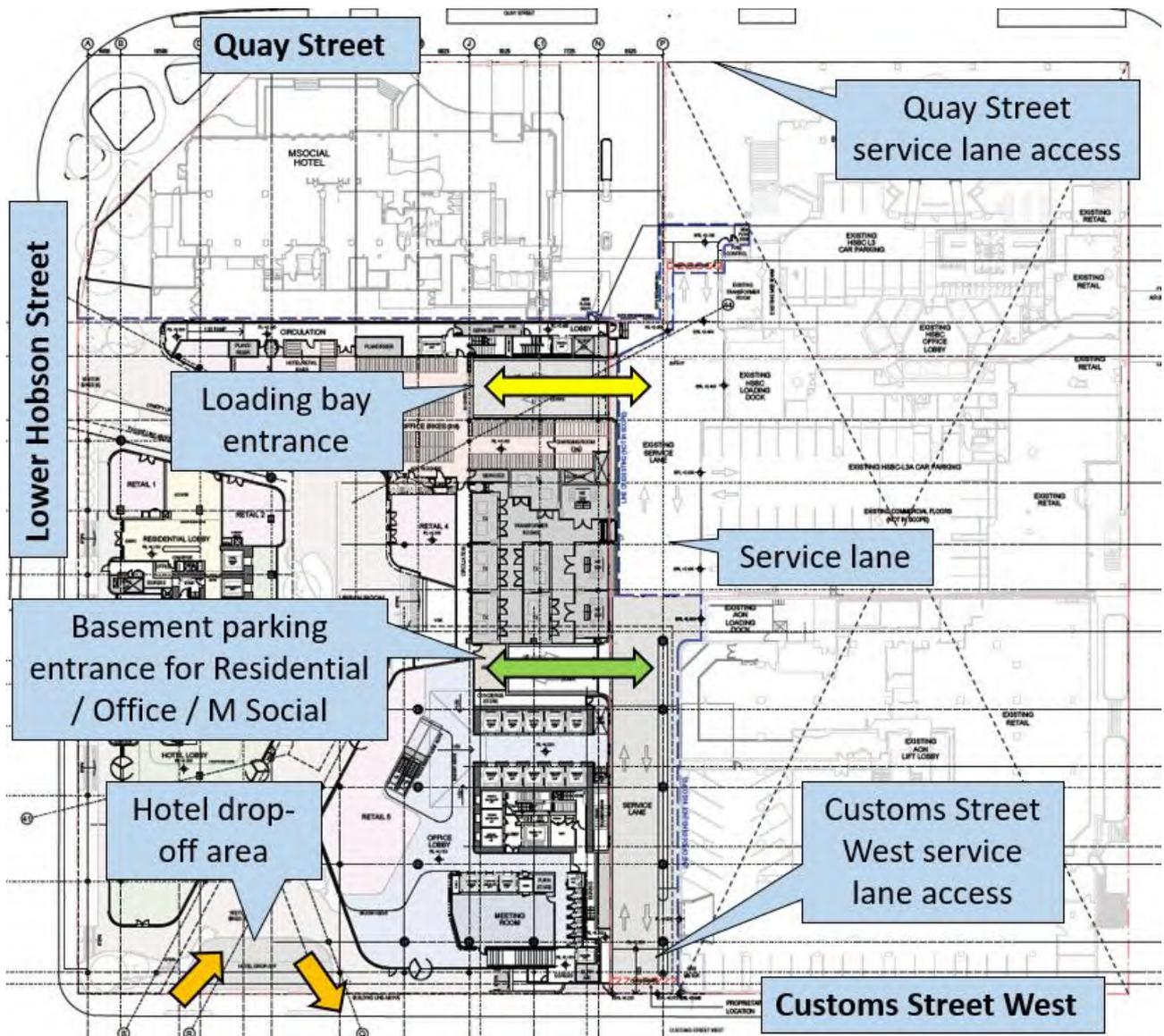
The ground floor site plan of the Development is shown in Figure 1, and a full set of drawings of the Development is attached to the resource consent application.

The Development includes the following key elements

- ◆ 160 apartment units, consisting of 23,200 m² GFA total
- ◆ 200 hotel rooms, consisting of 14,100 m² GFA total
- ◆ 87,000 m² GFA of commercial offices
- ◆ 1,179 m² GFA of retail/ restaurant activities, assumed to be primarily food and beverage
- ◆ Vehicle access will be provided as follows.
 - Vehicle access will be provided through the existing service lane, which in turn has vehicle access onto Quay Street and Customs Street West. The service lane accessway will be upgraded to accommodate two-way vehicle movement
 - The Quay Street vehicle crossing from the service lane will be modified. It will be in the same location as the existing access
 - The design of the Customs Street West vehicle crossing will be modified, with the crossing being in a similar location to the existing crossing
 - The hotel pick-up and drop-off on Customs Street West will provide two vehicle crossings, one inbound and one outbound, with parking spaces for 2 vehicles, including a lane for vehicles to pass through the pick-up and drop-off area if the 2 spaces are occupied
 - Car and van access can occur via both the Quay Street and Customs Street West crossings. As a result of vertical clearance limitation resulting from the Development's podium design over part of the service lane, all truck access to the Development is required to be through the Quay Street crossing
 - The existing vehicle crossings serving the Downtown Carpark onto Customs Street West will be redesigned to provide access to a small pick-up and drop-off area for the hotel, and the Fanshawe Street crossing will no longer be required and will be removed.
- ◆ 463 parking spaces, accessed from the service lane, will be provided across 4 levels of basement parking
 - We note that the architectural plans show 454 spaces. We have assessed the provision of 9 additional parking spaces, which could be provided in place of water tanks. This is subject to finalising a wastewater solution with Watercare, which is addressed in the infrastructure assessment
 - The 463 spaces will be allocated as follows
 - Up to 121 spaces to the adjacent M Social site as off-site parking spaces
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 - 170 spaces for offices and hotel valet parking

- 1 carwash space for residential use
- 2 facility management spaces
- 9 casual spaces for residential and office activities
- 21 tandem/stacked parking spaces will be provided, which will be allocated to the same residential unit or office tenancy
- 21 accessible parking spaces will be provided
- The main parking basement area will be accessed from the service lane.
- The facility management parking spaces will be accessed from the loading entrance off the service lane
- ◆ 5 loading spaces, designed to accommodate 8.3 m trucks, are provided in a separate loading area, accessed from the service lane
- ◆ The Development provides 594 secure bicycle parking spaces and 94 visitor bicycle parking stands. These will be supported by 38 showers and 388 lockers to provide end-of-trip facilities
- ◆ A network of pedestrian connections within the Site connecting Lower Hobson Street and Customs Street West.

Figure 1: Level 00 plan of the Development



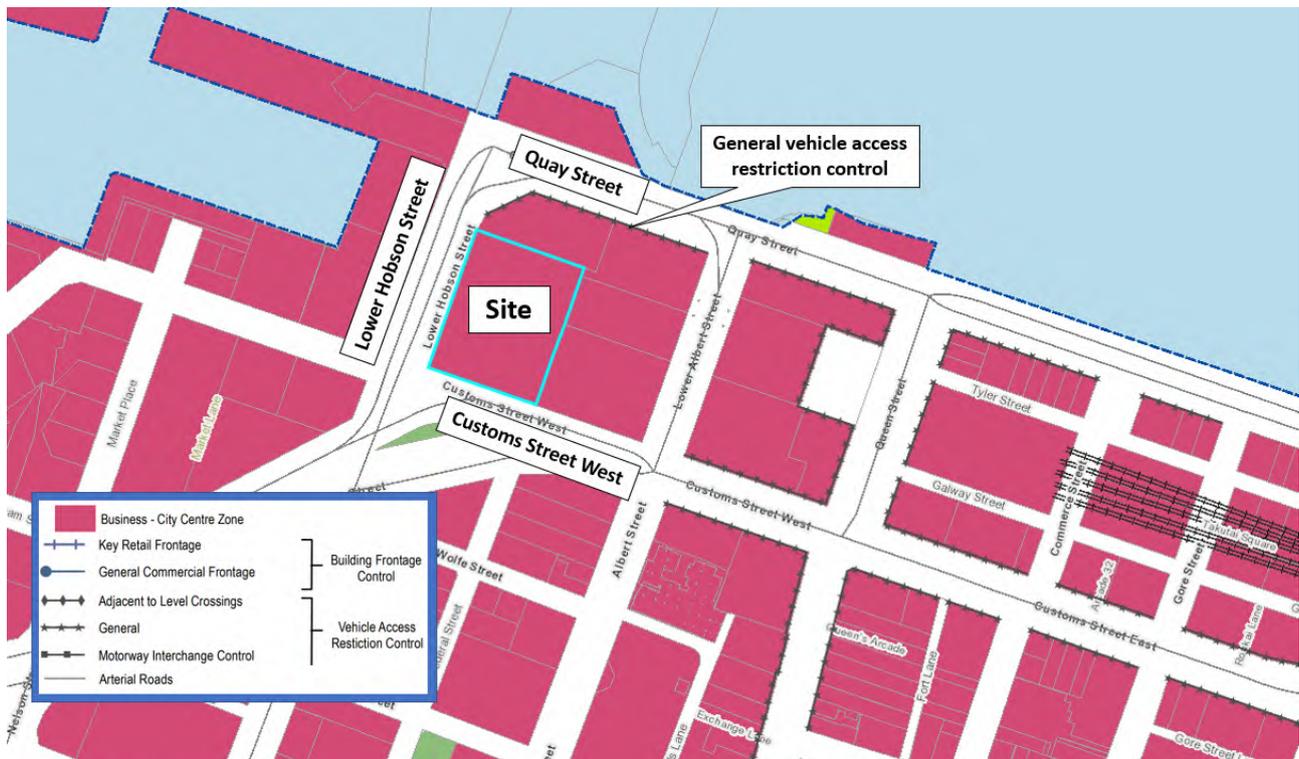
3 THE AUCKLAND UNITARY PLAN CONTEXT OF THE SITE

3.1 What Unitary Plan zoning, overlays and controls apply to this site?

As shown in Figure 2, the Site is zoned Business – City Centre-Street in the Unitary Plan within the Downtown West Sub-Precinct B Precinct.

- ◆ Quay Street, Lower Hobson Street and Customs Street West are all classified as arterial roads in the Unitary Plan and are therefore subject to Vehicle Access Restrictions
- ◆ Quay Street is subject to a General Vehicle Access Restriction Control.

Figure 2: Unitary Plan zoning and controls of the Site



3.2 What are the transport matters in the H8 Business City Centre Zone?

We understand that the Development has an overall Non-Complying activity status under the Unitary Plan.

Notwithstanding this, and to provide context to the Transport Assessment, we highlight the following Restricted Discretionary activity criteria applicable to transport (and excluding urban design matters) as set out in H8.8.2 (1) as follows:

“(1) new buildings and external alterations and additions to buildings not otherwise provided for:

(c) design of parking, access and servicing:

(iii) whether vehicle crossings and accessways are designed to reduce vehicle speed, be visually attractive and clearly signal to pedestrians the presence of a vehicle crossing or accessway;

(v) whether separate vehicle and pedestrian access are provided within parking areas. Shared pedestrian and vehicle access may be appropriate where a lane or street is proposed within a development site. The shared space should prioritise pedestrian movement;

(vii) for commercial activities, whether suitable provision is made for onsite rubbish storage and sorting of recyclable materials that:

- *is a sufficient size to accommodate the rubbish generated by the proposed activity;*
- *is accessible for rubbish collection; and*
- *for new buildings, is located within the building*

(viii) where appropriate, whether a waste management plan is provided and:

- *includes details of the vehicles to be used for rubbish collection to ensure any rubbish truck can satisfactorily enter and exit the site; and*

(x) whether the development is able to be adequately served by wastewater and transport infrastructure.”

We have provided an assessment against these H8 Business Centre Zone standards and assessment criteria in Appendix A.

Furthermore, Chapter H8 of the Unitary Plan specifies the matters of control for demolition of buildings. Please refer to the Demolition and Construction Transport Assessment report that Flow prepared, dated November 2025 for our assessment of these matters. In summary, we believe that the demolition proposal adequately addresses the assessment criteria.

3.3 What are the transport matters in the Downtown West, Precinct Sub-Precinct B?

The location of the Site within the Downtown West Precinct Plan is shown in Figure 3.

Figure 3: Downtown West Precinct Plan



In the Downtown West Precinct, Sub-Precinct B, the following activity statuses apply:

- ◆ New buildings, and alterations and additions to buildings – Restricted Discretionary activity
- ◆ Open space or through-site links – Restricted Discretionary activity
- ◆ Vehicle, cycle and pedestrian access – Restricted Discretionary activity
- ◆ Development that does not comply with Standard I205.6.2 Pedestrian connections – Restricted discretionary activity (this standard is addressed elsewhere in the application documents).

The relevant transport-related assessment criteria are set out in I205.8.2 of the Unitary Plan and are as follows:

“(1) new buildings, and alterations and additions to buildings:

(b) the assessment criteria in H8.8.2(1) of the Business - City Centre zone rules for new buildings and/or alterations and additions to buildings apply.

(2) open spaces or through-site links:

(a) the transport network (roads, public transport connections, pedestrian connections and cycle connections) is generally provided in the location identified in the precinct plan to achieve a legible street network. Where no location is identified, an integrated and efficient street and pedestrian network should be provided, including connections to existing and future streets and networks;

(3) vehicle, cycle and pedestrian access and circulation:

(a) the transport network (roads, public transport connections, pedestrian connections and cycle connections) is generally provided in the location identified in the precinct plan to achieve a legible street network. Where no location is identified, an integrated and efficient street and pedestrian network should be provided, including connections to existing and future streets and networks”

Our assessment against these assessment criteria is provided in Appendix A.

3.4 Our assessment of Chapter E27 Transport matters

We have undertaken an assessment against the provisions of Chapter E27 Transport (with details included in Appendix A of this report). In terms of Chapter E27, the Development has a Discretionary activity status under the following standards.

3.4.1 Activity status

Restricted Discretionary activities

- ◆ E27.4.1 (A2) Parking, loading, access and Electric Vehicle Supply Equipment, which is an accessory activity, but which does not comply with the standards for parking, loading, access and Electric Vehicle Supply Equipment (as outlined below)
- ◆ E27.4.1 (A5) Construction or use of a vehicle crossing where a Vehicle Access Restriction applies under Standards E27.6.4.1(2) or E27.6.4.1(3)
- ◆ E27.4.1 (A6) Use of an existing vehicle crossing where a Vehicle Access Restriction applies under Standard E27.6.4.1(1) to service the establishment of a new activity, a change of activity type, the expansion or intensification of an existing activity or where a building(s) is constructed, or additions to buildings that are not permitted activities in Table H8.4.1 Activity table; Table H9.4.1 Activity table; or Table H10.4.1 Activity table.

Discretionary activities

- ◆ E27.4.1 (A16) Off-site parking.

3.4.2 Infringements

In particular, the Development infringes the following standards of E27.

- ◆ E27.6.3.1(1) + PC79 E27.6.3.1(1) Size and location of parking spaces
 - 4 small carpark spaces do not meet the minimum dimensions required
- ◆ E27.6.4.1(1) Vehicle access restrictions
 - Use of an existing vehicle crossing subject to Vehicle Access Restriction – General Control (Quay Street)
- ◆ E27.6.4.1(2 and 3) Vehicle access restrictions
 - Vehicle access onto an arterial road (Customs Street West and Quay Street)

- ◆ E27.6.4.1(3) Vehicle access restrictions:
 - Vehicle crossing within 10 m of an intersection (The Hotel Drop-off western vehicle crossing on Customs Street West)
- ◆ E27.6.4.2(1) Width and number of vehicle crossings
 - The Quay Street frontage is subject to a Vehicle Access Restriction General Control. No crossings are permitted
 - 3 crossings on the Customs Street West frontage are proposed, where 2 are permitted
- ◆ E27.6.4.2(2) Width and number of vehicle crossings
 - The widths of the hotel pick-up and drop-off vehicle crossings exceed the maximum of 3.5 m.
 - The width of the Quay Street service lane vehicle crossing exceeds 6 m
- ◆ E27.6.3.3(3) Stacked parking: 21 tandem spaces are proposed, which could potentially be allocated to the office activity, whereas only residential stacked parking is permitted
- ◆ E27.6.3.5 Vertical clearance: height restrictions for servicing vehicles – 3.6 m of vertical clearance is provided, whereas 3.8 m is required. Accessible parking spaces require 2.5 m of vertical clearance, whereas 2.3 – 2.4 m is provided for areas accessing the spaces
- ◆ PC79 E27.6.3.2(A) Accessible parking: 21 accessible parking spaces are provided, whereas not less than 55 spaces are required

We have assessed the Development against the relevant design-related assessment criteria, namely

- ◆ E27.8.2 (9) and E27.8.2 (11) relating to the Development's vehicle access provisions
- ◆ E27.8.2.(8) relating to vertical clearance where loading is required, vertical clearances for accessible parking spaces, allocation of tandem parking spaces, and the design of small car parking spaces
- ◆ PC79 – E27.8.2.(4A) relating to providing fewer than the required number of accessible parking spaces

Our assessment of these Section E27 matters against the relevant assessment criteria is provided in Appendix A.

We conclude that these infringements will have no noticeable impacts on the safe and efficient operation of the Site or the surrounding transport network.

4 OUR CONSIDERATION OF RELEVANT TRANSPORT STRATEGIES

Over the last decade, land use and transport planning in Auckland has continued to evolve toward a stronger focus on enabling travel choice, reducing deaths and serious injuries, supporting compact urban growth, and addressing climate change through reduced transport emissions.

Government and Council plans provide a clear and consistent direction to integrate land use and transport planning, reduce reliance on single-occupant vehicle trips, and ensure that transport investment delivers value for money while supporting Auckland's long-term spatial outcomes.

Key themes across these strategies and policies include

- ◆ Integrating land use and transport planning so that urban form and transport services reduce the distance and time required to access employment, education, and services (Auckland Plan 2050, Unitary Plan, Long-term Plan 2024–2034, Transport Emissions Reduction Pathway)
- ◆ Minimising reliance on single-occupant vehicles and supporting a mode shift toward more efficient and sustainable transport such as walking, cycling, and public transport (Auckland Plan 2050, Unitary Plan, Long-term Plan 2024–2034, Regional Land Transport Plan 2024–2034, Regional Public Transport Plan 2023–2031, Transport Emissions Reduction Pathway)
- ◆ Mobility as a means to improve access, not an end goal in itself, recognising that accessibility and proximity are key drivers of equitable and sustainable outcomes (Auckland Plan 2050)
- ◆ Improving safety and reducing deaths and serious injuries across the transport system through safer infrastructure, network management, and behaviour change (Government Policy Statement on Land Transport 2024, Auckland Plan 2050, Long-term Plan 2024–2034, Regional Land Transport Plan 2024–2034, Transport Emissions Reduction Pathway)
- ◆ Reducing greenhouse gas emissions and other harmful pollutants by increasing the use of low-emission travel modes, providing affordable and frequent public transport, and supporting compact, mixed-use development (Auckland Plan 2050, Unitary Plan, Long-term Plan 2024–2034, Regional Land Transport Plan 2024–2034, Regional Public Transport Plan 2023–2031, Transport Emissions Reduction Pathway)
- ◆ Delivering a quality compact urban form that supports higher-density development near centres and rapid transit, thereby improving transport efficiency and reducing the need for long car trips (Auckland Plan 2050, Unitary Plan, National Policy Statement on Urban Development 2020)
- ◆ Unlocking growth around centres and rapid transit stations by aligning transport investment with land use intensification and mixed-use development (Auckland Plan 2050, Unitary Plan, Long-term Plan 2024–2034, Regional Public Transport Plan 2023–2031, National Policy Statement on Urban Development 2020)
- ◆ Removing minimum car parking requirements to encourage more efficient land use, housing affordability, and sustainable travel (National Policy Statement on Urban Development 2020)
- ◆ Recognising that building new or wider roads is increasingly expensive and constrained, and that most of Auckland's future travel demand must be accommodated within existing corridors through better allocation and management (Auckland Plan 2050, Regional Land Transport Plan 2024–2034)

- ◆ Optimising and maintaining existing assets to improve performance, resilience, and value for money, given fiscal constraints and climate-related risks (Government Policy Statement on Land Transport 2024, Long-term Plan 2024–2034, Regional Land Transport Plan 2024–2034)
- ◆ Using a scenario-based approach to planning and decision-making, ensuring that strategies and major investments are resilient to a range of possible futures (Auckland Plan 2050)
- ◆ Prioritising the city centre as the heart of Auckland’s transport system, where public transport, walking, cycling, and freight share limited space in a safe, efficient, and people-focused way (Regional Land Transport Plan 2024–2034, City Centre Masterplan 2020)
- ◆ Supporting safe, healthy, and sustainable travel options into and within the city centre to improve access and travel choice (City Centre Masterplan 2020).

Further information and details on these points are included in Appendix B.

We consider that the Development aligns well with the objectives set out in these various policy documents. It is a high-density commercial and residential development located with excellent access to public transport and a significant number of services and amenity within short walking distance. The Site location, in combination with reducing the existing on-site parking supply by around 75 % compared to the existing Downtown Carpark, discourages the use of private vehicles as a mode of travel and contributes to Auckland’s reductions in transport-based greenhouse gas emissions.

5 THE ENVIRONMENT NEAR THE SITE

5.1 Location of the Site

As shown in previous Figure 3, and Figure 4 below, the Site is located to the north of Customs Street West and east of Lower Hobson Street in the Auckland City Centre.

Figure 4: Site and immediately surrounding transport network



5.2 What are the land use activities around the Site?

The land use of the area surrounding the Site is shown in Figure 4 above. Being located in the City Centre, there is a range of land use activities in the surrounding area, including commercial, residential, retail, and restaurants.

The main activities located near the Site, include

- ◆ M Social hotel immediately to the north
- ◆ Princes Wharf mixed use development further to the north
- ◆ HSBC and AON office buildings immediately to the east
- ◆ Commercial Bay development to the east, on the opposite side of Lower Albert Street
- ◆ The Viaduct Harbour area to the west, which contains commercial and residential activities

- ◆ A range of uses in buildings and on land located to the south.

As such, the Site is well located to other complementary land uses in the surrounding area.

5.3 The road network surrounding the Site

The relevant roads surrounding the Site are Quay Street, Lower Hobson Street, Customs Street West and Fanshawe Street.

All roads in the City Centre have a speed limit of 30 km/h, excluding Hobson Street, Nelson Street and Fanshawe Street, which have a speed limit of 40 km/h.

5.3.1 Traffic volumes

Recent traffic volume data available for the local area obtained from Auckland Transport’s traffic count database is summarised in Table 1 below.

Table 1: Auckland Transport traffic volume data

Road	Mid-block location	Count Date	Average Daily Weekday Traffic (vpd)	AM / PM ⁵ Peak Hour Volume (vph)
Quay Street	Lower Albert Street to Lower Hobson Street	04/03/2025	10,773	660 / 682
Lower Hobson Street	Quay Street to Fanshawe Street	14/05/2024	6,446	427 / 484
Customs Street West	Albert Street to Queen Street	9/06/2023	15,910	1,337 / 1,255
Customs Street West	Market Place to Market Lane	18/01/2023	1,433	110 / 115

5.3.2 Quay Street

The existing layout of Quay Street in the vicinity of the Site is shown in Figure 5.

⁵ “AM” is the morning period of highest traffic demand, usually associated with travel to work, school, or other daily activities. “PM” is the afternoon or evening period of highest traffic demand, usually dominated by home-bound commuter traffic.

- ◆ Lower Hobson Street is split into 3 distinct sections. This includes the flyover and northbound and southbound sections
- ◆ The flyover provides a connection from Quay Street to Hobson Street, which provides access to SH1 further to the south. The flyover initially has 2 lanes, which increases to 3 and then 4 lanes on the approach to the Fanshawe Street intersection
- ◆ The southbound direction section is located directly adjacent to the Site. It includes 1 to 2 traffic lanes and a footpath on the east side
- ◆ The northbound direction section has 1 general traffic lane and 1 bus lane. Bi-directional protected cycle lanes and footpaths are provided on the west side of the street.

5.3.4 Customs Street West

The existing layout of Customs Street West in the vicinity of the Site is shown in Figure 7.

Figure 7: Customs Street West layout near the Site (looking west)



- ◆ The section of Customs Street West fronting the Site operates in a one-way eastbound direction. It includes 2 general traffic lanes and a bus lane
- ◆ Footpaths are provided on the north side only
- ◆ Bus stops are provided east of the service lane access
- ◆ The Downtown Carpark has two primary access and egress points.
 - Vehicle crossings along the road frontage on ground level, with separate crossings accommodating inbound and outbound vehicle movements
 - An overhead ramp towards Fanshawe Street, accommodating outbound movements only.

5.3.5 Fanshawe Street

The existing layout of Fanshawe Street is shown in Figure 8.

Figure 8: Fanshawe Street layout near the Site (looking west)



- ◆ The section of Fanshawe Street fronting the Site operates in a one-way westbound direction. It includes 3 general traffic lanes and 1 bus lane
- ◆ The Downtown Carpark has an exit onto Fanshawe Street, which forms a signalised intersection.
- ◆ Footpaths are provided on both sides. We note that the footpath on the north side is very narrow and does not provide a proper connection between the Downtown Carpark exit and Albert Street to the east. Pedestrians can cross at the signalised intersection of Fanshawe Street/Hobson Street.

5.4 The existing Site

The Site currently accommodates Auckland's Downtown Carpark.

It provides 1,944 parking spaces. There is a mix between short-term public use and long-term leased spaces.

5.4.1 Overview of existing vehicle accesses

A map of the existing vehicle access points serving the Site is shown in Figure 9, overleaf. These include:

- ◆ Downtown Carpark entry and exit vehicle crossings onto Customs Street West
- ◆ Downtown Carpark exit onto Fanshawe Street, which forms a signalised intersection with Fanshawe Street
- ◆ A service lane between Quay Street and Customs Street West, which serves the adjacent activities, including the M Social, HSBC and AoN buildings. The service lane generally accommodates two-way movement
- ◆ An existing access from the Downtown Carpark building onto the service lane. This particular access point is controlled by a roller door and is not used as an access point by the public.

Figure 9: Existing vehicle access

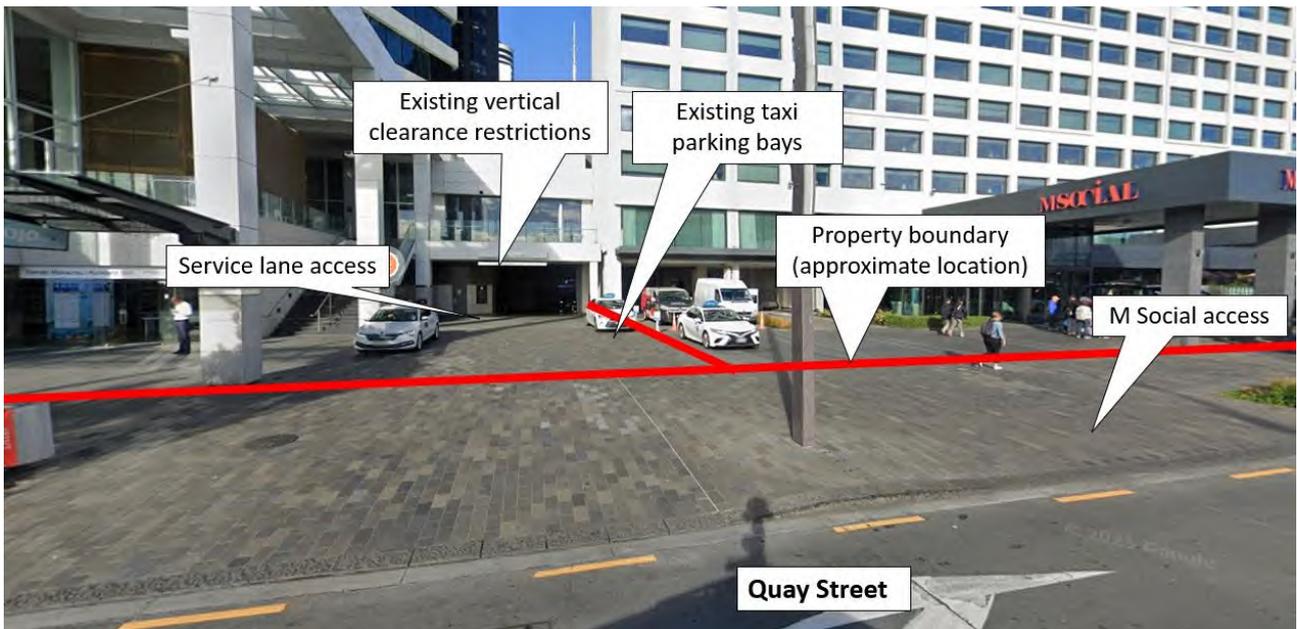


5.4.2 Existing Quay Street service lane vehicle crossing

Figure 10 below shows the layout of the Quay Street service lane vehicle crossing in mid 2025.

- ◆ The entire area is designed as a shared space, constructed with brick surface material
- ◆ While the surface material points to a low speed operating environment, we note that there is currently no delineation (as the area operates as a shared space), which can create confusion for vehicles and pedestrians as to how this area should be used
- ◆ There is no clear definition of the area between the M Social and service lane vehicle crossings and the area operates as one large crossing
- ◆ Visually, it is also not clear where the legal property boundary is located, although we have indicated where this is in red on the figure.

Figure 10: The layout of the service lane/M Social hotel vehicle crossings on Quay Street in mid-2025



During the writing of this assessment, minor improvements to the existing service lane have been made. Figure 11 below shows recent photographs of the layout with these minor improvements. The changes include

- ◆ New line markings to delineate the edge of the traffic lanes
- ◆ Two newly marked parking bays for the existing taxi parking area
- ◆ New bollards on the eastern side of the service lane adjacent to the HSBC building and near the stairs.

Figure 11: Recent improvements at the service lane/M Social hotel vehicle crossings on Quay Street

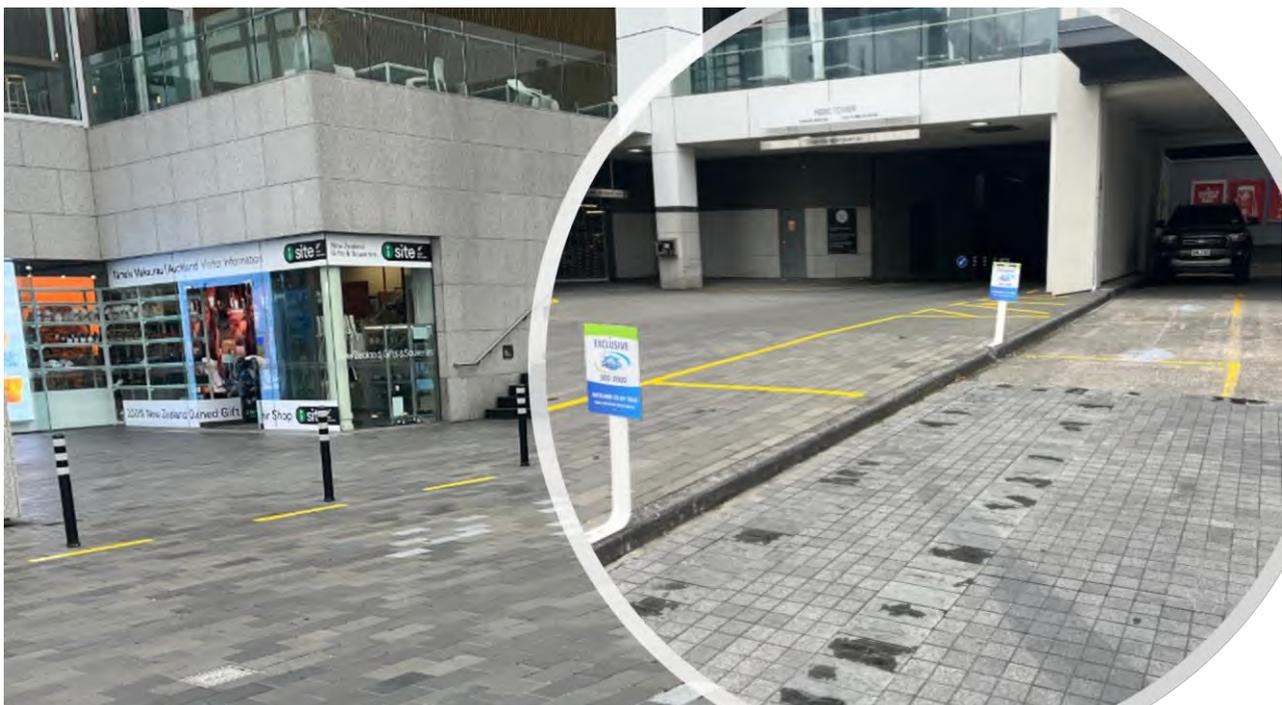
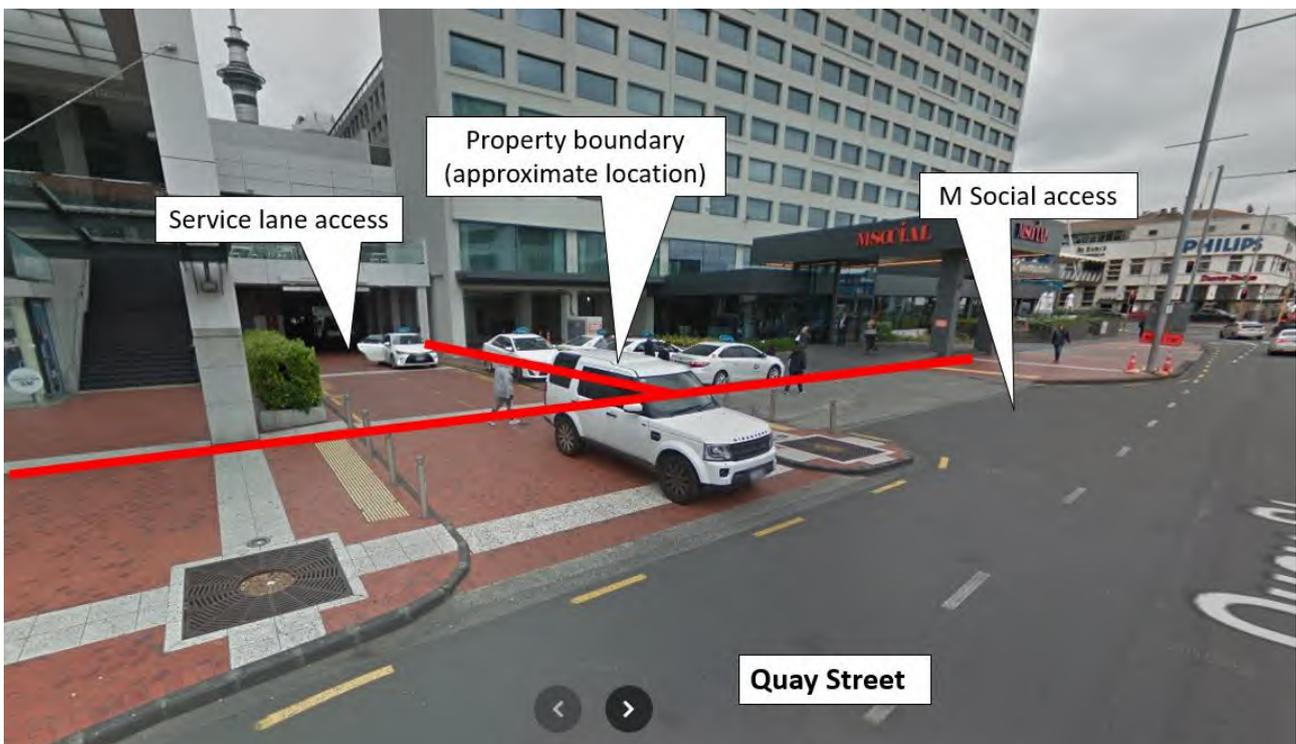


Figure 12 shows the previous layout of these vehicle crossings, before Quay Street was upgraded (prior to 2019)

- ◆ The previous arrangement had clear delineation, with the service lane access having road markings and defined boundaries
- ◆ The delineation of the crossings and the bollards meant that there was clear separation between the M Social and service lane vehicle crossings
- ◆ However, this layout provided priority to vehicles over pedestrians, which is contrary to the Land Transport (Road User) Rule 2004, which states that a driver entering or exiting a driveway must give way to a road user on a footpath, cycle path, or shared path. Therefore, a vehicle crossing should typically be designed to indicate that path users have right of way over vehicles, especially where there are high pedestrian volumes, such as at this location on Quay Street

In summary, the previous layout of Quay Street had clear delineation, but prioritised vehicles over pedestrians, hence why the design was changed.

Figure 12: Previous layout (pre-2019) of the service lane / M Social hotel vehicle crossings on Quay Street



5.4.3 Existing operational use of the service lane and the M Social hotel vehicle crossings on Quay Street

Based on our observations of video surveys undertaken at these vehicle crossings, we note the following regarding the use of these crossings by drivers and pedestrians:

- ◆ Drivers cross over between the service lane and M Social accesses when entering and exiting from Quay Street, and occasionally undertake a U-turn between them. This occurs in both directions. Drivers appear to do this out of convenience (even with no queues being present), not being directed to use a specific crossing due to the lack of delineation or not being familiar with the

crossing layout (notably relating to M Social hotel guests using the port-cochere). These manoeuvres often occurred within the footpath area outside of the property boundary (and therefore within the legal road reserve)

- ◆ Drivers stop in the middle of the paved area and sometimes in the middle of the vehicle crossing areas (at both vehicle crossings) for pick-up/drop-offs
- ◆ There are defined areas for taxis (4 spaces in total, 2 in the service lane side and 2 in the M Social hotel side). Additional taxis not using these spaces stop in the middle of the paved areas for pick-up and drop-off
- ◆ The service lane crossing typically operates with drivers giving way to pedestrians. There are high pedestrian volumes, particularly during the PM peak period. If there are several vehicles exiting the service lane crossing, then 1 driver typically waits at the edge of the road kerb on Quay Street. Drivers left a gap behind the first car, allowing pedestrians to walk freely behind this first car
- ◆ Given the area is designed as a shared space (as opposed to the pre-2019 layout with clear delineation), this behaviour is not unexpected.

5.4.4 Existing Customs Street West service lane vehicle crossing

Figure 13 shows the existing layout of the service lane vehicle crossing on Customs Street West.

This crossing accommodates two-way vehicle movement. A narrow flush path is painted along the west side of the access.

Figure 13: Existing service lane vehicle crossing on Customs Street West



5.4.5 Existing Downtown Carpark vehicle crossings on Customs Street West

Figure 14 shows the layout of the existing vehicle crossings serving the Downtown Carpark on Customs Street West

- ◆ There are two separate crossings serving inbound and outbound movements
- ◆ The inbound access has 4 lanes. This consists of 2 regular vehicle lanes, 1 motorcycle lane, and 1 reserved for card holders
- ◆ The outbound access has 2 lanes, which are separated by a raised island
- ◆ A bus lane is located on Customs Street West where the vehicle crossings have road frontage

Figure 14: Existing Downtown Carpark vehicle crossings on Customs Street West



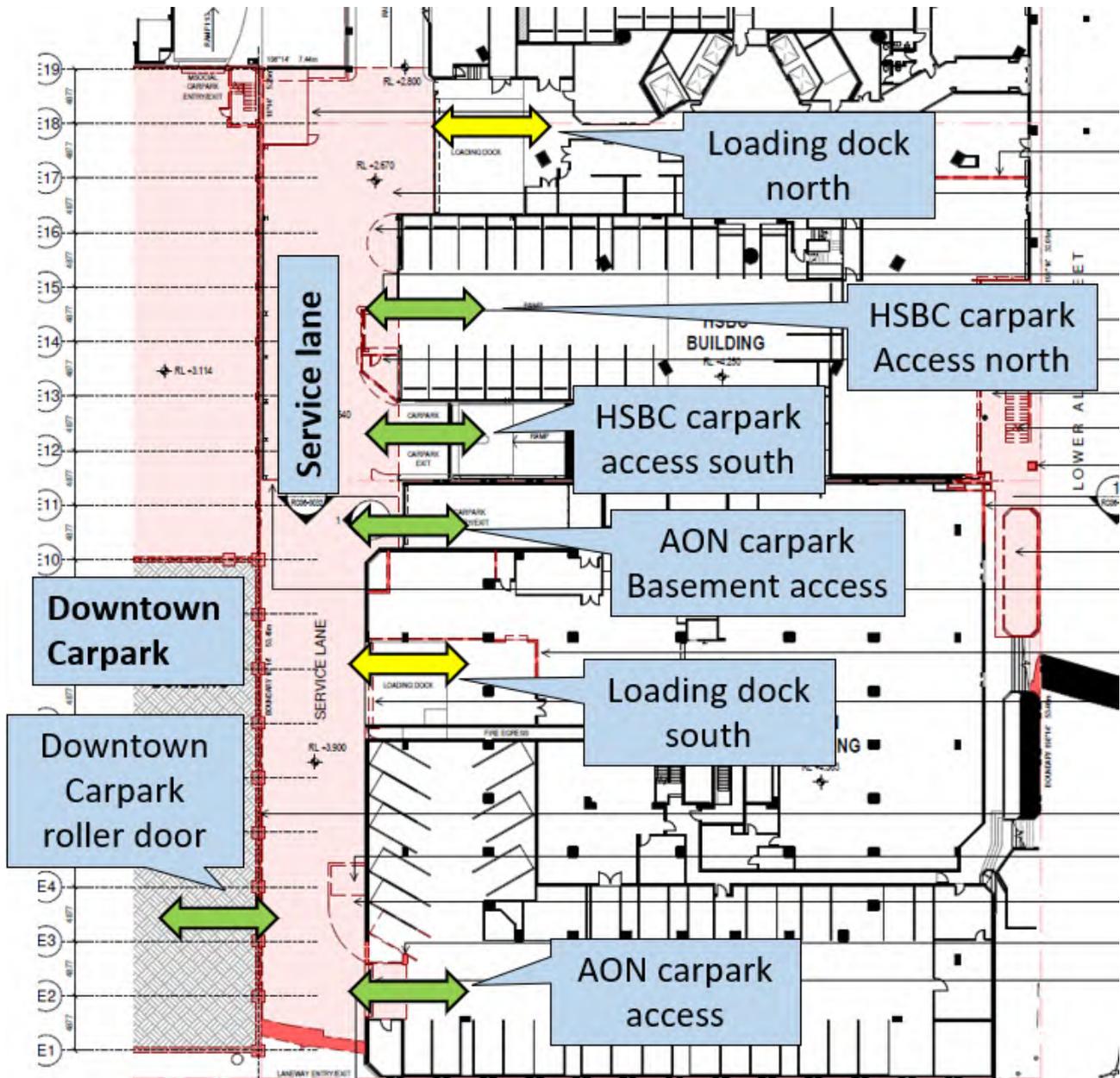
5.4.6 The service lane's layout

Photos of the existing layout of the service lane vehicle crossings from Quay Street and Customs Street West are shown in Figure 11 and Figure 13. A plan view layout of the service lane is shown in Figure 15.

- ◆ The service lane serves the adjacent activities, including the M Social, HSBC and AoN buildings
- ◆ The service lane is wide enough to accommodate two-way vehicle movement, although there are pinch points where it is narrower and can only accommodate one-way at a time truck movements
- ◆ On the eastern side of the service lane, there are several vehicle entrances into the AoN and HSBC parking areas, and 2 areas for service vehicles
- ◆ A painted path is provided on the west side of the service lane entering from Customs Street West, which transitions to the east side on the approach to the Quay Street access
- ◆ There are vertical height restrictions of 3.6 m at the north end of the service lane due to existing overhead structures

- While the service lane is private, it is sometimes used by vehicles as a through route between Customs Street West and Quay Street.

Figure 15: Layout of existing accesses on the service lane



5.4.7 Existing Downtown Carpark parking utilisation and traffic volumes

Auckland Transport has provided us with the following information about the existing utilisation of the Downtown Carpark.

- Figure 16 shows the daily inbound and outbound traffic volumes for the week of 1 – 7 May 2023
- During weekday peak hours, the average Downtown Carpark traffic generation from Tuesday to Thursday 2 – 4 May 2023 was approximately 300 vehicles per hour (“vph”) in the AM peak hour (7 – 8 am) and 380 vehicles per hour in the PM peak hour (5 – 6 pm)
- Based on data from April 2022 to April 2023, the average occupancy of casual parking spaces ranged from approximately 40 – 60 %.

Figure 16: Downtown Carpark daily traffic volumes, 1 – 7 May 2023 (provided by Auckland Transport)

DTCP - Entry and Exits: Week 1 – May 2023

Date	Day	In total	Out Total
1/05/2023	Monday	1821	1825
2/05/2023	Tuesday	2184	2170
3/05/2023	Wednesday	2501	2466
4/05/2023	Thursday	2588	2577
5/05/2023	Friday	2547	2370
6/05/2023	Saturday	2833	2659
7/05/2023	Sunday	1919	2255

Based on traffic surveys undertaken on Tuesday 6 May 2025, the Downtown Carpark vehicle crossings on Customs Street West had the following vehicle volumes during peak periods

- ◆ During the AM peak, 380 vph consisting of 366 inbound vph and 14 outbound vph
- ◆ During the PM peak, 197 vph consisting of 105 inbound vph and 92 outbound vph
- ◆ Note that this excludes the trips exiting via the ramp onto Fanshawe Street.

5.4.8 Existing service lane traffic volumes

We undertook traffic surveys of the use of the service lane and surrounding intersections on Tuesday, 6 May 2025, during the AM and PM periods. Table 2 and Table 3 show the surveyed peak hour volumes using the service lane.

Table 2: Service lane AM traffic volumes, 8:45 – 9:45 am, 6 May 2025

Service lane access	In vehicle trips			Out vehicle trips			Total
	Left	Right	Total	Left	Right	Total	
Quay Street	32	5	37	52	26	78	115
Customs Street West	122	n/a	122	1	n/a	1	123
Total	154	5	159	53	26	79	238

Table 3: Service lane PM traffic volumes, 5– 6 pm, 6 May 2025

Service lane access	In vehicle trips			Out vehicle trips			Total
	Left	Right	Total	Left	Right	Total	
Quay Street	8	4	12	92	47	139	151
Customs Street West	79	n/a	79	2	n/a	2	81
Total	87	4	91	94	47	141	232

The results show that:

- ◆ For Customs Street West during the AM and the PM hours, the access is primarily used as an inbound access for vehicles, with low outbound movements
- ◆ For Quay Street
 - Around $\frac{1}{3}$ of vehicles were inbound and $\frac{2}{3}$ outbound during the AM period
 - During the PM period, the majority of exiting vehicles use the Quay Street access to exit both left and right onto Quay Street. There are low volumes of inbound movements
 - During both peak periods, right turn in movements at the Quay Street access were low. Vehicles approaching from the west can use Customs Street West to access the service lane, avoiding the need to turn right from Quay Street.

The volume of service vehicles using the service lane In October 2024 are provided in Table 4 below. This data was obtained from the Mobile Dock system for the week of 14 to 20 October 2024.

Table 4: Service vehicle volumes using the service lane 14-20 October 2024

	Monday 14/10/2024	Tuesday 15/10/2024	Wednesday 16/10/2024	Thursday 17/10/2024	Friday 18/10/2024	Weekday average
Total servicing vehicles per day	24	7	6	6	7	10
Total servicing vehicle movements per day ⁶	48	14	12	12	14	20
AM hour vehicle movements	6	0	2	0	0	2
PM hour vehicle movements	4	2	0	1	1	2

These servicing demand volumes indicate that

- ◆ on average, there are 10 servicing vehicles per day during weekdays. The highest daily demand was 24 servicing vehicles per day which occurred on a Monday
- ◆ the average number of vehicle movements during weekday peak hours is low at 2 movements per hour. The highest peak hour service volumes were 6 movements per hour, occurring on a Monday
- ◆ While not shown in the table above, no servicing volumes occurred during the weekend
- ◆ We consider that these recorded servicing volumes are very low relative to the total volume of vehicles using the service lane.

⁶ daily vehicle movements are twice the number of vehicle trips, accounting for inbound and outbound trips

5.5 Crashes that have occurred near the Site

We have undertaken a search of crash records on roads about the subject site using the New Zealand Transport Agency's (NZTA) Crash Analysis System (CAS). The searches cover a five-year period from 2020 to 2024, and also 2025 crashes to date⁷. This provides around 5 full years of data with the existing road layout, noting that the Quay Street upgrades were completed in early to mid-2021. Any data from 2020 on Quay Street may be influenced by construction activities or the previous layout.

We have assessed each recorded crash, injury severity level (i.e., non-injury, minor, serious, and fatal) and other factors such as crash year, weather conditions and road conditions within the following areas:

- ◆ Quay Street service lane access
- ◆ Customs Street West service lane access
- ◆ Downtown Carpark accesses onto Customs Street West
- ◆ Downtown Carpark access onto Fanshawe Street (which will be removed).

We have considered an area with a 50 m radius on all the accesses mentioned above for the crash search history. The extent of our crash search is shown in Figure 17 below with the crash numbers recorded in each year shown in Table 5.

⁷ CAS search completed 09/09/2025

Figure 17: Crash locations, type and severity of crash

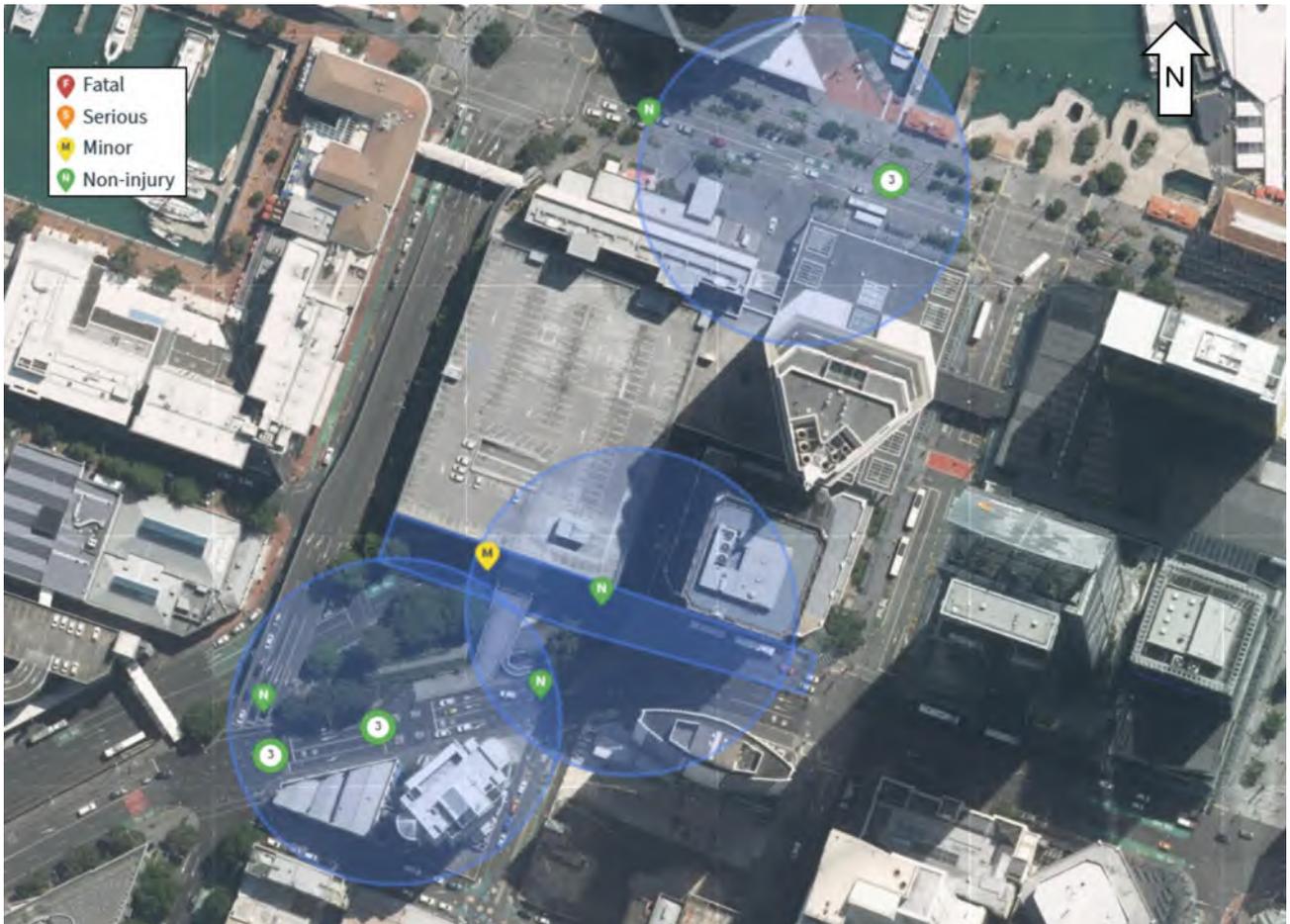


Table 5: Number of crashes by area and severity

Section of Crash	Fatal	Serious	Minor	Non-injury	Total
Service Lane access at Custom Street West	0	0	0	1	1
Service Lane access at Quay Street	0	0	0	4	4
Downtown car park access at Fanshawe Street	0	0	0	3	3
Downtown car park access at Custom Street West	0	0	1	0	1
Others	0	0	0	5	5
Total	0	0	1	13	14

Of the 15 crashes that were recorded to have occurred, there were no serious or fatal injury crashes, with 1 minor and 13 non-injury crashes reported.

- ◆ 4 crashes occurred at the service lane access on Quay Street, all being non-injury crashes. The crashes occurred as follows
 - A vehicle undertook a U-turn from the northbound section of Lower Hobson Street into the southbound section of Lower Hobson Street and collided with a vehicle travelling westbound on Quay Street. This crash occurred in 2021 after the Quay Street upgrade
 - A rear-end crash occurred on Quay Street. This crash occurred in 2021 after the Quay Street upgrade
 - An ambulance (responding to a serious assault incident at midnight) left its engine on after parking and collided with another vehicle. This crash occurred in 2023
 - A side-swipe crash occurred on Quay Street when a vehicle struck a parked car that was picking up an Uber passenger. This crash occurred in 2025
 - We note that none of these crashes directly involved turning in and out of the service lane, and no crashes involved pedestrians
 - The crash history illustrates that the shared space nature of this area has been operating safely with no reported injury crashes and a very low crash rate, despite the relatively high probability of vehicle and pedestrian conflicts in the area. The crash history does not show any fundamental safety issues with the operation of the access.
- ◆ 1 non-injury crash occurred at the service lane access at Customs Street. The crash involved a small rear end collision. The crash did not directly involve turning in and out of the service lane, and didn't involve pedestrians
- ◆ 1 minor injury crash was recorded at the Downtown Carpark access on Custom Street West. The crash was due to a driver failing to notice a pedestrian crossing while turning into the Downtown Carpark
- ◆ 3 non-injury crashes were recorded at the Downtown Carpark access on Fanshawe Street
 - 2 of the crashes were due to a vehicle jumping the red signal and colliding with another vehicle coming out of the Downtown Carpark
 - 1 crash resulted from a crash at the Fanshawe Street and Hobson Street intersection, which extended back towards the Downtown Carpark access.
- ◆ There were 5 crashes recorded which were outside our assessment area, including crashes on Fanshawe Street and at the intersection of Hobson Street and Fanshawe Street (all were non-injury crashes)
- ◆ As mentioned previously, no crashes were recorded as a result of vehicles entering/exiting the service lane from Quay Street and Customs Street West.
- ◆ The Safe System approach to road safety acknowledges that people make mistakes and that some crashes are inevitable, however, death or serious injury from crashes is not acceptable. The crash history shows that while there have been a small number of crashes, none resulted in any serious or fatal injury crashes.

6 HOW THE SITE IS ACCESSED BY DIFFERENT TRANSPORT MODES

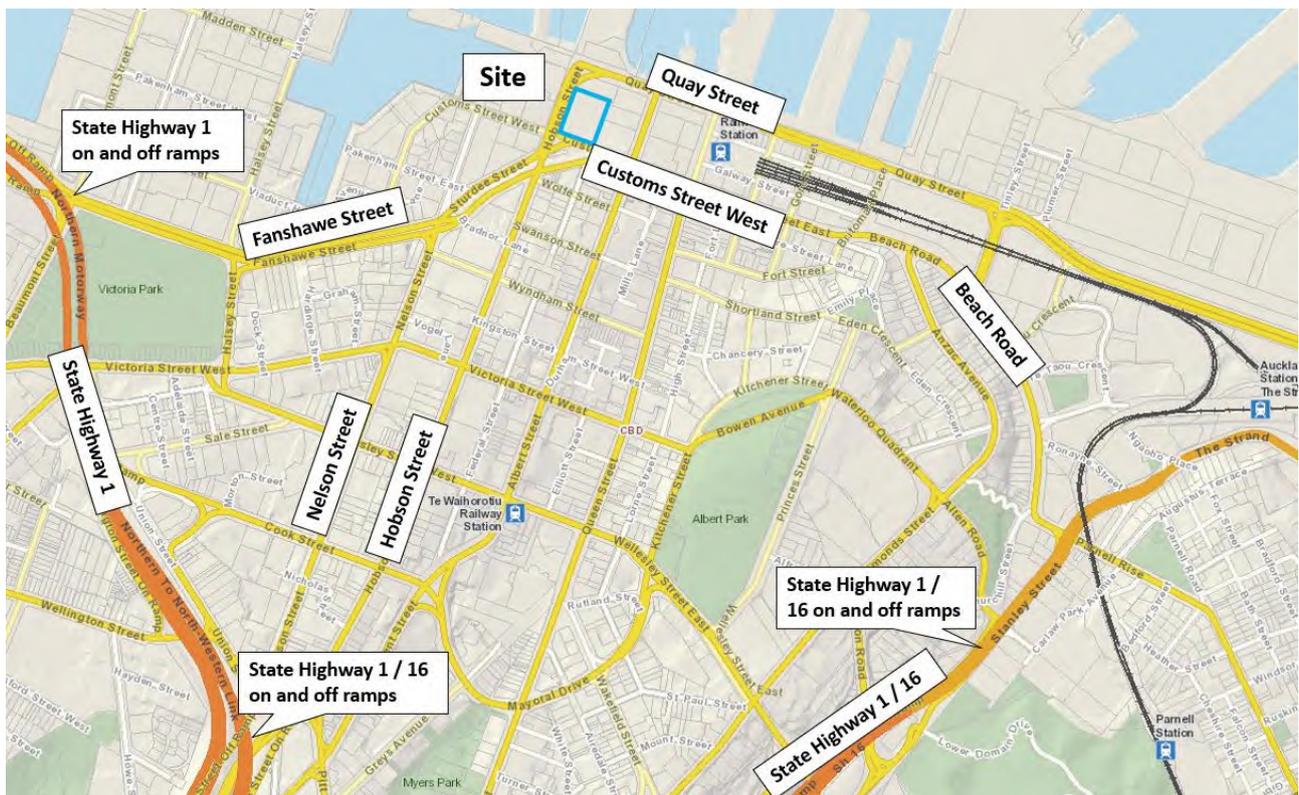
6.1 The Site's private vehicle accessibility

As shown in Figure 18, the Site is well located for accessibility to the road network.

- ◆ Access to the State Highway (SH) network is available at several locations
 - SH1 to the west near Fanshawe Street
 - SH1 and SH16 to the south via Hobson Street and Nelson Street
 - SH1 and SH16 to the southeast via Beach Road and Stanley Street.
- ◆ Access to the arterial road network is available immediately through Quay Street and Customs Street West. There are other arterial roads near the Site in the City Centre, including Fanshawe Street, Hobson Street and Nelson Street.

This provides the Site with very good access to the wider network.

Figure 18: Site location in the strategic transport network



6.2 Site’s accessibility for public transport users

6.2.1 Public transport connectivity

With the Site being located some 250 m from the Waitematā Transport Centre and the Downtown ferry terminal, as well as having several bus routes around it, the Site has excellent public transport accessibility.

In particular, the Site has access to the following public transport facilities.

- ◆ The Waitematā train station has frequent trains running along the Eastern, Western, Southern and Onehunga Lines.
- ◆ Accessibility via train will be further improved to other parts of Auckland City once the City Rail Link is completed, which is currently scheduled for November 2025, with services commencing in 2026. The Site will be approximately 600 m walking distance from the Aotea Station (via the Victoria Street entrance), providing good access from two train stations, once the City Rail Link is complete
- ◆ The Downtown ferry terminal connects Auckland City with suburbs on the North Shore and in west and east Auckland, and the islands of the Hauraki Gulf. It is located within 200 m of the Site, on the opposite side of Quay Street
- ◆ Many bus services are accessible in the immediate area surrounding the Site, as outlined in Table 6 below. Lower Albert Street is a bus interchange, and as outlined below, there are other bus stops located on Quay Street and Customs Street West.

Table 6: Existing bus routes near the Site

Route	Route Description	Frequency	Nearest bus stop
NX1	Hibiscus Coast to City (via Northern Busway)	At least every 6-10 minutes at peak times. At least every 30 minutes at other times.	Lower Albert Street
City Link	Karangahape Rd, Queen St, Wynyard Quarter	At least every 15 minutes, 7 am – 7 pm, 7 days a week. Frequencies may be lower in the early mornings and evenings	Queen Street or Fanshawe Street
105	Westmere to City	At least every 30 minutes, 7 am – 7 pm, 7 days a week	Customs Street West
106	City, Freemans Bay, Karangahape Rd, City (one-way loop)	At least every 30 minutes, 7 am – 7 pm, 7 days a week	Customs Street West
95B / 95C	City to Glenfield	At least every 30 minutes, 7 am – 7 pm, 7 days a week	Quay Street
97B / 97R	City to Birkdale / Beach Haven	At least every 30 minutes, 7 am – 7 pm, 7 days a week	Quay Street

6.2.2 Bus facilities near the Site

A map of the existing bus facilities in the area surrounding the Site is shown in Figure 19.

Figure 19: Bus facilities in the surrounding area



For the area surrounding the Site, the following facilities for buses are provided:

- ◆ bus lanes on
 - Lower Hobson Street, northbound direction
 - Quay Street, both directions
 - Lower Albert Street, both directions
 - Customs Street West, eastbound direction
 - Fanshawe Street, westbound direction.
- ◆ bus stops on
 - Quay Street, south side
 - Lower Albert Street, both sides.

The following bus routes travel on the roads surrounding the Site.

- ◆ The Quay Street bus stops serve the 95 and 97 routes to the North Shore. Buses on this route turn left onto the Lower Hobson Street flyover and then right onto Fanshawe Street
- ◆ The northbound bus stops on Lower Albert Street serve the NX1 route. Buses on this route turn left onto Quay Street, then left onto the Lower Hobson Street flyover and then right onto Fanshawe Street
- ◆ The southbound bus stops on Lower Albert Street serve the 11, 105, 106, WX1, 18, 195 and 209 routes. These all travel directly south onto Albert Street
- ◆ A number of bus routes travel across the Site frontage on Customs Street West, including the City Link, Inner Link, 95, 97, 931, 933, and 939 routes.

6.3 The Site's accessibility for pedestrians and cyclists

The following facilities are provided for pedestrians in the surrounding area.

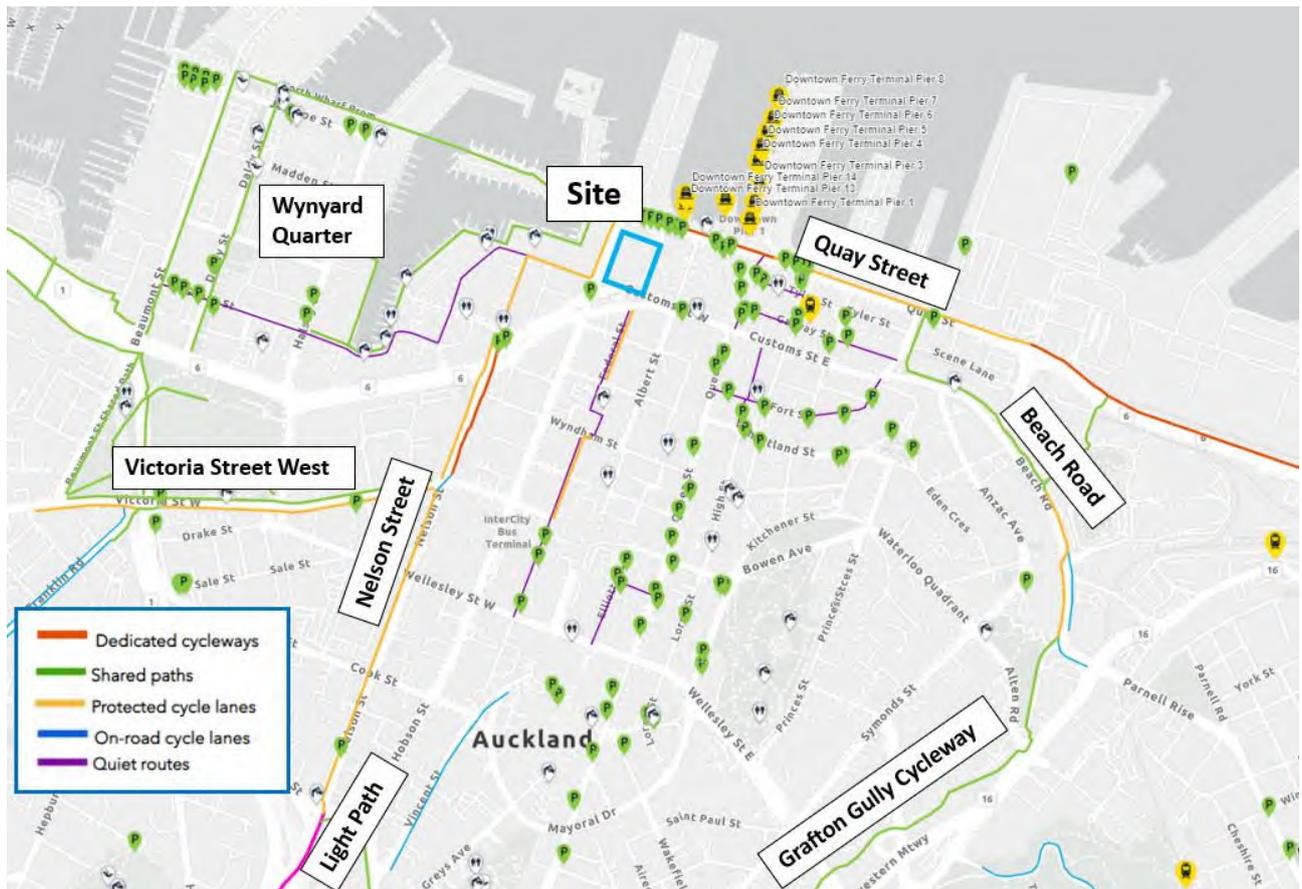
- ◆ Footpath widths typically exceed 1.8 m
- ◆ All roads generally have footpaths on both sides. One exception is Customs Street West, adjacent/southeast of the Site, which only has a footpath on the north side
- ◆ Most intersections in the City Centre are signalised, which provides signal controlled crossing points for pedestrians. Intersections in the surrounding area include Quay Street/Lower Hobson Street, Quay Street/Lower Albert Street, Lower Albert Street/Customs Street West, and Customs Street West/Lower Hobson Street.

Figure 20 shows the existing cycle network in the City Centre area, including the following facilities.

- ◆ Dedicated cycleways are provided on Quay Street, connecting Tamaki Drive to the east of the Site. Some short sections of Quay Street have protected cycleways instead of a fully dedicated cycle path
- ◆ Protected cycleways are provided on several roads in the surrounding area, including Lower Hobson Street and Nelson Street
- ◆ The Light Path quiet route is generally a fully off-road cycle route, which provides a connection to West Auckland. This can be accessed at the southern end of Nelson Street. A cyclist from the Site can access the Light Path through routes containing protected cycleways
- ◆ The City Centre network contains other shared paths and quiet routes for cyclists. Routes are available through Wynyard Quarter and the harbour to the west.

In summary, we consider the Site has a very high level of accessibility for pedestrians and cyclists. The pedestrian and cycle facilities will support people who undertake multi-modal trips, such as walking combined with public transport.

Figure 20: Cycle network in the vicinity of the Site



7 HOW PEOPLE AND VEHICLES WILL ACCESS THE DEVELOPMENT

7.1 Vehicle access provision

As shown in Figure 21, the primary vehicle access to the Development will be provided via the private service lane extending between Customs Street West and Quay Street.

- ◆ Separate access to the basement parking and servicing area is taken from the service lane
- ◆ Due to vertical clearance constraints and as explained further in Section 8.4.2, heavy vehicle movements will only be able to access the Development via Quay Street.

Furthermore, a hotel pick-up/drop-off area is proposed on the Customs Street West frontage. This will be served by an inbound and outbound vehicle crossing.

Figure 21: The Development's vehicle access provision

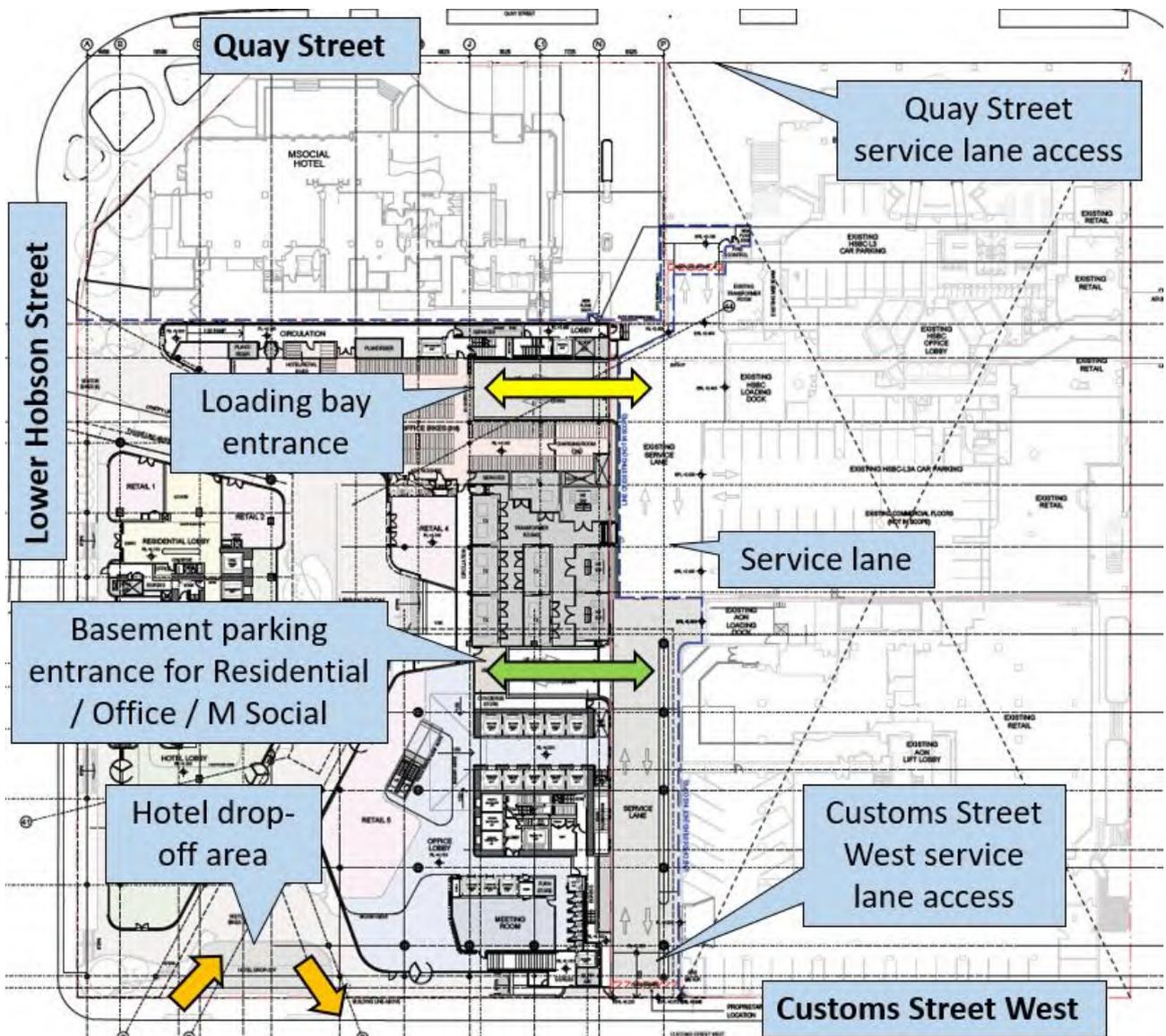
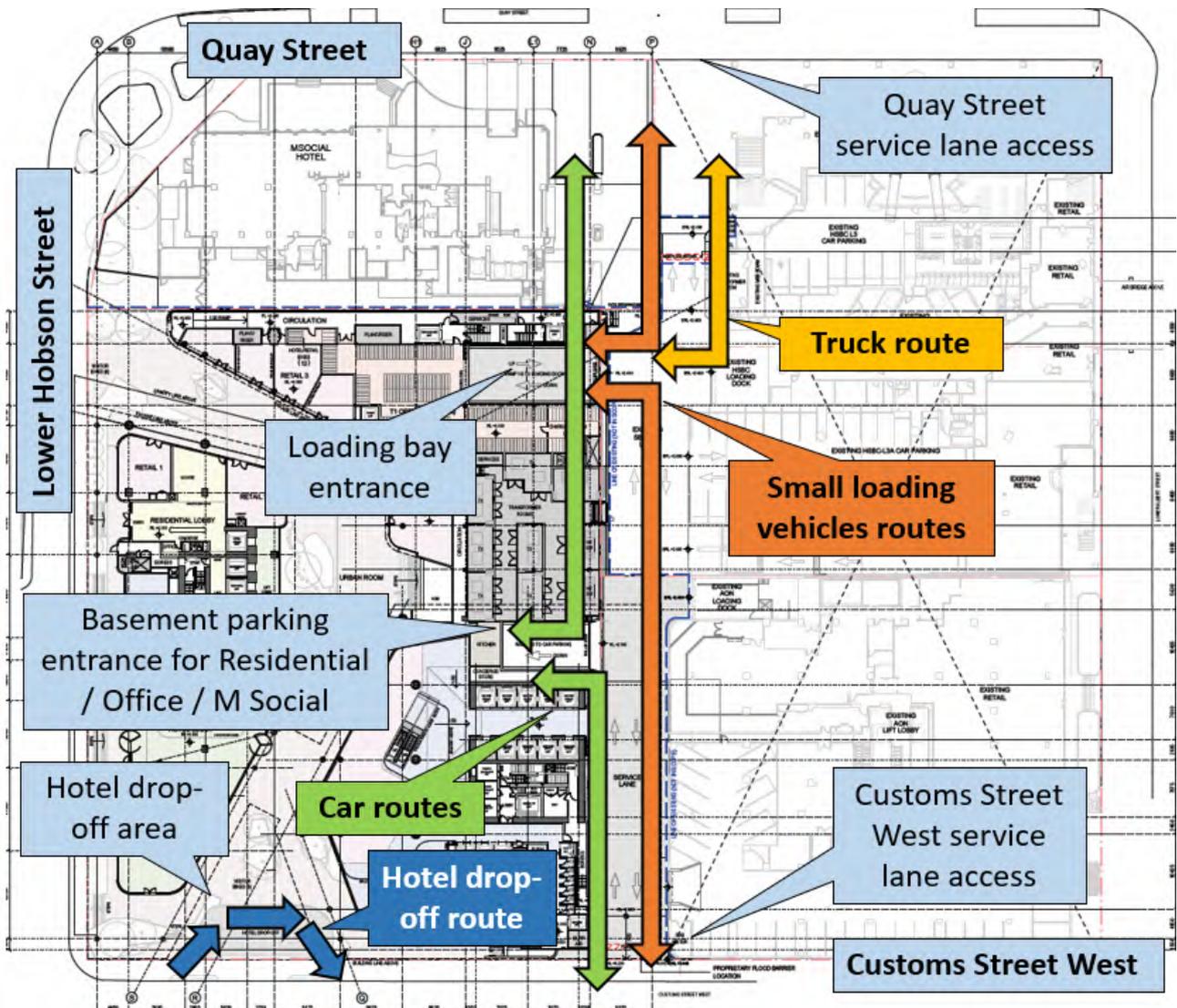


Figure 22 shows the access routes for different vehicle types.

- ◆ For the service lane
 - Car drivers will be able to use either access at Quay Street or Customs Street West
 - Small loading vehicles such as vans will also be able to use either access at Quay Street or Customs Street West
 - Trucks will be required to use the Quay Street access only due to vertical clearance constraints due to the design of the podium level above the Customs Street West end of the service lane
- ◆ The hotel pick-up and drop-off area will be self-contained from the service lane, and only available for use by the hotel. It can accommodate cars or vans.

Figure 22: Access routes for different vehicle types



7.2 Vehicle access assessment

The Unitary Plan specifies the following design rules relating to the Development's vehicle access

E27.6.4.1. Vehicle Access Restrictions

Vehicle access restrictions apply to all vehicle crossings, as Customs Street West and Quay Street are both classified as arterial roads in the Unitary Plan.

Furthermore, Quay Street is subject to Vehicle Access Restrictions – General Control (E27.6.4.1(1)(a)). In such cases, new vehicle crossings are not permitted unless they meet one of the specified exceptions (E27.6.4.1(1)(i)–(ii)), such as

- ◆ Using an existing crossing to service a new or changed activity; or
- ◆ Relocating or amalgamating existing crossings where this reduces or does not increase the number or width of crossings
- ◆ Where no other practical means of access exist.

Where these exceptions apply, consent is generally required as a restricted discretionary activity; otherwise, the activity is non-complying.

Under E27.6.4.1(2), this standard also applies when a new activity is established, the type of activity changes, or buildings are constructed or altered in a way that is not a permitted activity under the relevant activity tables (H8–H15).

In addition, vehicle access is restricted where (E27.6.4.1(3))

- ◆ The crossing would be within 10 m of an intersection
- ◆ It is subject to the following types of Vehicle Access Restriction as identified on the planning maps in the zones listed in Table E27.6.4.1.1
- ◆ The site has frontage to an arterial road
- ◆ The access is within 30 metres of a railway level crossing.

E27.6.4.2. Width and number of vehicle crossings

- ◆ Where a site is subject to a Vehicle Access Restriction (General Control) in the Business – City Centre Zone or a Key Retail Frontage Control, no vehicle crossings are permitted (Standard E27.6.4.2(1) and Table E27.6.4.2.1)
- ◆ A site subject to a Vehicle Access Restriction or General Commercial Frontage Control may have a maximum of one vehicle crossing per 50 m of frontage (or part thereof), with a minimum 2 m separation from crossings on adjacent sites and 6 m separation between crossings on the same site, unless combined crossings (Standard E27.6.4.2(1) and Table E27.6.4.2.1)
- ◆ Vehicle crossings in Centres serving 9 or less parking spaces and providing for one-way traffic movements, need to be 3.0 – 3.5 m wide, measured at the property (Standard E27.6.4.2(2) and Table E27.6.4.3.2)

- ◆ Vehicle accessways in Centres serving 9 or less parking spaces and providing for one-way traffic movements need to have a minimum formed width of 3.0 m (Standard E27.6.4.2(2) and Table E27.6.4.3.2).
- ◆ Vehicle crossings in Centres serving 10 or more parking spaces and providing for two-way traffic movements, need to be 5.5 – 6.0 m wide, measured at the property (Standard E27.6.4.2(2) and Table E27.6.4.3.2)
- ◆ Vehicle accessways in Centres serving 10 or more parking spaces providing for two-way movements need to have a minimum formed width of 5.5 m and 1.5 m pedestrian access for rear sites (Standard E27.6.4.2 and Table E27.6.4.3.2).

E27.6.4.3. Width of vehicle access and queuing requirements

- ◆ Every on-site parking and loading space must have vehicle access from a road that complies with the width standards set out in (E27.6.4.3(1))
 - (a) Passing bays provided in accordance with Table E27.6.4.3.1, where required
 - (b) A minimum formed access width as specified in Table E27.6.4.3.2, depending on the number of spaces served and the type of activity
- ◆ Vehicle access must be designed to prevent queuing into the road reserve or obstruction of entry/exit to and from the site (E27.6.4.3(2)). This includes ensuring sufficient internal queuing space for vehicles using fuel dispensers, ticket vending machines, remote ordering facilities, entrance control mechanisms, or other drive-through operations, as applicable.

E27.6.4.4. Gradient of vehicle access

The Unitary Plan specifies the following maximum requirements for access gradients.

- ◆ Vehicle access (Standard E27.6.4.4(1) and Table E27.6.4.4.1)
 - Used by heavy vehicles: 1 in 8 (12.5%)
 - Used by all other activities: 1 in 6 (16.7%).
- ◆ Change in gradients of more than 1 in 8 (12.5%) at the summit or 1 in 6.7 (15%) at a sag must include transitions with a minimum length of 2 m (Standard E27.6.4.4(2))
- ◆ Vehicle accesses must be designed so that where the access adjoins the road, there is sufficient space onsite for a platform so that vehicles can stop safely and check for pedestrians and other vehicles prior to exiting. For all other activities, a 6 m platform is required with a gradient no steeper than 1 in 20 (5%) (Standard E27.6.4.4(3)).

7.2.1 Customs Street West service lane vehicle crossing assessment

The Customs Street West vehicle crossing to the service lane will be in a similar location to the existing service lane crossing, and there will be some minor changes to the design of the crossing.

- ◆ The Site has about 80 m of road frontage to Customs Street West. Including the hotel pick-up and drop-off vehicle crossings, 3 vehicle crossings will be provided along this frontage, whereas 2 are permitted. The vehicle crossings along Custom Street West do not comply with the Unitary Plan in this respect. Appendix A includes our assessment of this infringement against the relevant assessment criteria. In summary, we note that

- The number of vehicle crossings compared to the existing arrangement remains unchanged
- The widths associated with the new vehicle crossings are narrower and reduce the impact on the public footpath
- The hotel pick-up and drop-off vehicle crossings will see much less traffic compared to the existing Downtown Carpark vehicle crossings
- ◆ The service lane vehicle crossing is at least 2 m from the neighbouring vehicle crossings and more than 6 m from the hotel pick-up and drop-off vehicle crossings, and it complies with the Unitary Plan design requirements
- ◆ The 6.0 m width of the vehicle crossing at the property boundary accommodates two-way vehicle movement and complies with the Unitary Plan design requirements. Vehicle tracking in Appendix E shows that 2 cars or vans can enter and exit the access at the same time
- ◆ There are effectively no modifications to existing sightlines from this crossing compared to the existing situation. Drivers of exiting vehicles have excellent visibility looking west along Customs Street West. Once the existing Downtown Carpark is removed, there is likely to be some improved visibility with the removal of the ramp onto Fanshawe Street
- ◆ Customs Street West is classified as an arterial road, meaning Vehicle Access Restrictions apply in the Unitary Plan (Standard E27.6.4.1(2) and (3))

7.2.2 Quay Street service lane vehicle crossing assessment

The Quay Street service lane vehicle crossing will be in a similar location to the existing service lane crossing and there will be some minor changes to the design of the crossing.

Currently, the width of the vehicle crossing at the property boundary is not clearly defined, as this section of Quay Street is designed as a slow-speed environment shared with pedestrians.

Following recent stakeholder engagement with M Social and Auckland Transport, an updated concept design has been prepared for the Quay Street vehicle access. The intent of this design is to respond to feedback received from both parties and to improve the operational and safety outcomes along the shared service lane. The key matters that were raised and we addressed are

- ◆ Clearer delineation between vehicle and pedestrian areas; and
- ◆ Improved demarcation between the service lane and the M Social frontage.

The updated concept addresses these points through a combination of physical design measures and layout refinements and is attached as Appendix H. The key features of the proposed design include

- ◆ Speed management measures, including near the property boundary and retention of existing speed humps within the service lane
- ◆ Physical separation of traffic directions via a 0.5 m median strip, which could be implemented as a textured surface, low raised lip, or planter feature. This element provides both visual and functional separation, moderates speeds, and defines the vehicle path
- ◆ A low (lower than 900 mm) physical separation element at the corner boundary with M Social to maintain visibility between pedestrians and exiting vehicles

- ◆ Vehicle tracking confirmation for a 10.3 m rigid truck, providing conservative assurance that the access can accommodate larger vehicles than those expected (8.3 m trucks) for operational servicing
- ◆ Provision for bollards within the road reserve, to be implemented at Auckland Transport's discretion
- ◆ The existing lighting pole separating the M Social vehicle crossing and the service lane vehicle crossing will remain in place. The space between this pole and the new low physical separator at the corner boundary with M Social (where the bollard provisions are) will function as a pedestrian refuge area, as these two elements naturally define a swept path that avoids pedestrian movement through this space.

We have assessed the updated vehicle crossing design against the Unitary Plan below

- ◆ The Site has only one vehicle crossing from Quay Street, which is separated by more than 2 m from the M Social vehicle crossing as measured at the property boundary. The tweaks to this vehicle crossing mean that separation distance is now compliant
- ◆ The 7.6 m width of the vehicle crossing at the property boundary accommodates two-way vehicle movement. It exceeds the maximum of 6.0 m and does not comply with the Unitary Plan design requirements. Appendix A includes our assessment of this infringement against the relevant assessment criteria. In summary, we note that
 - The directions of travel have been physically separated, and speeds will be managed effectively through this section
 - It will effectively operate as two narrower vehicle crossings for each direction (3.3 m and 3.8 m wide, respectively), given that the directions of travel will be physically split
 - A narrower width could be achieved, but at the detriment of the physical separation in direction
 - The updated concept design creates clearer delineation between vehicle and pedestrian areas, and drivers will therefore be more aware of their obligation to give-way to pedestrians
 - Compared to the scenario observations through survey footage where there was no defined vehicle crossing, the proposed layout is a vast improvement for pedestrian safety and vehicle management, noting that there were no recorded fatal or serious crashes with the existing vehicle crossing, as previously explained
- ◆ There are no changes to existing sightlines compared to the existing situation. Drivers of exiting vehicles have good visibility looking west towards Lower Hobson Street and east towards Lower Albert Street
- ◆ Quay Street is classified as an arterial road. Furthermore, this section of Quay Street is subject to Vehicle Access Restrictions – General Control. Use of an existing crossing with a General Control triggers Vehicle Access Restrictions in the Unitary Plan (Standard E27.6.4.1(1)).

7.2.3 Hotel pick-up and drop-off vehicle crossings on Customs Street West

The hotel pick-up and drop-off vehicle crossings will be located off Custom Street West.

The vehicle crossings have been designed to operate as a left-in-left-out arrangement, with the western vehicle crossing serving inbound traffic only and the eastern vehicle crossing serving outbound traffic only. The vehicle crossings have the following widths at the property boundary

- ◆ Western vehicle crossing – 4.1 m
- ◆ Eastern vehicle crossing – 4.6 m.

The distance between the two vehicle crossings is about 12.3 m, and will have a physical island separating the two vehicle crossings, as well as the pick-up and drop-off area from the footpath. The pick-up and drop-off area accommodates two pick-up and drop-off spaces and provides a passing lane to manoeuvre around parked vehicles and to use to pass by if the pick-up and drop-off spaces are occupied.

The vehicle crossing can accommodate vehicles similar to a 7.4 m Mercedes Sprinter XL passenger transporter with trailer (of up to 2.4 m) attached. The vehicle tracking is shown in Appendix I and shows a B85 car, 6.4 m van, 7.4 m passenger transporter, and trailer attached to the vehicle entering and exiting the vehicle crossings.

In addition, the existing limit lines and give-way markings will need to be shifted back to the western splay of the entry vehicle crossing, as shown in Appendix I. The intersection will continue to operate as it currently does, but this adjustment will provide better separation for vehicles giving way to those turning into the hotel pick-up and drop-off from Customs Street West.

We have assessed the updated vehicle crossing design against the Unitary Plan below

- ◆ Refer to section 7.2.1 above where we assess the number of vehicle crossings on the Custom Street West frontage. The number of vehicle crossings exceeds the threshold
- ◆ The vehicle crossings are at least 6 m apart and comply with the Unitary Plan's separation distance
- ◆ The widths of the vehicle crossings at the property boundary accommodate one-way vehicle movement. They exceed the maximum of 3.5 m and do not comply with the Unitary Plan design requirements. Appendix A includes our assessment against the relevant assessment criteria. In summary, we note that
 - The vehicle crossings have been designed to accommodate a 7.4 m passenger transporter to serve the hotel. A tour coach bus cannot be accommodated at the hotel pick-up and drop off
 - The vehicle crossings are angled to achieve a left-in, left-out operational nature
 - The pick-up and drop-off space is confined, and as such, vehicle speeds will be low entering and exiting the vehicle crossings
 - The physical island separating the pick-up and drop-off space from the footpath will minimise vehicle interaction with the public footpath
 - The hotel pick-up and drop-off space will be managed by the hotel
 - There is sufficient intervisibility between pedestrians and vehicles
 - Drivers of exiting vehicles have good visibility looking west along Customs Street West.

- ◆ Customs Street West is classified as an arterial road and is within 10 m of an intersection, meaning Vehicle Access Restrictions apply in the Unitary Plan (Standard E27.6.4.1(2) and (3)).

7.2.4 Assessment of vehicle access restrictions

In summary, vehicle access restrictions apply to all vehicle crossings, as Customs Street West and Quay Street are both classified as arterial roads in the Unitary Plan. Furthermore, Quay Street is subject to Vehicle Access Restrictions – General Control. Use of all accesses is a Restricted Discretionary Activity as outlined in Table E27.4.1 (A5) and (A6).

Please refer to Appendix A for our assessment against the Unitary Plan Restricted Discretionary Activity assessment criteria.

Taking into account our traffic effects assessments of the Development provided in Section 9, which assesses the traffic demands resulting from the Development through these accesses, we believe the proposed vehicle accesses can operate efficiently and safely.

We also note that the number and design of the Site's vehicle access will have positive transport effects compared to the existing situation, as the access and vehicle crossings associated with the existing Downtown Carpark will either be removed or replaced with smaller vehicle crossings in the case of the hotel pick-up and drop-off

- ◆ The redesign of the existing crossings on Customs Street West that currently provide access to and from the Downtown Carpark will provide a safer environment for pedestrians, noting that these are the only locations where pedestrian crashes have been recorded to have occurred over the past 5 years
- ◆ The removal of the signalised access associated with the Downtown Carpark's egress into Fanshawe Street results in improved efficiencies for cars and buses on Fanshawe Street travelling westbound
- ◆ The hotel pick-up and drop-off vehicle crossings will see much fewer vehicles travelling in and out of the Site on Customs Street West compared to the existing Downtown Carpark vehicle trips.

For the existing use of the Quay Street crossing

- ◆ As outlined above, the updated vehicle crossing design provides clearer delineation between vehicle and pedestrian areas and improved demarcation between the service lane and the M Social frontage
- ◆ The crash history at the Quay Street access shows that while there have been a small number of crashes, none have resulted in injuries of any type or severity
- ◆ The crash history illustrates that the shared space nature of this area has been operating safely with no reported injury crashes and a very low crash rate, despite the relatively high probability of vehicle and pedestrian conflicts in the area
- ◆ Therefore, despite several operational issues being observed, the crash history does not show any fundamental safety issues with the operation of the access.

For the use of the hotel pick-up and drop-off vehicle crossing off Customs Street West

- ◆ As outlined above, the vehicle access design has been developed to support safe and efficient hotel operations. The crossings are designed to accommodate a 7.4 m passenger transporter and are angled to operate on a left-in, left-out basis. The pick-up and drop-off area is compact, resulting in low vehicle speeds when entering or exiting. A physical median separates the drop-off space from the public footpath, reducing potential pedestrian–vehicle interaction. The pick-up and drop-off area will be actively managed by the hotel, and there is good intervisibility between pedestrians and vehicles, with clear sightlines to the west along Customs Street West for drivers exiting the site.

7.2.5 Service lane accessway assessment

The service lane will be modified to provide a continuous width of at least 5.85 m. This accommodates two-way vehicle movement and meets the minimum Unitary Plan requirement of a 5.5 m formed access width (Standard E27.6.4.3(1) and Table E27.6.4.3.2).

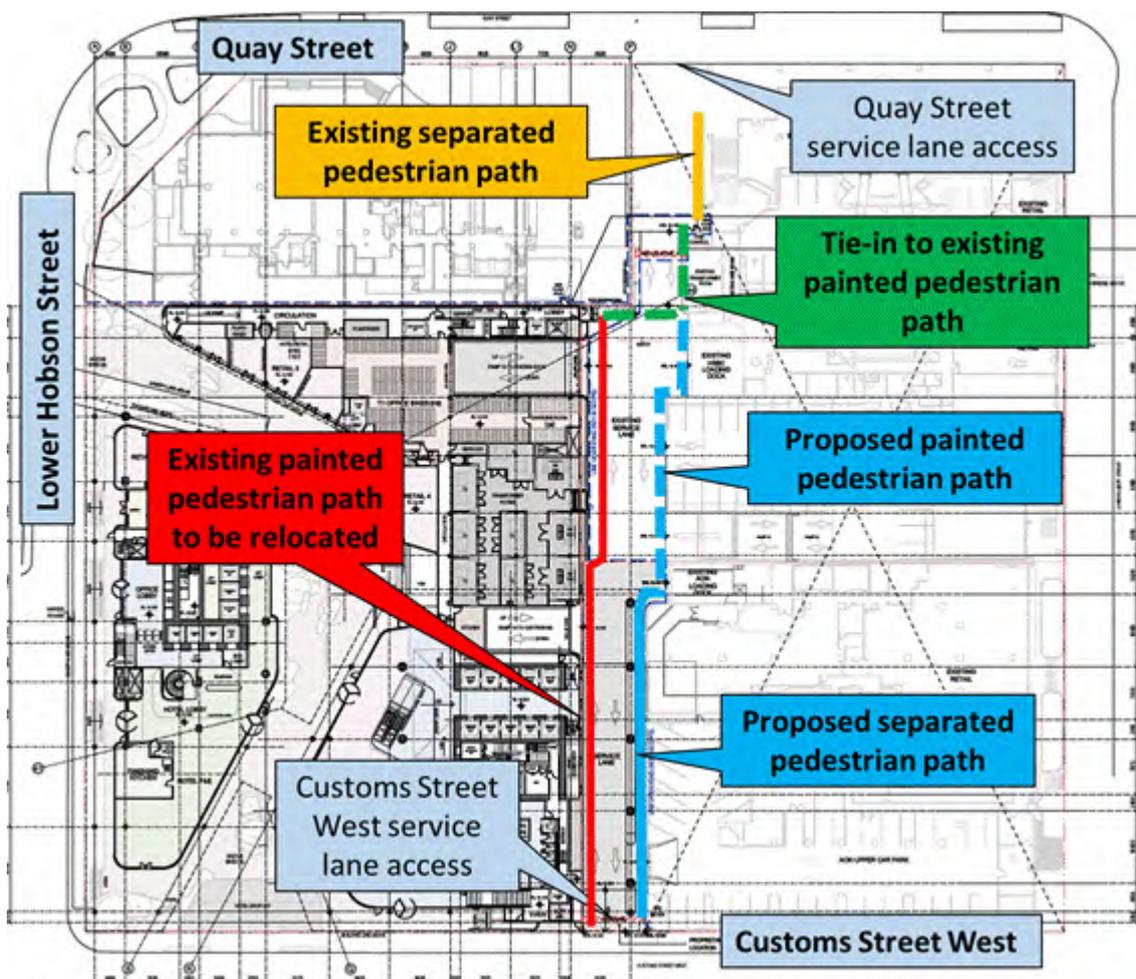
The layout of the service lane accommodates two-way car movement, as shown in Appendix E.

As shown in Figure 23, the service lane will include a marked path along the eastern side, replacing the currently marked path that is on the western side from Customs Street West, and transitions to the eastern side before the Quay Street access.

- ◆ The new painted path will be provided on the eastern side of the service lane, extending from Customs Street West to the existing AoN loading area
- ◆ This path will then connect to a new painted pedestrian path that continues along the eastern side, crossing the existing service lane area just north of the HSBC loading area
- ◆ The new painted path will then tie into the existing painted pedestrian path where it currently crosses to the western side, adjacent to the judder bar
- ◆ The outside section of the service lane path next to the HSBC building will remain as existing, with the pedestrian path separated by bollards.

These changes will provide continuous and safe pedestrian connectivity through the service lane. It is noted that this path is to mainly serve the needs of staff moving around loading dock areas, rather than being a primary pedestrian route. The public will have alternative routes that can be taken through the Development. Signage will be provided to minimise the use by the general public. Section 7.3 provides further information on how pedestrians will be able to access the Site and basement levels from areas other than the service lane and why pedestrians will be unlikely to use the service lane as a main route.

Figure 23: Proposed pedestrian path arrangement through the service lane



7.2.6 Changes to existing parking and loading on the service lane

Due to design changes in the service lane, 'loading dock south' shown previously in Figure 15 needs to be relocated. Sheet 4 of Appendix E shows 8.3 m truck tracking of the relocated loading dock position. While the truck needs to use the full width of the service lane to reverse into the loading dock, this is the same as the existing arrangement.

7.2.7 Assessment of vehicle access gradients

Gradients are provided as follows

- ◆ The ramps for the car parking areas have a gradient of 1 in 6 (16.7%). Transitions are provided at the top and bottom of these ramps, with a length of 2 m and gradient of 1 in 10 (10%). The change in gradients is within the limits where transitions are required
- ◆ The Customs Street West and Quay Street accesses have a 1 in 20 (5%) platform over a length of 6 m from the property boundary.

As such, all gradients comply with the Unitary Plan standards.

7.3 Access for pedestrians and cyclists

The Development will contain the following access provisions for pedestrians and cyclists

- ◆ On Level 00, the Customs Street West and Lower Hobson Street frontages will integrate with the public footpaths to pedestrians and cyclists to enter the Site. These areas will be accessible to the public. This provides connections to the activities, lobby areas and bicycle parking trips on the ground floor
- ◆ Lifts and stairs are provided on the ground floor to provide connectivity to other levels. Car parking and bicycle parking on basement levels will be accessed through these areas
- ◆ Level 01 provides internal public circulation from the Site to the AON and HSBC buildings. These circulation areas provide direct connections to Quay Street and Lower Albert Street
- ◆ Figure 24 and Figure 25 show that the Development will provide very good pedestrian and cycle connectivity in the east-west and north-south directions respectively
- ◆ For bicycle parking specifically, there are 3 proposed cycle storage areas within the Development, as shown in Figure 26.
 - The first office cycle storage facility located on Level B01 beneath T1/P1 and accessed via a dedicated bike lift and stair with cycle channel fixed for wheeling bikes up/down. Occupants can access the bike lift via level access from the south of T1 at Customs Street West. Showers and lockers are located at this level with access to the office floor via lifts
 - The second office cycle storage facility (which also includes a smaller area for secure hotel and retail cycle storage) is located at Ground Level / Level 00 beneath P3 and accessed via dedicated internal circulation along the north side of P3 from Lower Hobson Street. Accessible showers and lockers are located on Level 01 with access via stairs
 - Residential bike stores are located on Level B04. This can be accessed via lifts in the residential lobby from Lower Hobson Street
 - Handrails and other supporting features such as tactile ground surface indicators proposed along the Lower Hobson Street frontage will be located wholly within the subject site as required by Auckland Transport.

In summary, we consider the Development will be easily accessible by pedestrians and cyclists and will vastly improve connectivity through the Site for those using active modes of transport.

Figure 24: Proposed east-west pedestrian and cyclist connectivity (drawing by Warren and Mahoney)

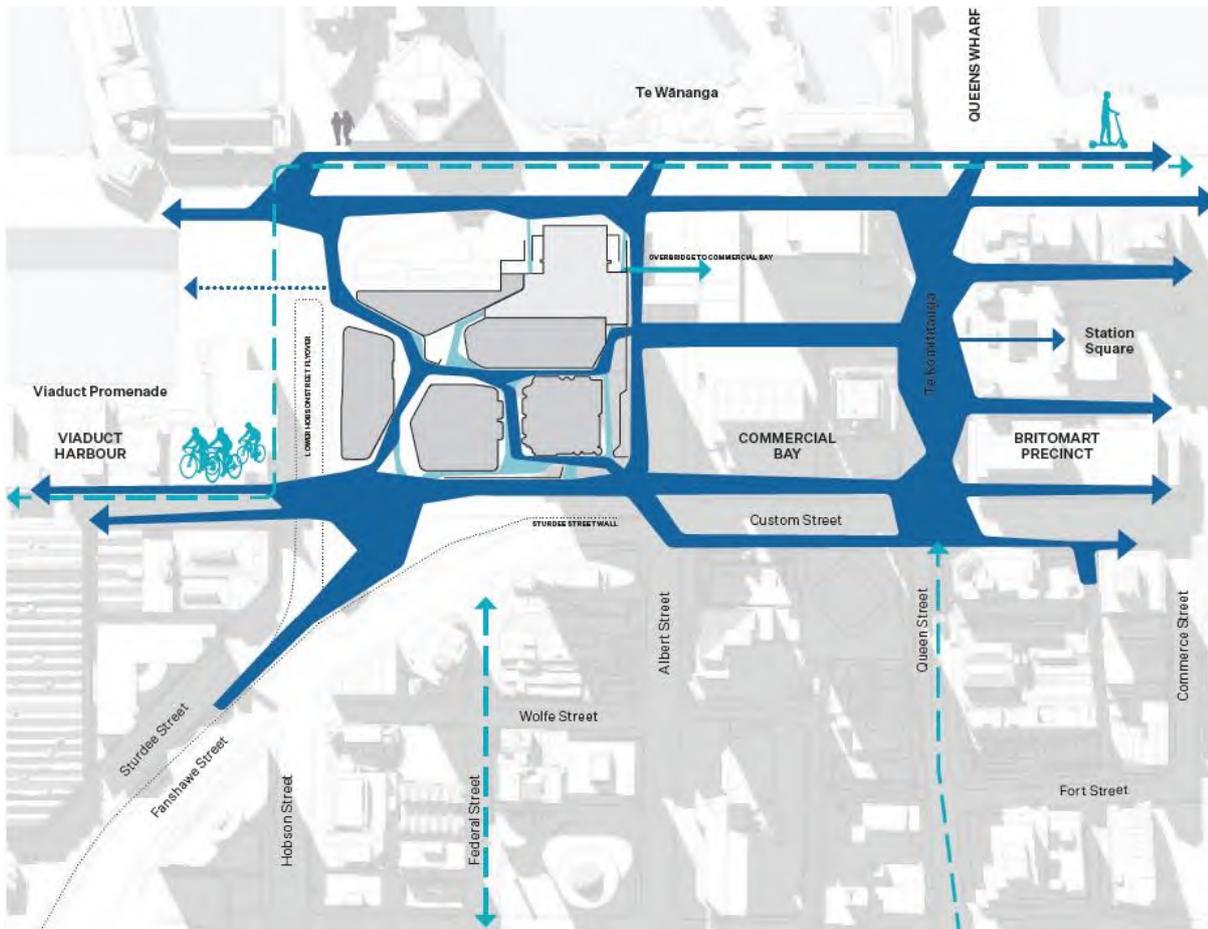
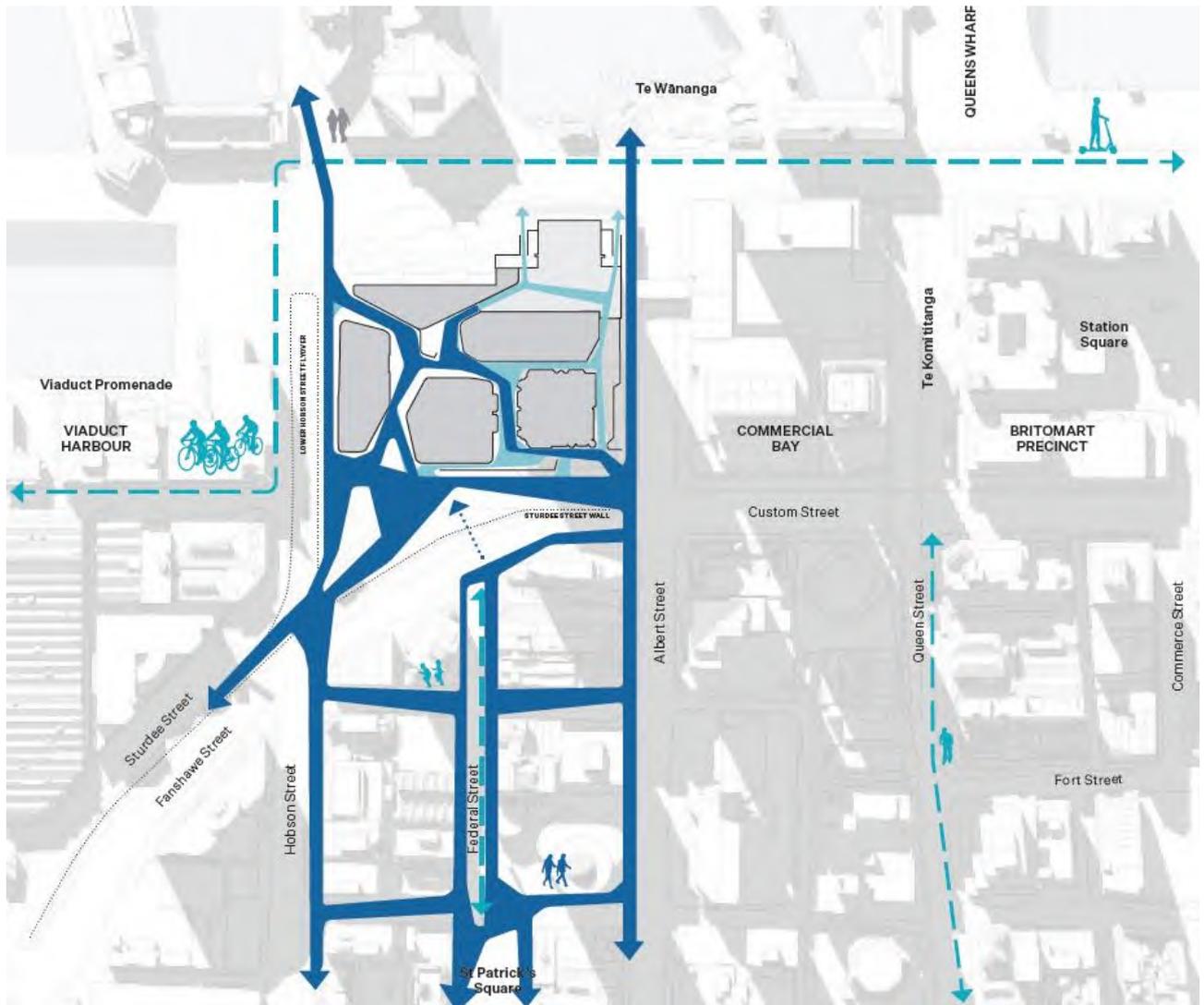


Figure 25: Proposed north-south pedestrian and cyclist connectivity (drawing by Warren and Mahoney)



8 THE DEVELOPMENT'S PARKING AND SERVICING FACILITIES

8.1 Parking for cars

8.1.1 Unitary Plan maximum car parking requirement

For activities in the Business–City Centre zone, the Unitary Plan (Standard E27.6.2(1) and Table E27.6.2.1) specifies maximum parking provision rates of

- ◆ Dwellings <75m² GFA, maximum of 0.7 per dwelling
- ◆ Dwellings ≥75 and < 90m² GFA, maximum of 1.4 per dwelling
- ◆ Dwellings ≥90m² GFA, maximum of 1.7 per dwelling
- ◆ Dwellings – visitor spaces, maximum of 0.2 per dwelling
- ◆ All other activities, 1 per 200m² GFA.

The maximum number of parking spaces permitted by the Unitary Plan for the Development is 769 spaces, as shown in Table 7 below.

Table 7: Unitary Plan car parking requirement assessment

Activities	Size	Maximum parking rates	Maximum parking spaces
Dwellings under 75m ²	42 units	0.7 per dwelling	29.4
Dwellings between 75 m ² and 90m ²	14 units	1.4 per dwelling	19.6
Dwellings greater than 90m ²	104 units	1.7 per dwelling	176.8
Dwellings – Visitor parking	160 units	0.2 per dwelling	32.0
All other activities (non-residential)	102,279 m ² GFA	1 per 200m ² GFA	511.4
Sub-total – residential dwellings, resident parking			258 (257.8)
Total permitted			770 (769.2)

8.1.2 Number of car parking spaces to be provided and assessment

A total of 463 parking spaces (inclusive of the 9 additional parking spaces discussed below) will be provided over 4 basement levels. Plans of each of these basement levels are shown in Appendix C.

We note that the architectural plans show 454 spaces. We have assessed the provision of the 9 additional parking space, which could be provided in place of water tanks. This is subject to finalising a wastewater solution with Watercare, which is addressed in the infrastructure assessment. For the purpose of this assessment, we have assumed these additional spaces will be allocated to the office activity.

The basement parking spaces will be allocated as follows.

- ◆ Up to 121 spaces will be allocated to the adjacent M Social site as off-site parking spaces

- ◆ 160 spaces for residents
- ◆ 170 spaces for offices and hotel valet parking
- ◆ 1 carwash space for residential use
- ◆ 2 facility management spaces
- ◆ 9 casual spaces for residential and office activities.

The hotel drop-off and pick-up area on Customs Street West will contain 2 short term parking spaces, which is in addition to the 463 basement parking spaces.

As such, the Development complies with the maximum Unitary Plan requirements.

We note that the spaces allocated to M Social (up to 121) are not part of the maximum parking requirements as this is classified as off-site parking. This is discussed in Section 8.1.4 below. We also note that even if the 121 M Social spaces were included, the total number of parking spaces at 463 spaces, the number of carparks provided is still below the maximum number of 770 parking spaces permitted under the Unitary Plan.

8.1.3 Accessible car parking provision and assessment

We have assessed the accessible parking requirements based on the standards before and after PC79 was introduced.

Not considering PC79

The pre-PC79 version of the Unitary Plan (provided in a link in E27.6.2) specifies that accessible parking is provided in accordance with “New Zealand Building Code D1/AS1 New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121-2001)”. These standards specify the following for the number of accessible parking spaces required, based on the total number of parking spaces required:

- ◆ 1 – 20 parking spaces: No less than 1 accessible parking space is required
- ◆ 21 – 50 parking spaces: No less than 2 accessible parking spaces are required
- ◆ Every additional 50 spaces: No less than 1 additional accessible parking space is required.

These accessible parking requirements apply to non-residential activities and based on the provision of 303 spaces for non-residential parking, 8 accessible spaces are required.

There will be 21 accessible spaces, which exceeds this requirement. These are provided throughout levels B04 to B01.

We note that if residential parking was included in the above accessible parking calculation (463 spaces total), then 11 accessible spaces would be required. With a provision of 21 accessible spaces, this requirement is again satisfied.

PC79 assessment

The PC79 accessible parking requirements and provisions are as follows. Further detail of the calculations for these requirements is provided in Appendix A.

- ◆ Residential - not less than 8 accessible parking spaces are required for the residential activity
 - E27.6.3.2(A) Table 2 specifies not less than 8 accessible spaces are required for 151 to 175 dwellings (160 dwellings are proposed).
- ◆ Office - not less than 40 accessible parking spaces are required for the office activity
 - E27.6.3.2(A) Step 1 assessment: The total theoretical parking demand is 1,933 spaces, based on a rate of 1 space per 45 m² GFA and a proposed office GFA of 87,000 m² GFA
 - E27.6.3.2(A) Step 2 assessment: The theoretical demand of 1,933 spaces is higher than the actual provision of 170 parking spaces for the office activity. As outlined in Table 1 of the standards, 1,933 spaces results in a requirement of not less than 40 accessible parking spaces.
- ◆ Retail - not less than 2 accessible parking spaces are required for the retail activity
 - E27.6.3.2(A) Step 1: the total theoretical parking demand is 47 spaces, based on a rate of 1 space per 25 m² GFA and a proposed retail GFA of 1,179 m² GFA
 - E27.6.3.2(A) Step 2: The theoretical demand of 47 spaces is higher than the actual provision of no parking spaces for the retail activity. As outlined in Table 1 of the standards, 47 spaces result in a requirement of not less than 2 accessible parking spaces.
- ◆ Hotel - not less than 5 accessible parking spaces are required for the hotel activity
 - E27.6.3.2(A) Step 1: The total theoretical parking demand is 200 spaces, based on a rate of 1 space per unit and 200 proposed units
 - E27.6.3.2(A) Step 2: The theoretical demand of 200 spaces is higher than the actual provision of up to 172⁸ parking spaces for the hotel activity. As outlined in Table 1 of the standards, 200 spaces result in a requirement of not less than 5 accessible parking spaces.
- ◆ Accounting for all activities, not less than 55 accessible parking spaces are required under PC79
- ◆ The proposed layout provides 21 accessible parking spaces in total, which does not meet the PC79 minimum requirements

While the allocation of accessible parking spaces will be determined at a later stage, we have assumed that the following allocation for the purposes of assessing the infringement

- ◆ Residential: 8 accessible spaces (complies)
- ◆ Offices: 13 accessible spaces (does not comply, 40 required)
- ◆ Retail: 0 accessible spaces (does not comply, 2 required)

⁸ This assumes all 170 spaces for office or hotel valet parking would be allocated to the hotel valet, plus 2 hotel drop-off spaces. We note that it is very unlikely that 170 spaces will be allocated to the hotel valet parking area, but we have assessed this as the maximum limit

- ◆ Hotel: 0 accessible spaces (does not comply, 5 required).

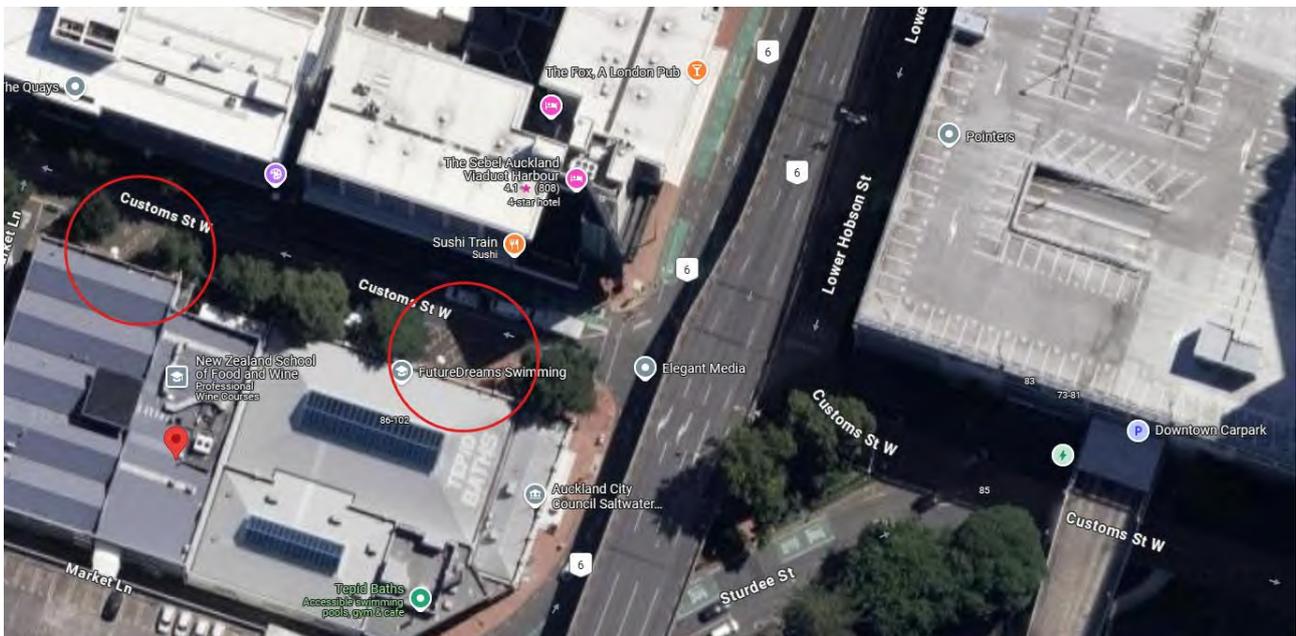
In summary, the accessible parking requirement is satisfied for residential, but not the office, retail or hotel activities.

We have provided an assessment against the applicable Plan Change 79 assessment criteria in Appendix A. We consider the shortfall of accessible parking spaces is acceptable because

- ◆ For the office activity
 - The office activity has a theoretical parking demand of 1,933 spaces, which is significantly higher than the actual provision of 170 office spaces. The “New Zealand Building Code D1/AS1 New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121-2001)” standard assesses accessible parking spaces on the actual provision of parking spaces. Based on 170 spaces, 5 accessible parking spaces would be required. This is achieved with the assumed provision of 13 accessible parking spaces
 - While NZS 4121:2001 compliance is achieved, we acknowledge that PC79 references a different approach, reflecting projected demographic changes, including an ageing population and increased mobility-impaired users. However, we consider that the specific context of the site and the proposed development justifies a tailored approach to accessible parking provision
 - The proposed office activity is supported by only 170 parking spaces, a significant reduction compared to the theoretical demand of 1,933 spaces, that is, only 8.8 % of the expected demand. The accessible parking supply must be viewed in this context
 - The Site benefits from a highly accessible central location, excellent public transport access (Quay Street and Lower Albert Street), and a mixed-use environment. These attributes fundamentally change the mode share and travel patterns of users compared to a typical standalone office development. In particular, the small number of total office parking spaces provided limits the potential demand for accessible parking
 - The 13 accessible spaces proposed are proportionate to the limited supply of office parking and satisfies the requirements as per NZS 4121:2001, the relevant Building Code standard. We also note that NZS 4121:2001 require a minimum of 5 accessible parking spaces based on a provision of 170 office spaces, whereas more than the minimum number of spaces for office users (13 accessible spaces) will be provided. This is considered sufficient to meet the needs of accessible users who are expected to drive to the Site taking into account projected demographic changes
- ◆ For the retail activity
 - No accessible parking is necessary for retail, as no on-site parking spaces will be allocated to the retail activity
 - This reflects the intended catchment and function of the retail spaces, primarily food and beverage offerings targeting a pedestrian-oriented City Centre customer base. It is not expected that users (including accessible users) will drive directly to the Site to visit these premises

- While no on-site accessible spaces are proposed for retail, there are four publicly available accessible spaces on Custom Street West, as shown in Figure 27, within close proximity of the Site. These can reasonably serve accessible users visiting either the office or retail tenancies
- ◆ For the hotel activity
 - No accessible parking for the hotel activity is proposed
 - While the 2 drop-off/pick-up spaces on Customs Street West are not technically accessible spaces, they can effectively function as accessible spaces (but still for pick-up and drop-off only, for example, a passenger with accessible needs). This is due to the available width in the pick-up and drop-off area for a vehicle, the flush surface treatments, and the ability to easily access the hotel lobby. Sufficient vertical clearance will also be provided. Furthermore, the pick-up and drop-off area will be managed throughout core business hours to which means assistance can be provided to any person with accessibility requirements
 - On the assumption that any hotel valet parking is provided in the basement, no accessible parking spaces will be allocated to this use. This is because these spaces will be used and managed by hotel staff members only, who will be regular users of the parking area.
 - Given that no dedicated on-site parking is proposed for hotel guests, other than valet parking and the pick-up and drop-off, we consider that no accessible parking spaces for the hotel activity are needed.

Figure 27: Accessible parking spaces in the vicinity of the Site on Customs Street West



Vertical clearances of accessible parking

We note that there will be infringement of the Unitary Plan standard for the required vertical clearances of accessible parking spaces. Refer to Section 8.1.7.

8.1.4 Off-site car parking provision and assessment

The M Social parking spaces (up to 121) are not related to activities within the Development and are considered off-site parking spaces. Off-site parking is classified as a Discretionary activity in the Unitary Plan (Table E27.4.1, (A16)).

These spaces will be used exclusively by the adjacent M Social site, which is located immediately north of the Development. We understand that the use of these off-site parking spaces is an existing arrangement with the Downtown Carpark, and as such, provision needs to be made in the Development.

The same number of spaces will be retained compared to the existing situation. Therefore, there will be no change in traffic effects due to this parking provision.

8.1.5 Car parking space dimensions and manoeuvring assessment

The number of car parking spaces by basement level and type is summarised in Table 8.

The different types of spaces include:

- ◆ Accessible: as outlined Section 8.1.3
- ◆ Facility management: designed as regular user spaces for staff members of the development, which are located within the loading area
- ◆ Regular: spaces designed for regular users such as residents and office staff members
- ◆ Casual: spaces which could be used by visitors who are not regular users
- ◆ Carwash: for residential use only, designed as a regular user space
- ◆ Small car: spaces that are only suitable for a smaller car, which will be assigned to regular users
- ◆ Tandem: parking spaces in a horizontally stacked configuration, with a second space being located behind the first.

Table 8: Number of car parking spaces by basement level and type

Level	Accessible	Facility management	Regular	Casual	Carwash	Small car	Tandem	Total
B04	5		135			2	7	149
B03	7		138			1	7	153
B02	8		133		1	1	7	150
B01	1	2		8				11
Total	21	2	406	8⁹	1	4	21	463

Tandem parking spaces could potentially be allocated to either units or office tenancies. This infringes Standard E27.6.3.3(3) which specifies that residential spaces may be stacked (but does not specify offices). While the exact parking allocated has not been determined at this stage, we have assessed this

⁹ While the site plans show 8 casual spaces, we have assessed 9 casual spaces for the purposes of assessing trip generation. The 9th space is the accessible space shown on Level B01, which is adjacent to the 8 other casual spaces

infringement to provide flexibility for the tandem spaces to be allocated to either the residential or office activities. If the spaces are allocated to offices, we consider these can be managed by allocating them to the same office tenancy. As the spaces will be used by regular users and by the same residential unit or office tenancy, use of the tandem spaces can be coordinated and managed appropriately.

Dimensions of all the parking spaces comply with the regular and casual user dimensions specified in the Unitary Plan (Standard E27.6.3.1 and Table E27.6.3.1.1), except for the 4 small car spaces.

- ◆ The majority of spaces are intended for regular users such as residents and staff members
- ◆ A small number of spaces on Level B01 could potentially be used by visitors, and are designed based on the casual user standards
- ◆ The majority of spaces are 90-degree parking spaces, with several parallel spaces included
- ◆ The Warren and Mahoney architectural drawings show the dimensions of all parking spaces and aisle widths. All spaces are at least 5.0 m long. The width of the spaces is noted within each space (i.e. R2.7 means a regular space with a 2.7 m width, C2.5 means a casual user space with a 2.5 m width)
- ◆ The 4 small car spaces do not meet the Unitary Plan requirements. These spaces have a 2.4 m width and a length of 4.7 m

The layout of the proposed car park spaces and a tracking assessment for an 85th-percentile car are shown in Appendix E. This tracking assessment shows that

- ◆ All parking spaces can be satisfactorily accessed
- ◆ The aisles, ramp and service lane layout can accommodate two-way car movement.
- ◆ Sheets 14 and 15 show vehicle tracking for the small car parking spaces. These have been assessed using a 50th percentile car, which shows that these can be satisfactorily accessed. As these spaces will be assigned to regular users, such as staff members or residents, they will be familiar with the space constraints of these spaces.

8.1.6 Parking gradients assessment

The Unitary Plan specifies the following maximum requirements for parking gradients.

- ◆ The gradient of any parking space must not exceed 1 in 20 (5%) for regular parking spaces and 1 in 25 (4%) for accessible parking spaces (Standard E27.6.3.6(3))
- ◆ The gradient for manoeuvring areas must not exceed 1 in 8 (12.5%) (Standard E27.6.3.6(4)).

Gradients are provided as follows.

- ◆ All parking spaces and manoeuvring areas are contained within the basement and are flat
- ◆ The ramps for the car parking areas have a gradient of 1 in 6 (16.7%). Transitions are provided at the top and bottom of these ramps, with a length of 2 m and gradient of 1 in 10 (10%). The change in gradients is within the limits where transitions are required
- ◆ The loading bay ramp has a gradient of 1 in 8 (12.5%), which will accommodate heavy vehicles

- ◆ The Customs Street West and Quay Street accesses have a 1 in 20 (5%) platform over a length of 6 m from the property boundary.

As such, all gradients comply with the Unitary Plan standards.

8.1.7 Assessment of car vertical clearances

The Unitary Plan specifies the following minimum vertical clearance requirements as follows (Standard E27.6.3.5)

- ◆ 2.1 m where access and/or parking for cars is provided for residential activities
- ◆ 2.3 m where access and/or parking for cars is provided for all other activities
- ◆ 2.5 m where access and/or accessible parking for people with disabilities is provided
- ◆ 3.8 m where loading is required.

Appendix D provides vertical clearance profiles of the parking and access areas, prepared by Warren and Mahoney. These profiles show the following vertical clearances are provided:

- ◆ The carpark ramp entrance has a clearance of 2.4 m, and the ramp provides at least 2.3 m of clearance. This meets the Unitary Plan requirements for car access
- ◆ The south end of the service lane between Customs Street West and the carpark entrance has a clearance of at least 2.9 m. This meets the Unitary Plan requirements for car access
- ◆ While not shown in Appendix D, the parking areas will meet the Unitary Plan vertical clearance requirements for regular car access
- ◆ The loading area access and ramp have a clearance of 3.8 m, satisfying the requirements where loading is required
- ◆ The vertical clearance of the service lane between the carpark entrance and Quay Street is 3.6 m. This does not meet the Unitary Plan requirements as loading vehicles will require access through this area. We note that this is an existing feature of the service lane, and these vertical clearance restrictions currently apply. Refer to Section 8.4.2 for further discussion.

For accessible parking, we note the following

- ◆ The Unitary Plan requires 2.5 m where access and/or accessible parking for people with disabilities is provided. This is not provided for access to the accessible spaces, as areas of the basement provide 2.3 m of vertical clearance
- ◆ We have considered 2 design standards for the vertical clearance of accessible parking spaces.
 - NZS 4121:2001 Design for Access and Mobility – Buildings and Associated Facilities
 - Refer to Figure 28 for a diagram of the clearance envelope
 - This specifies 2.5 m of vertical clearance to be maintained from the vehicle entry to the carpark. This reflects the Unitary Plan requirement of 2.5 m vertical clearance for the parking space and access areas, and is not provided
 - The front of the parking space can have a lower vertical clearance for ducting or other purposes

- The intention of this standard is to provide space for a wheelchair during hoist operations
- AS/NZS 2890.6:2009 Parking Facilities: Part 6: Off-street Parking for People with Disabilities
 - Refer to Figure 29 for a diagram of the clearance envelope
 - This specifies a minimum vertical clearance of 2.2 m from the vehicle entry to the parking space. This is achieved with the basement design
 - The front of the parking space can have a lower vertical clearance
 - Again, the intention of this standard is to provide space for a wheelchair during hoist operations, but it is assumed the wheelchair will be hoisted on top of the car once it is parked, and not mounted while it is accessing the parking space from the entrance.
- ◆ For access areas to the accessible spaces
 - The Unitary Plan and NZS 4121:2001 specify 2.5 m of vertical clearance, whereas AS/NZS 2890.6:2009 specify 2.2 m
 - As 2.3 m is proposed, we consider this is acceptable as it meets the AS/NZS 2890.6:2009 standard
- ◆ For the vertical clearance of the accessible parking spaces
 - Refer to Appendix D which provides vertical clearance profiles for all of the accessible parking spaces on each level, based on the NZS 4121:2001 and AS/NZS 2890.6:2009 standards
 - The profiles are provided for three areas where accessible parking is generally provided within the basement parking levels (gridline J to K, gridline H to J, gridline D to F). We summarise each of these areas below
 - Gridline J to K
 - Overhead structural elements fall within the accessible parking clearance profiles for both standards over an area of 227 mm by 1105 mm. We note that the clearance envelope under the NZS 4121:2001 standard will work if a car reverses into the parking spaces. These accessible parking spaces will apply for regular users
 - Gridline H to J
 - Overhead structural elements fall within the accessible parking clearance profiles for both standards over an area of 190-235 mm by 395 mm. We note that the clearance envelope under both standards will work if a car reverses into the parking spaces. These accessible parking spaces will apply for regular users
 - The accessible parking space on Level B01 will have a vertical clearance profile to meet both standards. This space can be used by casual users
 - Gridline D to F

- Overhead structural elements fall within the accessible parking clearance profiles for both standards over an area of 980-1450 mm by 100 mm. We note that the clearance envelope under the NZS 4121:2001 standard will work if a car reverses into the parking spaces. These accessible parking spaces will apply for regular users
 - In summary, all of the accessible spaces that are assigned to regular users will not meet the vertical clearance profiles under both standards. However, if a car reverses into these spaces, then the clearance profile under NZS 4121:2001 will be sufficient
 - We consider this infringement to be acceptable because the accessible spaces on Levels B02 to B04 will be allocated to regular users (either office staff members or residents), who will be familiar with the clearance limitation. As the regular users will be familiar with the clearance limitation, they will be able to use a suitable wheelchair hoist mechanism.
- ◆ In summary, the accessible parking spaces do not provide the required vertical clearance under the Unitary Plan. However, we consider the infringements are acceptable as they will be used by regular users and have alignment with accessible parking design standards.

Figure 28: NZS 4121:2001 accessible parking clearance envelope

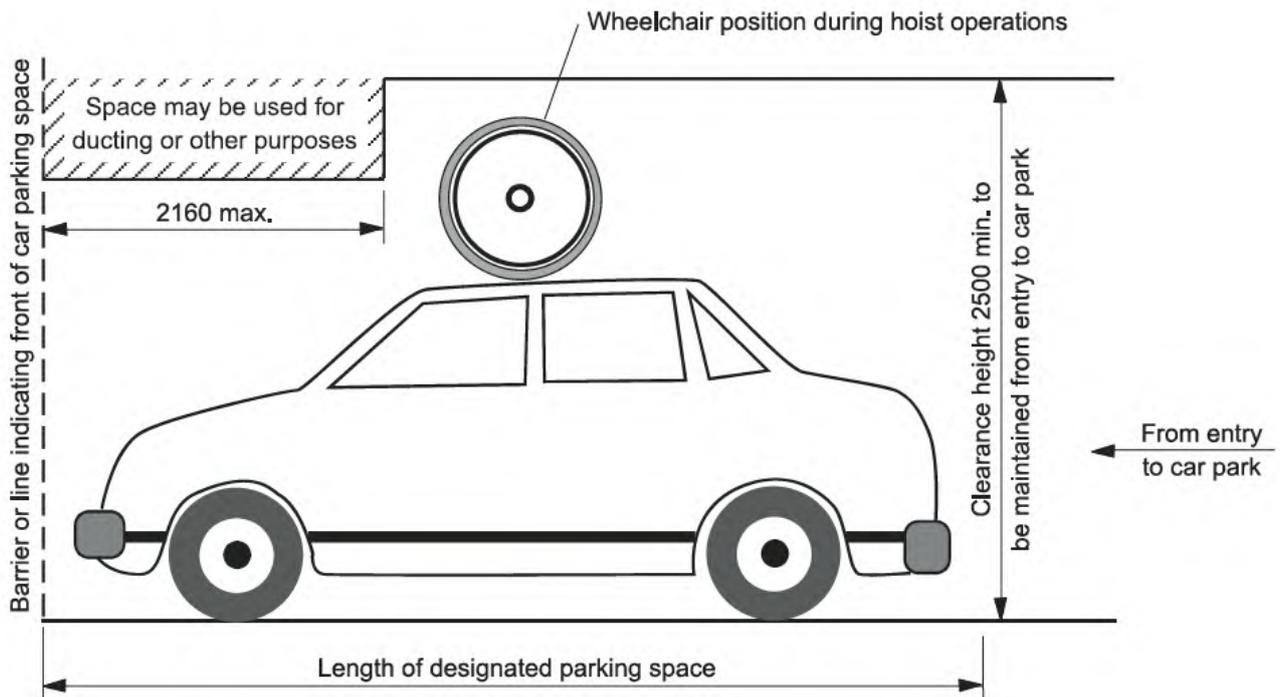
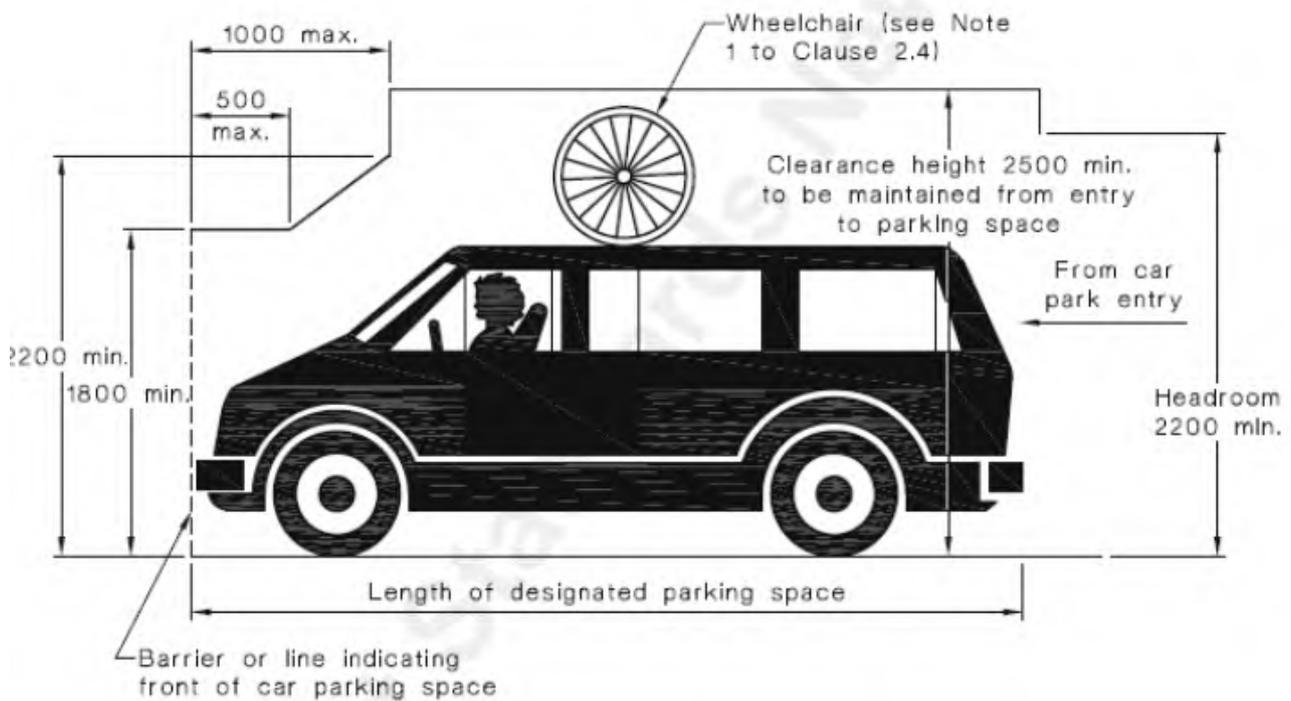


Figure 29: AS/NZS 2890.6:2009 accessible parking clearance envelope



In summary, the vertical clearances comply with the Unitary Plan, where car access is provided but not where loading is required, or for accessible parking spaces. Section 8.4.2 provides further detail and assessment of the infringement for loading vertical clearances and the resulting loading strategy.

8.2 Parking for bicycles

8.2.1 Unitary Plan bicycle parking requirements

The Unitary Plan specifies the following minimum bicycle parking requirements for the proposed activities (Standard E27.6.2(6) and Table E27.6.2.5)

- ◆ Residential activities to have a minimum of
 - 1 visitor (short-stay) space per 20 dwellings
 - 1 secure (long stay) per dwelling without a dedicated garage. PC79 also specifies no secure space is required where a basement parking space is provided, which would apply in this case. To be conservative, we have assumed each dwelling will need a secure bicycle parking space
- ◆ Offices with GFA greater than 10,000 m² GFA to have a minimum of
 - 10 visitor (short-stay) spaces plus 1 space per 2,000 m² GFA over 10,000 m²
 - 1 secure bicycle parking per 300 m² GFA office
- ◆ Food and beverage retail activities with GFA greater than 350 m² GFA of
 - 1 visitor (short-stay) space per 350 m² GFA
 - 1 secure bicycle parking per 300 m² GFA

- ◆ All other retail activities with GFA greater than 500 m² GFA up to 5,000 m² GFA to have a minimum of
 - 1 visitor (short-stay) space per 500 m² GFA
 - 1 secure bicycle parking per 300 m² GFA of office
- ◆ Hotel (Visitor accommodation and boarding houses) to have a minimum of
 - 1 visitor (short-stay) space plus 1 space per 20 rooms/beds
 - 1 secure bicycle parking per 10 FTE employees.

Table 9 summarises the minimum number of bicycle parking spaces required for the Development. We have conservatively assumed all retail will be food and beverage, as these have higher bicycle parking requirements compared to 'all other retail.' For the purposes of this assessment, 100 FTE employees for the hotel has been assumed, noting that a hotel operator has not been appointed.

In summary, a minimum of 71 visitor (short-stay) spaces and 464 secure (long-stay) spaces are required.

Table 9: Minimum Unitary Plan bicycle parking requirements

Activities	Size	Minimum bicycle parking requirements	
		Visitor (short-stay)	Secure (long-stay)
Residential	160 units	8.0	160.0
Offices (commercial)	87,000 m ²	48.5	290.0
Retail – food and beverage	1,179 m ²	3.4	3.9
Hotel (visitor accommodation and boarding houses)	200 rooms 100 FTE employees	11.0	10.0
Total		71 (70.9)	464 (463.9)

8.2.2 Bicycle parking provision and assessment

The number of bicycle parking spaces by basement level and type are summarised in Table 10.

In summary, the number of bicycle parking spaces meets the minimum Unitary Plan visitor (short-stay) requirements and exceeds the secure (long-stay) requirements.

We note that while the hotel and retail secure areas are combined, they will collectively provide sufficient spaces to meet the minimum requirements for each activity.

Table 10: Number of bicycle parking spaces by level and type

Level	Visitor (short-stay)	Secure (long-stay)			
		Resident	Office	Hotel/Retail	Total
B04		160			160
B03					0
B02					0
B01			104		104
Level 00	12		316	14	330
Level 01	82				0
Total	94	160	420	14	594

8.3 End-of-trip facilities requirements and assessment

End-of-trip facilities are required in the Unitary Plan (Standard E27.6.2(7) and Table E27.6.2.6) to support office activities.

Based on the provision of 87,000 m² GFA of office activities, the Unitary Plan requires 24 showers and changing areas with space for storage of clothing.

Level 01 and B01 contain 38 showers to meet the Unitary Plan requirements. Furthermore, 388 lockers are provided near the showers which can be used for storage of clothing.

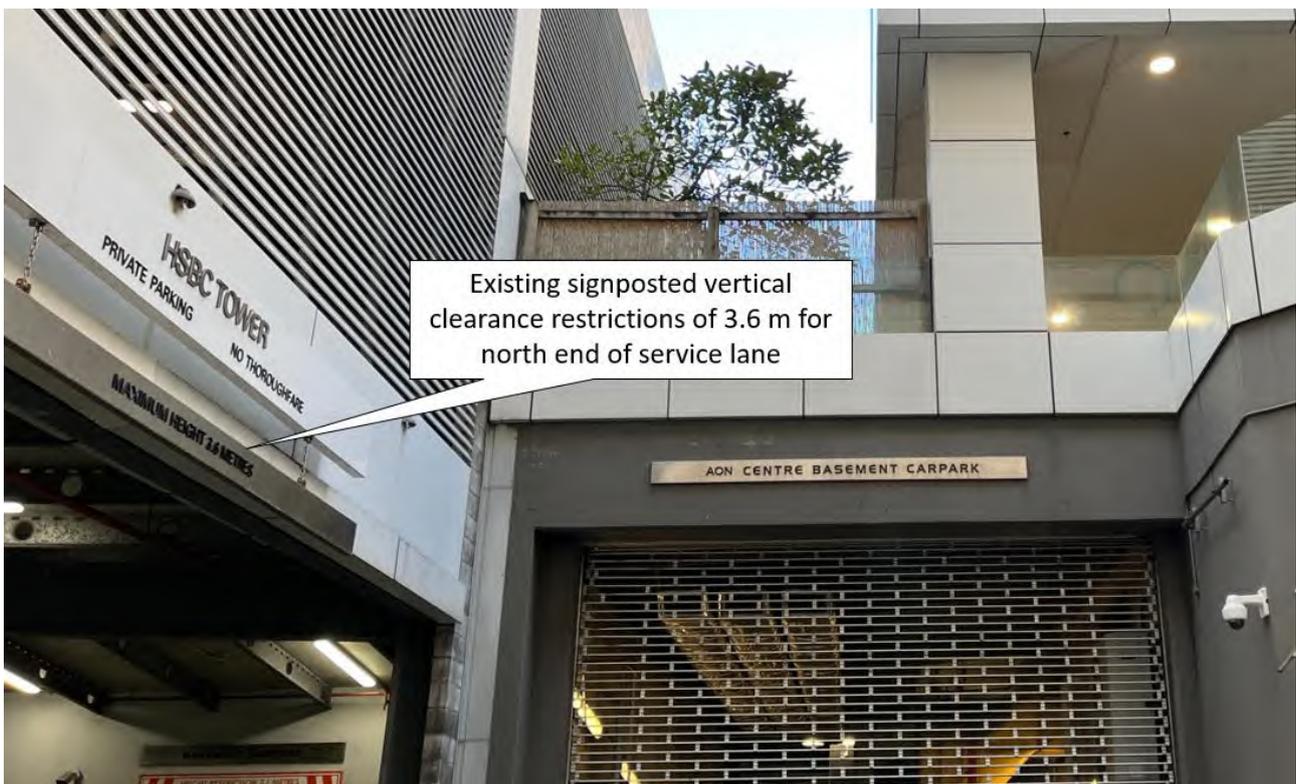
8.4.2 Vertical clearance for servicing vehicles and resulting servicing strategy

As outlined in Section 8.1.7, the following assessment relates to where servicing vehicles require access, taking into account that the Unitary Plan requires vertical clearances of 3.8 m associated with loading facilities.

Vertical clearances on the Site associated with servicing operations are as follows.

- ◆ The south end of the service lane between Customs Street West and the entrance to the basement car parking has a clearance of at least 2.9 m due to the design on the podium level above
- ◆ The loading area access and ramp have a clearance of 3.8 m, satisfying the requirements where loading is required
- ◆ The vertical clearance of the service lane between the entrance to the basement car parking and Quay Street is 3.6 m. We note that this is an existing feature of the service lane, and these vertical clearance restrictions currently apply. The existing signposted vertical clearance restriction of 3.6 m is shown in Figure 31.

Figure 31: Sign posted vertical clearance restriction of 3.6 m on existing service lane



These vertical clearance restrictions mean that

- ◆ most trucks will not be able to access the Site via the southern section of the service lane (between Customs Street West and the entrance to the basement car parking) due to the 2.9 m clearance. We note that vans may be able to use this access, as they typically have a height of up to 2.5 m
- ◆ due to the limitations at the south end of the service lane, trucks will need to enter and exit the Site via Quay Street

- ◆ while the internal loading area will have a vertical clearance of 3.8 m, the main constraint is the existing vertical clearance at the south end of the service lane. There are currently signposted vertical clearance restrictions of 3.6 m, due to overhead structures and services. These clearances will mean that taller trucks will be restricted from accessing the Development's loading area.

We note that the vertical clearance restriction at the north end of the service lane is an existing situation. Trucks already access this area while using the existing loading docks on the service lane. Figure 32 shows one of the existing loading docks on the service lane which has a sign posted 3.4 m vertical clearance restriction. This provides evidence that loading can take place in the service lane with overall vertical clearance restrictions of 3.4 – 3.6 m. Therefore, there is no change from existing, other than an increase in demand for loading vehicles.

Figure 32: Existing service lane loading dock with 3.4 m vertical clearance restriction



To manage the effects of the Development's vertical clearance restrictions, we recommend that a Servicing and Loading Management Plan be provided to ensure that all servicing vehicles that access the Development comply with the necessary vertical clearance restrictions. The Servicing and Loading Management Plan will include, but not be limited to

- ◆ The loading dock will be managed by a Dock Manager located at the proposed loading dock
- ◆ To book a parking space within the dock will be via an automated booking system such as 'Mobile Dock'. This is currently used for the existing loading spaces in the service lane and Commercial Bay. This system manages any queuing-related issues by booking spaces and lengths of time for loading vehicles
- ◆ The system is integrated with access control & CCTV systems, allowing license plate recognition to navigate any potential security barriers with an approved booking
- ◆ The booking system will make the user aware of the vertical clearance restrictions. Any vehicles that are unable to enter from Customs Street West due to the vertical clearance restriction of 2.9 m must enter and exit via Quay Street

- ◆ Procedures for unexpected deliveries.

The Servicing and Loading Management Plan system will be able to cater for any unexpected deliveries. On occasion, unexpected deliveries occur at both the service lane and Commercial Bay. If these situations occur, the service vehicle is booked in at the time or turned away until a space is available.

Based on the use of this system at Commercial Bay, there are very low servicing trips during weekday peak periods. These trips primarily occur during off-peak periods to avoid peak-period congestion during weekdays. This is reflected in our trip generation assessment for servicing vehicles, outlined further in Section 9.2.

8.4.3 Vehicle tracking assessment of loading vehicles

The Development has been designed to accommodate trucks up to 8.3 m in length.

All the proposed loading bays are 3.6 m wide and 8.4 m long. These designs meet the Unitary Plan loading space size requirements outlined in Standard E27.6.3.2 and Table E27.6.3.2.1.

We have provided a vehicle tracking assessment in Appendix E of the operation of the loading spaces and the service lane.

- ◆ The loading area is separated from other parking areas and has a dedicated ramp entrance from the service lane
- ◆ The layout of the loading ramp and loading bays ensures that no reversing onto the service lane or external road network is required
- ◆ Near the bottom of the ramp, only 1 truck will be able to turn at the 90-degree bend. There will be visibility available between the loading area and the ramp, which will allow trucks to give-way to each other if there is an inbound vs outbound truck
- ◆ The loading spaces are designed for a truck to reverse into the space so that it can unload on platforms at the end of each space. Trucks can exit the loading spaces in a forward direction
- ◆ Due to the servicing strategy outlined in Section 8.4.2, all trucks will need to enter and exit via Quay Street
 - As shown in Sheet 3 of the vehicle tracking, a truck can enter the loading area while passing a car on the service lane
 - Sheet 3 also shows that a truck exiting the loading area and turning left towards Quay Street will use almost the full width of the service lane. This is due to an existing pinch point in the service lane between a transformer room and the M Social building. This means that outbound trucks will need to give-way to any inbound vehicle at this section of the service lane. To mitigate this, a convex mirror has been proposed, refer to the location in Figure 33 and Figure 34. A loading dock booking system, through the implementation of a Servicing and Loading Management Plan, can also schedule truck movements to minimise movements during busy periods.

Figure 33: Proposed convex mirror location

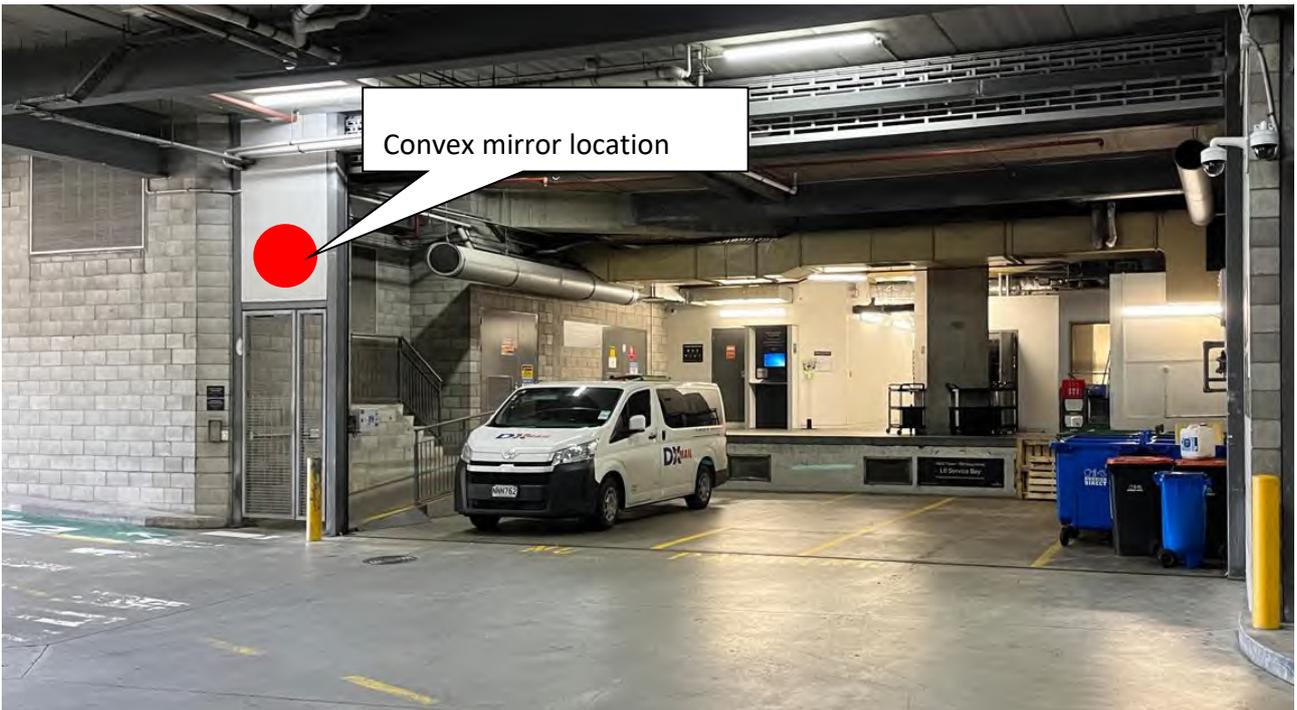
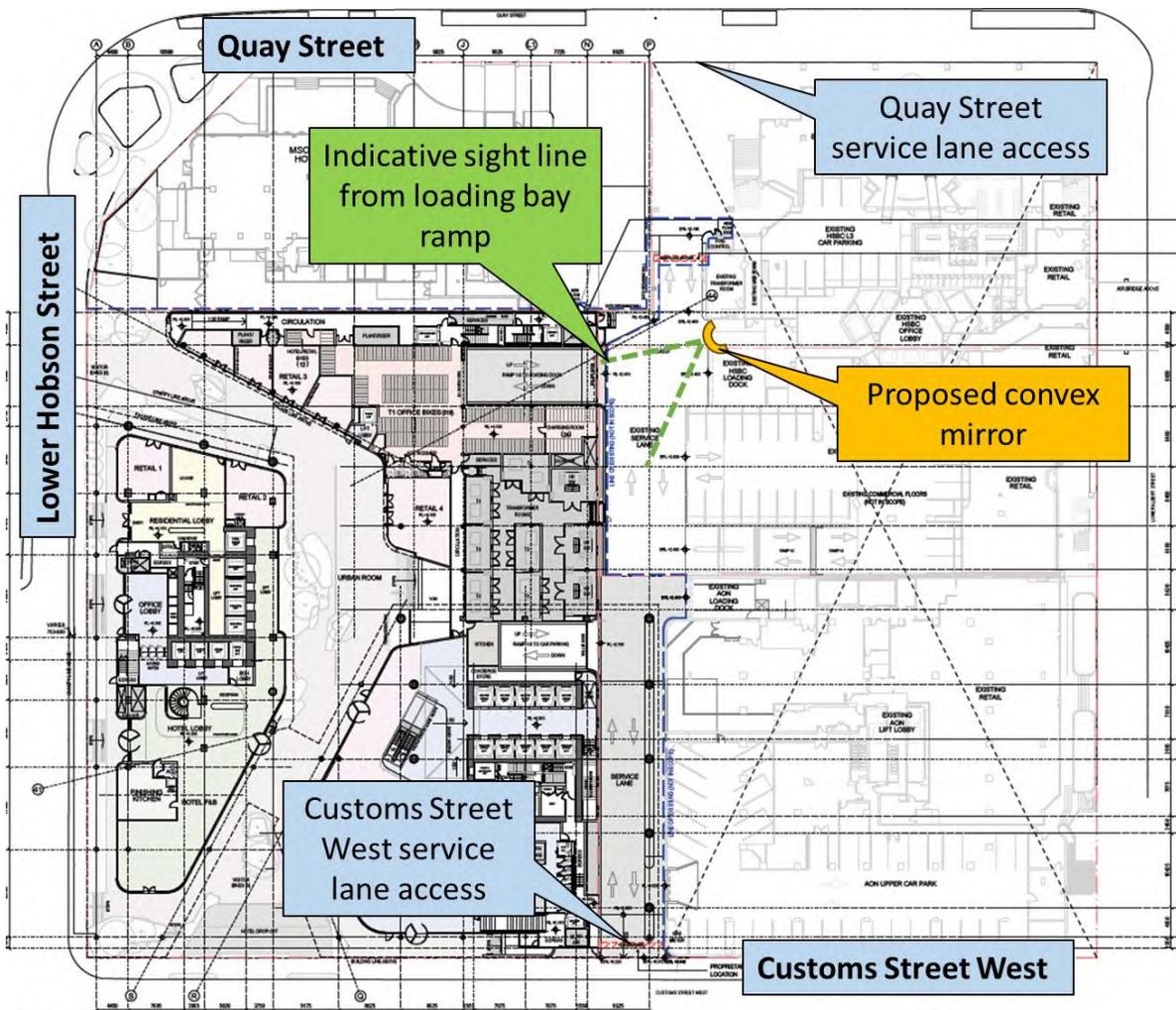


Figure 34: Proposed convex mirror location in plan view



9 TRAFFIC EFFECTS OF THE DEVELOPMENT

9.1 Unitary Plan traffic generation and assessment requirements

Standard E27.6.1(2) of the Unitary Plan specifies that a development in the Business–City Centre Zone is exempt from the Trip Generation standard (E27.6.1(1)). As such, typically, any development in this zone does not require a detailed traffic assessment to be undertaken.

Despite the Development being exempt from any Unitary Plan requirement to undertake a traffic assessment, Auckland Transport and Auckland Council, through the pre-application process, have requested that this be undertaken so that the traffic effects on the efficiency and safety of the surrounding road network resulting from the Development can be understood (i.e., use of the Development’s access points).

As such, the following traffic assessment

- ◆ determines the AM and PM peak hour traffic generation of the Development
- ◆ assesses the AM and PM network traffic effects of the Development using SATURN traffic modelling software
- ◆ assesses the predicted operation of the Development’s Quay Street and Customs Street West accesses during the AM and PM peak hours using SIDRA traffic modelling software.

SATURN is primarily used as a tool to assess the traffic effects of traffic assignment on a road network. To undertake a more detailed modelling assessment at accesses and nearby intersections, we have also used the SIDRA modelling software.

9.2 The Development’s predicted traffic generation

9.2.1 Trip generation rates

The following weekday peak hour vehicle trip rates are applicable to the Development.

As the number of parking spaces will be limited and will primarily be allocated, we have based our trip generation assessment on a per car park basis.

Residential dwellings

For residential dwellings, we have adopted rates from the RTA guidelines¹⁰.

These guidelines provide rates for residential developments surveyed in the Sydney metropolitan area, with all of the developments being

- ◆ close to public transport
- ◆ greater than 6 storeys

¹⁰ The Road and Traffic Authority of New South Wales (RTA), *Guide to Traffic Generating Developments, Version 2.2, 2002 & Guide to Traffic Generating Developments, Updated traffic surveys, 2013.*

- ◆ primarily residential in nature.

These features all apply to the proposed Development.

- ◆ We note that once the City Rail Link project is completed, the Site will have further improved access to public transport. The Site is already located close to the Waitemata Station and served by multiple bus services
- ◆ While the proposed Development also contains office and retail/ restaurant activities, these rates were based on developments primarily residential in nature. This is still appropriate to use, as we are applying this trip generation rate to parking allocated to residents only.

These RTA guidelines provide trip generation rates for residential dwellings on a per parking space basis as follows.

- ◆ AM peak hour: 0.15 trips per parking space
- ◆ PM peak hour: 0.12 trips per parking space.

These rates reflect that the majority of residents who own a car parking space will not travel during peak periods. The Site's location in the City Centre, close to public transport and other activities, means that residents are not reliant on car travel during peak periods.

Offices

To determine the vehicle trip generation for the Development's office activities, we have undertaken traffic surveys of the adjacent Commercial Bay site.

- ◆ Commercial Bay is operated by Precinct Properties (who is the Applicant for this Development) and is located 100 m east of the Site. As such, the trip characteristics for offices will represent the Development well
- ◆ Commercial Bay has 274 fully allocated parking spaces for offices. This means that a per carpark trip generation rate can be calculated from the survey data.

For the surveys and trip generation rates

- ◆ We undertook surveys on Tuesday 19 and Wednesday 20 November 2024
- ◆ The peak hour traffic generation of the office parking spaces was recorded as follows
 - AM peak hour:
 - Tuesday: 88 vehicles per hour
 - Wednesday: 79 vehicles per hour
 - PM peak hour:
 - Tuesday: 76 vehicles per hour
 - Wednesday: 64 vehicles per hour
- ◆ The results show that the Tuesday counts were higher than the Wednesday counts
- ◆ Based on a full allocation of 274 office parking spaces, the peak hour trip generation rates for Commercial Bay are as follows

- AM peak hour rate: 0.32 trips per hour per parking space
- PM peak hour rate: 0.28 trips per hour per parking space.

M Social

The trips associated with the 121 M Social parking spaces exist as part of the Downtown Carpark. A maximum of 121 parking spaces will be provided as part of the Development. Therefore, there will be no change in the volume of trips for M Social compared to the existing one.

For the purposes of undertaking the modelling, we have assumed a trip generation rate for these parking spaces. We have adopted the office trip generation rate, as we consider a rate based on a fixed number of parking spaces to be appropriate.

Casual spaces for office and residential

The Development will provide 9 pick-up/drop-off spaces on Level B01, which is inclusive of an accessible space. These spaces will be available for visitors of the office or residential activities. They are not intended to be available as spaces for all members of the public.

We note that there are no published trip generation rates available for casual user spaces in this specific context, as this would vary on many factors such as the conditions of use, the activities it serves, the location and the number of spaces available. As such, we have estimated the trip generation based on a first principles assessment, for the purposes of undertaking a traffic modelling assessment.

We have assumed that during peak hours, each casual space will generate 6 trips per hour per space (3 inbound, 3 outbound).

- ◆ This assumes a turnover rate of 1 space per 20 minutes
- ◆ For the 9 casual spaces, this would result in 54 trips during peak hours
- ◆ We consider this is conservative, as it assumes these casual spaces will be fully utilised throughout peak periods, and have a high turnover rate.

Hotel pick-up and drop-off spaces

To determine the vehicle trip generation for the Development's hotel pick-up and drop-off area, we have undertaken traffic surveys of the pick-up and drop-off area at the adjacent M Social hotel site.

- ◆ The M Social hotel has 190 rooms, which is very similar to the 200 rooms proposed for the Development
- ◆ Given the similar number of rooms and being located in the same area, we consider this provides relevant data to assess hotel pick-up and drop-off trip generation for the Development
- ◆ The M Social hotel also includes valet parking services, so these trips are inherently included in the existing use of the pick-up and drop-off area.

For the surveys and trip generation rates

- ◆ We undertook surveys of both M Social vehicle crossings serving the pick-up and drop-off area on Tuesday 6 May 2025

- ◆ The peak hour volumes at the M Social pick-up and drop-off area were recorded as follows
 - AM peak hour: 23 vehicles per hour (inbound and outbound)
 - PM peak hour: 18 vehicles per hour (inbound and outbound)
- ◆ We note that while these results are for the AM and PM weekday peak periods, the surveys also included interpeak periods. The profile of vehicle trips was relatively flat throughout the day, and the highest number of hourly trips occurred during the AM peak hour. Therefore, there is not expected to be any significant increase in the use of the pick-up and drop-off area outside of peak periods
- ◆ To account for potential seasonal variation in the traffic surveys, we have applied a factor of 120% to the survey data to assess the potential number of trips using the pick-up and drop-off area for the Development. As such, we have adopted the following peak hour volumes for the hotel pick-up and drop-off area
 - AM peak hour: 28 vehicles per hour (inbound and outbound)
 - PM peak hour: 22 vehicles per hour (inbound and outbound).

Hotel valet parking spaces

We have obtained hotel valet parking data of the Intercontinental Hotel, which has a parking area located within Commercial Bay.

- ◆ The Intercontinental Hotel is located east of the Site at 1 Queen Street, and contains 139 rooms
- ◆ 28 spaces are available for hotel valet parking inside the Commercial Bay parking area.

The data we have been provided includes the following

- ◆ All inbound vehicle movements into the parking area. No outbound data is available, although the total vehicle movements are likely to be double of the inbound data
- ◆ The period from March to August 2025 (inclusive).

The results of the hotel valet data are summarised as follows

- ◆ The average inbound movements is around 10 vehicles per day
 - This ranges from 6 to 12 inbound movements per day when considering each month separately
 - The weekday average is around 9 inbound movements per day and the weekend average is around 12 inbound movements per day
 - The maximum movements in any one day was 31 inbound movements per day, which occurred over a weekend. The minimum was no movement
- ◆ Using an average profile over a day, the highest amount inbound valet movements occurs between 1 pm to 8 pm. This likely coincides with hotel check-in periods. On average, this equals around 2 inbound valet movements per hour, which we consider is very low. It is also likely that a similar pattern occurs for check-out times in the morning period for outbound valet movements

- ◆ In summary, the surveys show that the number of valet movements is low on a daily and hourly basis using the Intercontinental Hotel as an example.

For the purposes of undertaking a traffic modelling assessment, we have assumed that every vehicle trip coming to and from the proposed hotel pick-up and drop-off area on Customs Street West will be a valet trip, and therefore access the basement parking area.

- ◆ As assessed earlier in this section, this corresponds to 28 vehicles per hour in the AM peak and 22 vehicles per hour in the PM peak
- ◆ This is very conservative, as not all of the pick-up and drop-off trips will be associated with valet parking. Many of these trips will likely be taxis or a single pick-up and drop-off trip
- ◆ This assumption is also much higher than the observed trips at the Intercontinental Hotel
- ◆ We note that this assumption is not directly linked to the provision of a specific number of hotel valet parking spaces, noting that the allocation of parking spaces between valet parking and the office activity has not been confirmed.

Facility management

For the 2 facility management spaces, we have assumed the same trip rate as office spaces. These will be used by staff members, who will likely arrive and depart the Site in a similar manner to office workers.

Servicing trips

As our trip generation assessment is based on parking allocation, we have made additional allowances for servicing vehicles.

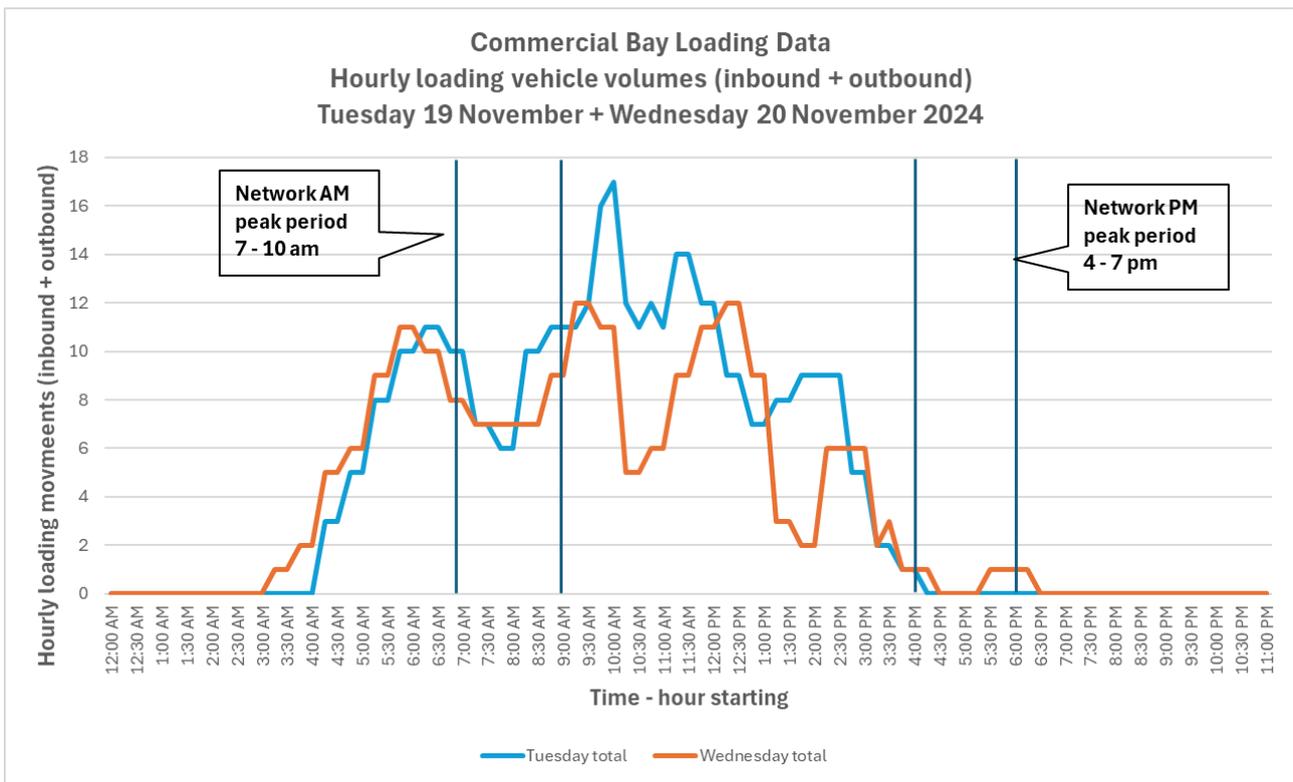
We have assessed data for the Commercial Bay loading area, noting there is a general lack of published trip generation data for service vehicles, especially in a New Zealand or Australian context. We have obtained data for Tuesday, 19 November 2024 and Wednesday, 20 November 2024.

We understand that the Commercial Bay loading area is served by the following activities.

- ◆ Commercial Bay and 1 Queen Street combined
 - Retail: 17,228 m² GFA (compared to 1,179 m² GFA for the Development)
 - Office: 67,841 m² GFA (compared to 87,000 m² GFA for the Development)
 - Hotel: 7,301 m² GFA or 139 rooms (compared to 14,100 m² GFA or 200 hotel rooms in the Development)
 - Residential: none (compared to 160 apartments / 23,200 m² GFA in the Development)
- ◆ The total GFA for the Development is approximately 125,000 m² GFA compared to 92,000 m² GFA for the activities being serviced by the Commercial Bay loading area, which is approximately 1.35 times the size of the Commercial Bay loading activities.

Figure 35 shows a graph of the hourly vehicle volumes using the Commercial Bay loading area.

Figure 35: Commercial Bay loading data, hourly servicing volumes, November 2024



This graph shows the following

- ◆ During AM peak times of 7 to 10 am, a maximum of 11 servicing vehicle movements per hour was observed
- ◆ During PM peak times of 4 to 7 pm, a maximum of 1 servicing vehicle movement per hour was observed
- ◆ The highest number of servicing movements occurred between 10 – 11 am, with 17 servicing vehicle movements per hour being recorded on a Tuesday
- ◆ Furthermore, the total daily servicing movements were observed
 - 52 vehicle movements on Tuesday
 - 45 vehicle movements on Wednesday
- ◆ Based on these results and the profile shown in Figure 35
 - The highest concentration of servicing vehicle movements occurs outside of the network peak hours during the middle of the day or before the AM network peak
 - While the period of 7 to 10 am accommodates a moderate number of servicing vehicles, there are almost no servicing vehicle trips after 4 pm
 - The absence of servicing trips during the PM peak period shows that servicing trips are typically scheduled to avoid this time in an Auckland City Centre context, likely due to general congestion in the network
 - This shows that servicing trips generally occur in off-peak periods when it is easier to travel to and from the City Centre

- ◆ Based on the comments provided in the servicing schedule
 - 73% of bookings specified which tenant they were visiting
 - Of these specified bookings
 - 23% were assigned to office activities
 - 73% were assigned to retail activities
 - 4% were assigned to the hotel activity
 - This shows that retail activities comprise the majority of servicing trips.

Table 11 shows the Commercial Bay loading trip rates based on the loading data.

Table 11: Commercial Bay loading trip rates

Activity	Loading trip rates	
	AM peak	PM peak
Office (rate per 100 m ² GFA)	0.0037	0.0003
Retail (rate per 100 m ² GFA)	0.0468	0.0043
Hotel (rate per room)	0.0033	0.0003

While the Commercial Bay loading area services a hotel and not standard residential activities, we consider they can be compared as they are both based on the number of rooms. We expect that hotels would generate more or similar rates servicing trips than a residential development, as a hotel would have a higher turnover of guests (generating more cleaning and waste requirements), and food servicing requirements. We also note that servicing trips for residential activities (particularly waste management) are typically undertaken outside of weekday periods in the Auckland City Centre. Therefore, we do not anticipate residential servicing trips will be high during weekday peak periods.

9.2.2 Trip generation volumes

Accessing the hotel pick-up and drop-off area

As outlined in Section 9.2.1, we have assumed the following peak hour trip generation volumes for the hotel pick-up and drop-off area.

- AM peak hour: 28 vehicles per hour (inbound and outbound)
- PM peak hour: 22 vehicles per hour (inbound and outbound).

Accessing the service lane

As summarised in Table 12, when applying the trip generation rates for each activity, the anticipated worst-case trip generation of the Development is 208 trips in the AM peak hour and 180 trips in the PM peak hour.

We have rounded up the trip generation for each activity to the nearest whole number. For servicing trips during the PM peak, we have assumed 1 vehicle per hour as the collective trip generation for all servicing trips would have been lower than 1 vehicle per hour.

We note that this accounts for the scenario of every hotel/office parking being allocated to the office activity while also accounting for 100% of the hotel pick-up and drop-off area trips entering and exiting the basement parking area for valet parking. Therefore, this is very conservative and allows for the scenario of either full allocation of office parking or the provision of some valet parking (which will not consist of all of the 170 spaces).

Table 12: Weekday peak hour trip generation of Development, accessing the service lane¹¹

Activity	Size	Trip rate		Trip generation (vph)	
		AM	PM	AM	PM
Office per parking space	170 spaces	0.32 per parking space	0.28 per parking space	55 (54.4)	48 (47.6)
Residential per parking space	160 spaces	0.15 per parking space	0.12 per parking space	24 (24.0)	20 (19.2)
M Social per parking space	(Up to) 121 spaces	0.32 per parking space	0.28 per parking space	39 (38.7)	34 (33.9)
Facilities management per parking space	2 spaces	0.32 per parking space	0.28 per parking space	1 (0.6)	1 (0.6)
Casual spaces	9 spaces	6 per space per hour	6 per space per hour	54	54
Hotel valet parking	Assume 100% of hotel pick-up and drop-off trips enter the basement parking area for valet parking			28	22
Office – servicing	87,000m ²	0.0037 per 100 m ² GFA	0.0003 per 100 m ² GFA	5 (3.2)	1 (0.4)
Residential – servicing	160 units	0.0033 per unit	0.0003 per unit	1 (0.5)	
Retail food and beverage - servicing	1,179 m ²	0.0468 per 100 m ² GFA	0.0043 per 100 m ² GFA	1 (0.7)	
Hotel – servicing	200 rooms	0.0033 per unit	0.0003 per unit	1 (0.6)	
Total				208	180

¹¹ From a trip generation perspective, office and M Social parking spaces have the same trip rate, so allocation to either office or M Social use does not affect trip generation.

9.3 SATURN network traffic modelling

9.3.1 SATURN traffic modelling methodology

The City Centre 2031 SATURN model has been prepared by the Auckland Forecasting Centre (AFC) and assesses the AM and PM peak hours during a weekday. This model is a tool used to assess vehicle movements in the City Centre.

- ◆ The layout of the road network in the model is shown in Figure 36
- ◆ The model is based on the future 2031 year. This accounts for the City Rail Link being completed. All current road closures associated with the City Rail Link have, therefore, been removed. The model also accounts for future bus routes that will apply to the City Centre once the City Rail Link is completed
- ◆ The model only includes committed and funded road projects in the City Centre, which can be considered as part of the existing legal environment. One of these included projects is the Wellesley Street bus improvements
- ◆ No unfunded or uncertain projects are included in the model, such as the removal of the Lower Hobson Street flyover
- ◆ To account for future traffic volumes in 2031, AFC applied growth factors to different types of trips in the model, as summarised in Table 13. 2023 volumes were used as a baseline for the growth factors. The growth factors generally predict a small increase in traffic volumes from 2023 to 2031.

This model is appropriate to use as the timeframe aligns with the completion of the Development. The only other version of the City Centre SATURN model that AFC has available is for 2023, which will not fully capture the road network when the Development is completed.

Figure 36: City Centre SATURN model layout

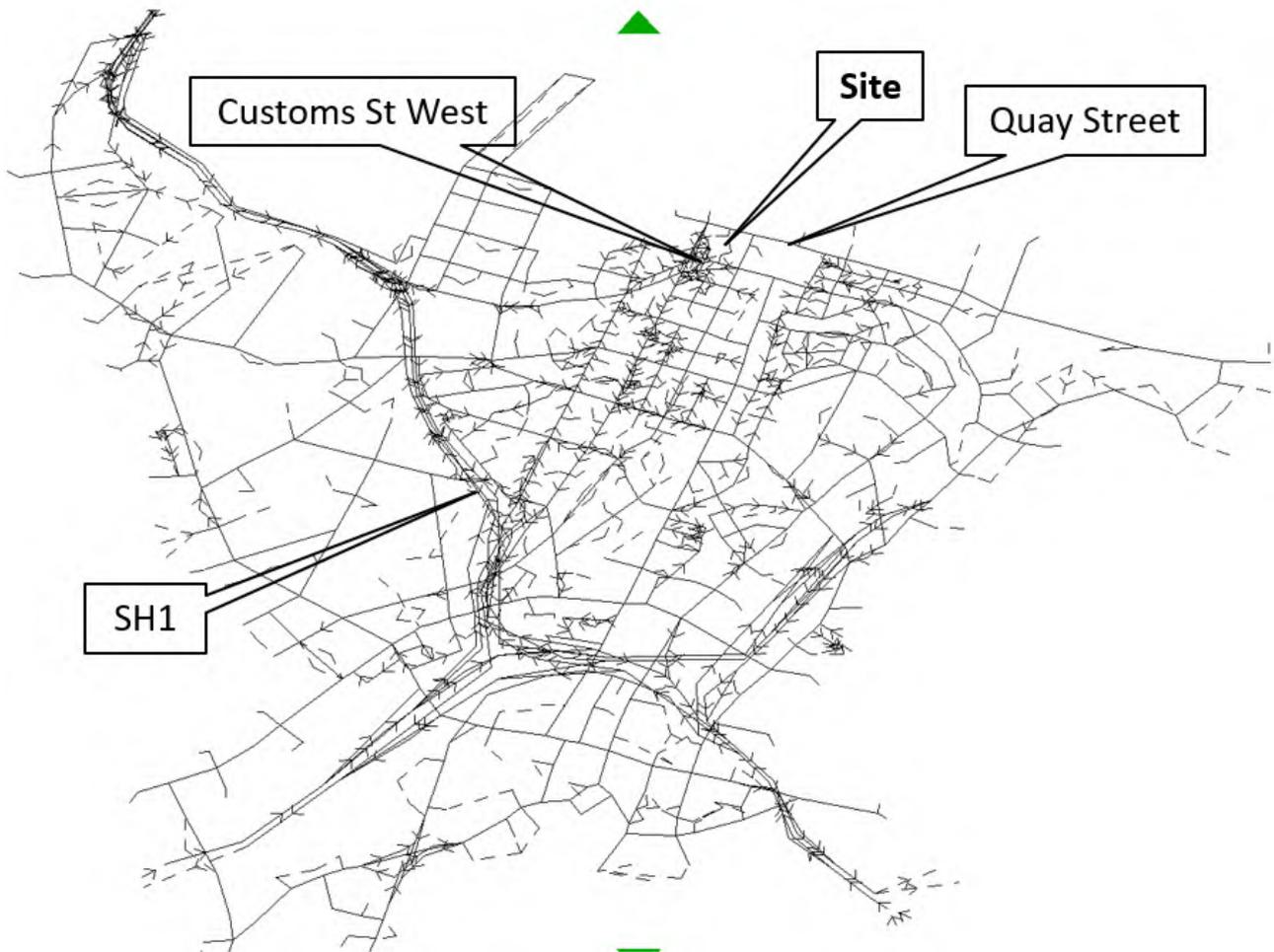


Table 13: Model demand growth applied from 2023 to 2031, by AFC (% change from 2023)

Peak period	1 Total demands	2 Intra CBD (From CBD to CBD)	3 From CBD to Outside CBD	4 Outside CBD into CBD	5 Through (Outside CBD to Outside CBD)	CBD related (2 + 3+ 4)
AM peak	+3.6%	+2.9%	+1.3%	-0.6%	+6.1%	+0.3%
PM peak	+2.8%	+1.8%	-2.4%	+1.5%	+5.6%	-0.7%

Using the 2031 City Centre SATURN model provided by AFC, we have created the following scenarios.

Scenario 1: Future Baseline

This scenario assumes the same external road network as per the AFC 2031 model.

The only modifications made include

- ◆ With regard to the traffic demands, we have made adjustments to the demands of the service lane and the Downtown Carpark to align with observed traffic data
- ◆ We separated out the 2 M Social vehicle crossings and the service lane vehicle crossing on Quay Street (into 3 separate crossings). These were modelled as one collective vehicle crossing in the

original AFC model. The demands for each vehicle crossing have been based on observed traffic survey data.

Scenario 2: Development

This scenario uses Scenario 1: Future Baseline as a basis and applies the following additional changes. It includes the changes as a result of the Development, including additional trips that will be generated by the development, changes to local access points, and the redistribution of Downtown Carpark trips to other parking facilities in the City Centre.

- ◆ changes to the Downtown Carpark demands to 0
- ◆ the creation of a new zone for the Development with access onto the service lane, such that demands can choose to access the service lane via Quay Street or Customs Street West access. The zone uses the trip generation demands outlined in Section 9.2
- ◆ the removal of the signalised intersection between Fanshawe Street and the Downtown Carpark exit ramp
- ◆ the reassignment of existing trips to and from the Downtown Carpark to other parking facilities in the City Centre
 - The full difference between the existing Downtown Carpark demands and the M Social parking trip generation (outlined in Section 9.2) was reallocated to other parking facilities. This is effectively a 100% reallocation of existing Downtown Carpark trips
 - In this regard, we adopted a methodology suggested by AFC to select where these carpark trips would be reassigned. This methodology was based on carpark occupancy survey data originally provided by Auckland Transport Parking for privately owned parking sites in the City Centre.
- ◆ add hotel pick-up and drop-off trips on Customs Street West, utilising the volumes in Section 9.2.2.

9.3.2 SATURN modelling results

The SATURN model outputs for the above scenarios are provided in Appendix F.

Volume and delay differences on the road network

The following outputs are provided in Appendix F, which show delay and volume difference diagrams.

- ◆ Actual volume differences between the Future Baseline scenario and the Development scenario. The differences are shown in Passenger Car Units (“PCUs”) per hour, where a standard vehicle is 1 PCU and a heavy vehicle is 2 PCUs. Only differences of over 10 PCUs are shown
- ◆ Delay differences between the Future Baseline scenario and the Development scenario in seconds. Only differences of over 10 seconds are shown
- ◆ Diagrams are provided for the Development scenario for the AM and PM weekday peak period
- ◆ The blue lines represent a decrease in volume/delay, when compared to the Future Baseline, whereas the green line represents an increase.

We summarise the results below.

These results predict the changes to the operation of the road network resulting from the removal of the Downtown Carpark and the implementation of the Development.

AM peak

- ◆ For vehicle volumes
 - Vehicles generally reroute away from Sturdee Street and the Lower Hobson Street slip lane adjacent to the Site due to the removal of trips entering and exiting the Downtown Carpark
 - There are some increases in vehicle trips on Customs Street West and the Lower Hobson Street Flyover
 - The volumes on Quay Street remain similar, with no significant changes shown. While there will be an increase in trips exiting via the service lane vehicle crossing, there will also be a reduction in vehicles using Quay Street as a route to access the Downtown Carpark.
 - Across the wider City Centre network, the changes in vehicle volumes are not significant
- ◆ No changes in vehicle delays in the surrounding area are predicted to be over 10 seconds. The Downtown Carpark exit ramp onto Fanshawe Street is predicted to have a reduction in delay as this signalised intersection will no longer be required.

PM peak

- ◆ For vehicle volumes
 - Vehicles generally reroute away from Sturdee Street, the Lower Hobson Street slip lane adjacent to the Site and Customs Street West due to the removal of trips entering and exiting the Downtown Carpark
 - There are some increases in vehicle trips on Fanshawe Street and the Lower Hobson Street Flyover
 - The volumes on Quay Street remain relatively similar, increase of around 5 to 16 PCUs per hour (accounting for both directions of travel). While there will be an increase in trips exiting via the service lane vehicle crossing, there will also be a reduction in vehicles using Quay Street as a route to access the Downtown Carpark, which is why the difference is small
 - Across the wider City Centre network, the changes in vehicle volumes are relatively minor
- ◆ For vehicle delays
 - Like the AM peak, the Downtown Carpark exit ramp onto Fanshawe Street is predicted to have a reduction in delay as this signalised intersection will no longer be required
 - The only increase in the surrounding area is a 14 second average delay increase at the Quay Street service lane vehicle crossing, but this does not affect Quay Street through traffic.

We note that while more vehicle trips on the network are modelled due to the additional trip generation from the Development and all Downtown Carpark trips being redistributed, there are no noticeable increases in network vehicle delays.

Average journey times

Table F1 in Appendix F provides a summary of the average travel time per vehicle, per modelled scenario and peak period.

This shows a 0 to 2 second increase for all vehicles, when comparing Scenario 1 and 2. This shows the Development will have negligible impact on overall vehicle travel times across the network.

Bus journey times

Table F2 in Appendix F provides a summary of the bus route journey times, per modelled scenario and peak period.

- ◆ This shows very small changes to bus route travel times, ranging from -17 to +10 seconds. Most bus routes are not affected
- ◆ We also note that high volume bus routes in the area (including the NX and WX routes) or bus routes utilising Quay Street (NX1, 95 and 97 routes) are not predicted to have any notable increases to travel times
- ◆ This shows that buses will not be adversely impacted in a noticeable manner by the additional Development trips and the redistributed Downtown Carpark trips

9.3.3 Discussion and summary of the SATURN network model results

The SATURN results show the following for all scenarios and peak periods:

- ◆ Vehicles generally reroute away from the routes serving the existing Downtown Carpark (Sturdee Street, the Lower Hobson Street slip lane adjacent to the Site), towards the routes directed to the Development's access points (Quay Street, Customs Street West and the Lower Hobson Street Flyover)
- ◆ The volumes on Quay Street remain similar, with no significant changes shown. While there will be an increase in trips exiting via the service lane vehicle crossing, there will also be a reduction in vehicles using Quay Street as a route to access the Downtown Carpark
- ◆ The change in vehicle volumes is mostly concentrated in the areas near the Development and Downtown Carpark access points. No significant changes in vehicle volumes are predicted in the wider network
- ◆ No increases of vehicle delays of more than 10 seconds are predicted in any scenario, both in the local area and the wider network, other than an increase in delays at the service lane in the PM peak. All scenarios show a decrease in delays at the Downtown Carpark exit ramp onto Fanshawe Street, as this signalised intersection will no longer be required
- ◆ The Development will have a negligible impact on overall vehicle travel times across the network, with average journey times for all vehicles increasing between 0 to 2 seconds compared to the future baseline

- ◆ No noticeable change to bus route travel times is predicted. There will be some small increases and decreases of -17 to +10 seconds for some bus routes. High volume bus routes in the area (including the NX and WX routes) or bus routes utilising Quay Street (NX1, 95 and 97 routes) are not predicted to have any notable increases to travel times.

Overall, we consider that the results of the SATURN network modelling have shown that the existing road network can efficiently accommodate the traffic demands of the Development.

9.4 SIDRA Intersection traffic modelling

9.4.1 SIDRA model methodology

The SIDRA Intersection modelling software has been used to provide a more detailed assessment of the traffic effects resulting from the Development, with a focus on the Development's accesses onto Quay Street and Customs Street West. SIDRA provides more detailed outputs for vehicle delay and queue lengths at an intersection level when compared to the SATURN assessment.

We have created SIDRA Intersection networks at both service lane access points on Quay Street and Customs Street West, as follows.

Quay Street

- ◆ The layout of the Quay Street network for both Scenario 1 (Future baseline) and Scenario 2 (Development) is shown in Figure 37
- ◆ The intersections within the Quay Street network include
 - Quay Street/Lower Hobson Street/Princess Wharf/Eastern Viaduct signalised intersection
 - Quay Street / Lower Albert Street signalised intersection
 - Development's service lane access onto Quay Street
 - M Social hotel's eastern vehicle access onto Quay Street
 - M Social hotel's western vehicle access onto Quay Street.

Figure 37: SIDRA layout of Quay Street network (for both Scenario 1 and 2)



Customs Street West

- ◆ The layout of the Customs Street West network for Scenario 1 (Future baseline) and Scenario 2 (Development) is shown in Figure 38 and Figure 39 respectively.
- ◆ The intersections within the Custom Street network for Scenario 1 include
 - Customs Street West/Lower Albert Street signalised intersection
 - Customs Street West/Service lane access
 - Customs Street West/Sturdee Street/Lower Hobson Street slip lane/Downtown car park priority intersection
- ◆ For Scenario 2, the Downtown Carpark access approach for the Customs Street West/Sturdee Street/Lower Hobson Street slip lane intersection is replaced with the Development's hotel drop-off entry and exit vehicle access points.

Figure 38: SIDRA layout of Customs Street West network (Scenario 1)

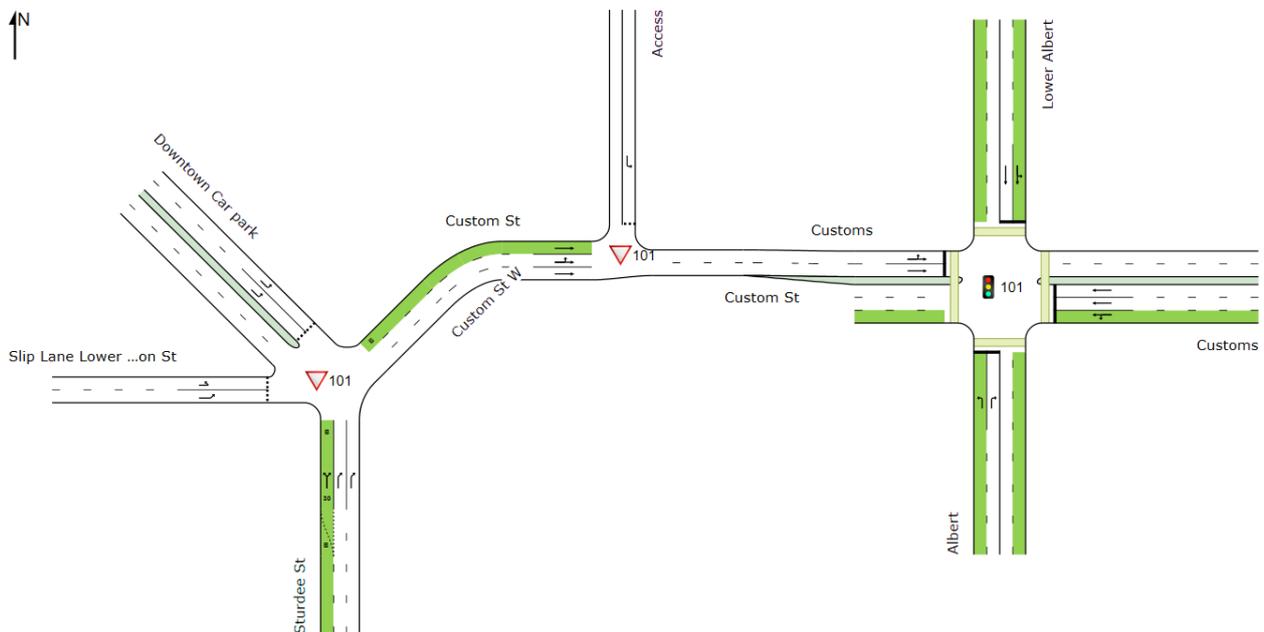
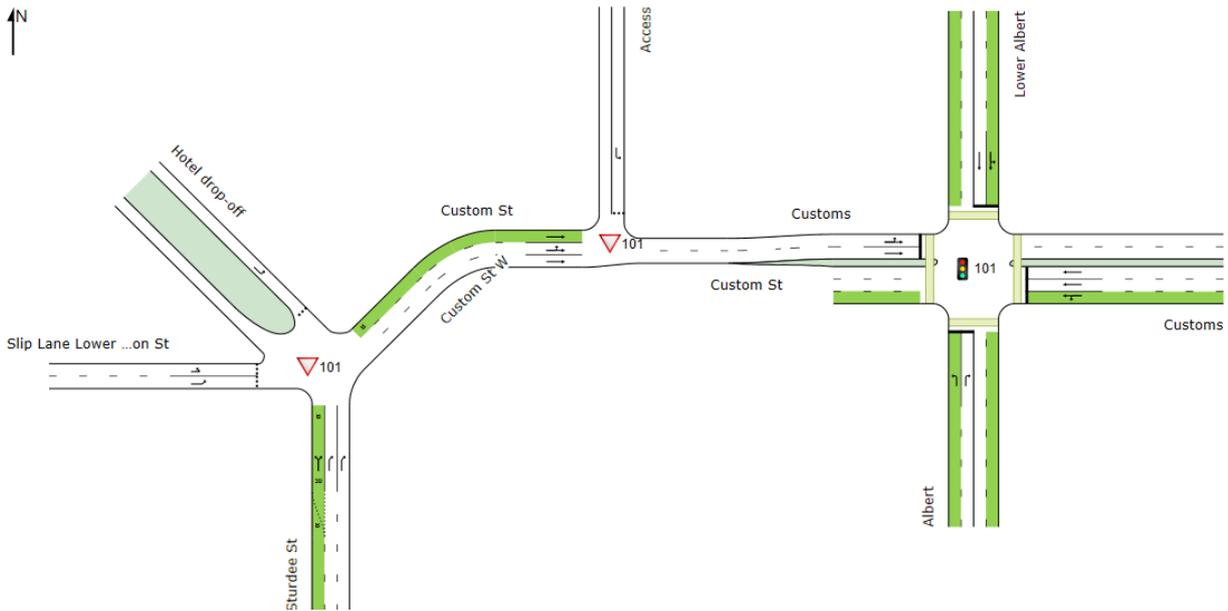


Figure 39: SIDRA layout of Customs Street West network (Scenario 2)



Turning count volumes

Figure 40 and Figure 41 show the turning volume demands at both service lane access for each scenario and peak period. These turning volumes were extracted from the SATURN models and include existing demands on the service lane. Through volumes on Quay Street and Customs Street West are also shown, which are affected by the redistribution of the existing Downtown Carpark trips.

Figure 40: Scenario 1 (Future Baseline) turning volumes at service lane access points

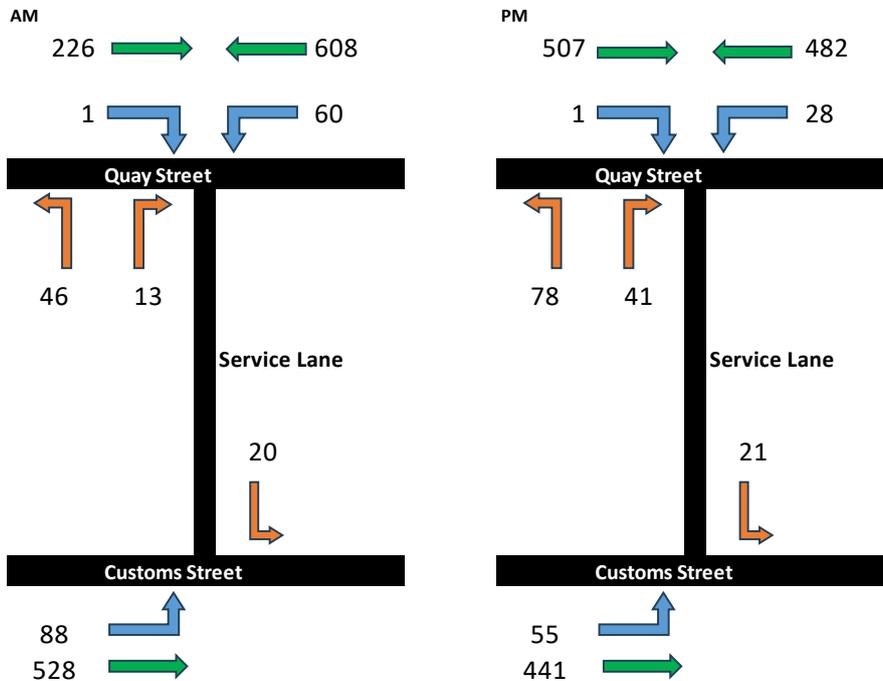
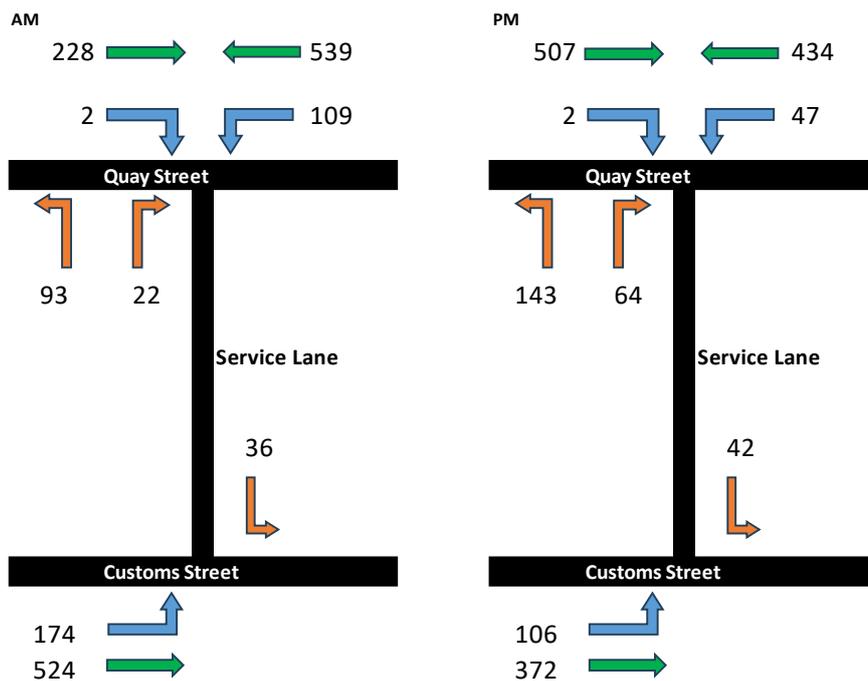


Figure 41: Scenario 2 (Development) turning volumes at service lane access points



Vehicle volumes are predicted to change as follows, comparing Scenario 1 and 2

- ◆ Quay Street service lane access outbound movements
 - AM peak: 59 to 115 vph (increase of 56 vph)
 - PM peak: 119 to 207 vph (increase of 88 vph)
- ◆ Quay Street service lane access inbound movements
 - AM peak: 61 to 111 vph (increase of 50 vph)
 - PM peak: 29 to 49 vph (increase of 20 vph)
- ◆ Quay Street service lane access total movements
 - AM peak: 120 to 226 vph (increase of 106 vph)
 - PM peak: 148 to 256 vph (increase of 108 vph).
- ◆ While vehicles using the Quay Street service lane access is predicted to increase by 106 to 108 vph during the weekday peak hours, thereby approximately doubling the future baseline usage, we note that this represents around an additional 2 cars per minute, which is not a significant increase.
- ◆ While the Development is predicted to increase traffic volumes out of the service lane access onto Quay Street, we note that the effects of this additional demand will be offset by a reduction in through traffic on Quay Street, due to the reduction of trips travelling to and from the Downtown Carpark in the Development scenario

The hotel pick-up and drop-off turning volumes have been detailed in Section 9.2.2. In comparison to the future base Downtown Carpark volumes, the proposed hotel pick-up and drop-off will generate significantly lower vehicle trips.

- ◆ In the AM peak hour,

- 14 inbound vehicles are predicted for the drop off compared to 250 inbound vehicles with the future base Downtown Carpark (a decrease of 236 vehicles)
- 14 outbound vehicles are predicted for the drop off compared to 22 outbound with the future base Downtown Carpark (a decrease of 8 vehicles)
- ◆ In the PM peak hour,
 - 11 inbound vehicles are predicted for the drop off compared to 164 inbound with the future base Downtown Carpark (a decrease of 153 vehicles)
 - 11 outbound vehicles are predicted for the drop off compared to 90 outbound with the future base Downtown Carpark (a decrease of 79 vehicles).

9.4.2 SIDRA modelling results

The SIDRA model outputs are provided in Appendix G¹². Movement summary results, including average delay, level of service (“LOS”)¹³, degree of saturation and queue length, are provided for each scenario during the AM and PM peak periods, focussing on the service lane access points.

Table 14 to Table 17 summarise the Level of Service and average delay for the Future Baseline and for the Development scenario at the Quay Street and the Customs Street West access during the AM and PM peak hours. Table 18 and Table 19 summarises the above for the Hotel-Drop off area in comparison with the Future Baseline with the Downtown Carpark access.

Table 14: Quay Street service lane access: SIDRA results AM peak hour

Approach	Scenario 1 Future Baseline			Scenario 2 With Development		
	LOS	Ave delay (s)	95 th %tile Queue (m)	LOS	Ave delay (s)	95 th %tile Queue (m)
Service Lane left turn	A	5	2	A	5	71
Service lane right turn	B	15	2	B	15	71
Quay Street east left turn	A	4	0	A	4	28
Quay Street east through	A	0	0	A	0	28
Quay Street west through	A	0	0	A	0	0
Quay Street west right turn	A	5	0	A	5	0
All vehicles	NA	1	2	NA	1	71

¹² In the SIDRA outputs, Scenario 1 is titled ‘Future Base Model’ and Scenario 2 is titled ‘Future Development Model’

¹³ Level of Service is an index of performance of traffic on a roadway or intersection and is based on measures such as vehicle delay. It provides a measure of performance on a scale of A to F, with LOS A representing the best operating conditions from a traveller’s perspective, and LOS F the worst. LOS A represents free flow conditions, while LOS B and LOS C represent reasonably free flow / stable free flow conditions. LOS D and LOS E represents approaching or at unstable flow conditions but operating within capacity. LOS F represents breakdown of traffic flow conditions.

Table 15: Quay Street service lane access: SIDRA results PM peak hour

Approach	Scenario 1 Future Baseline			Scenario 2 With Development		
	LOS	Ave delay (s)	95 th %tile Queue (m)	LOS	Ave delay (s)	95 th %tile Queue (m)
Service Lane left turn	A	5	25	A	9	36
Service lane right turn	C	21	25	D	31	36
Quay Street east left turn	A	4	14	A	4	9
Quay Street east through	A	0	14	A	0	9
Quay Street west through	A	0	8	A	0	8
Quay Street west right turn	A	4	0	A	4	0
All vehicles	NA	1	25	NA	3	36

Table 16: Custom Street West service lane access: SIDRA results AM peak hour

Approach	Scenario 1 Future Baseline			Scenario 2 With Development		
	LOS	Ave delay (s)	95 th %tile Queue (m)	LOS	Ave delay (s)	95 th %tile Queue (m)
Service lane left turn	A	6	0	A	6	1
Customs St West left turn	A	3	0	A	3	0
Customs St West through	A	0	0	A	0	0
All vehicles	NA	1	0	NA	1	1

Table 17: Customs Street West service lane access: PM peak hour

Approach	Scenario 1 Future Baseline			Scenario 2 With Development		
	LOS	Ave delay (s)	95 th %tile Queue (m)	LOS	Ave delay (s)	95 th %tile Queue (m)
Service lane left turn	A	5	0	A	5	1
Customs St West left turn	A	3	0	A	3	0
Customs St West through	A	0	0	A	0	0
All vehicles	NA	1	1	NA	1	1

Table 18: Customs Street West Hotel Drop-off access: AM peak hour

Approach	Scenario 1 Future Baseline (With Downtown Carpark access)			Scenario 2 With Development (Hotel Drop-off access)		
	LOS	Ave delay (s)	95 th %tile Queue (m)	LOS	Ave delay (s)	95 th %tile Queue (m)
Sturdee St left turn (into Downtown Carpark)	A	2	0	A	2	0
Sturdee St through ¹⁴	A	3	0	A	3	0
(Downtown Carpark or Hotel Drop-off) left turn	A	6	0	A	5	0
Lower Hobson St Slip lane left turn (into Downtown Carpark)	A	6	2	A	5	0
Lower Hobson St Slip Lane left turn (into Customs St W)	A	7	0	A	6	0
All vehicles	NA	3	2	NA	3	0

Table 19: Customs Street West Hotel Drop-off access: PM peak hour

Approach	Scenario 1 Future Baseline (With Downtown Carpark access)			Scenario 2 With Development (Hotel Drop-off access)		
	LOS	Ave delay (s)	95 th %tile Queue (m)	LOS	Ave delay (s)	95 th %tile Queue (m)
Sturdee St left turn (into Downtown Carpark)	A	2	0	A	2	0
Sturdee St through ¹⁵	A	3	0	A	3	0
(Downtown Carpark or Hotel Drop-off) left turn	A	6	1	A	5	0
Lower Hobson St Slip lane left turn (into Downtown Carpark)	A	6	2	A	5	0
Lower Hobson St Slip Lane left turn (into Customs St W)	A	5	0	A	5	0
All vehicles	NA	3	2	NA	3	0

¹⁴ Sturdee Street through is represented as the right turn in the SIDRA model and outputs.

¹⁵ Sturdee Street through is represented as the right turn in the SIDRA model and outputs.

9.4.3 Discussion of SIDRA modelling results

The SIDRA modelling results show the following about the predicted operation of the Quay Street service lane vehicle access

- ◆ In the AM peak, the Quay Street service lane access is predicted to perform adequately
 - the access is predicted to operate at a LOS A and LOS B for the left and right turn, respectively
 - the average delays are predicted to be 5 seconds for the left turn and 15 seconds for the right turn per vehicle
 - 95th percentile queues are predicted to be 71 m (around 10 vehicles). Given that the service lane accommodates two-way traffic and measures around 125 m in length, this queuing can be contained within the lane without blocking back or affecting other approaches. The average (50th percentile) back of queue length is approximately 29 m, equating to around 4 vehicles. The 71 m is predicted to represent the worst-case scenario. This level of queuing is considered acceptable and consistent with the modest increase in service lane use
 - The Future Baseline scenario predicts similar average delays. However, it predicts that there will be no queues in comparison as the 95th percentile queue is effectively zero
- ◆ In the PM peak, the Quay Street service lane access is predicted to perform adequately
 - the access is predicted to operate at a LOS A and LOS D for the left and right turn, respectively
 - the average delays are predicted to be 9 seconds for the left turn and 31 seconds for the right turn per vehicle
 - 95th percentile queues are predicted to be 36 m (around 5 vehicles)
 - The Future Baseline scenario predicts slightly better results with average delays of 5 and 21 seconds for the left and right turn respectively, and 25 m 95th percentile queues. This is a relatively minor increase of about 4 to 10 seconds and an additional 11 m of 95th percentile queue (about 1 car).

The SIDRA modelling results show the following about the predicted operation of the Customs Street West service lane vehicle access

- ◆ In both peak periods, the Customs Street West service lane access is predicted to operate with minimal delays under the Development scenario, with LOS A for all movements. The average delay is predicted to be around 5 to 6 seconds with no vehicle queues.

The SIDRA modelling results show the following about the predicted operation of the Hotel Drop-off vehicle access

- ◆ In both the AM and PM peak periods, the access is predicted to operate with minimal delays similarly. The Downtown Carpark in the Future Baseline and the Hotel Drop-off in the Development scenario have effectively the same average delay at around 5 to 6 seconds and no notable vehicle queues.

In summary, the SIDRA results show the following

- ◆ While traffic volumes using the Quay Street service lane access are expected to increase, the differences in delays and queues between the Future Baseline and With Development scenarios are minor
- ◆ There are no operational issues predicted at the Customs Street West service lane access, which functions as a left-in/left-out arrangement with no significant outbound volumes. Similarly, there are no predicted issues associated with the hotel pick-up and drop-off access, which also functions as a left-in/left-out arrangement with significantly lower traffic in comparison to the Downtown Carpark access
- ◆ While turning volumes at the service lane are expected to increase, this will be partially offset by a reduction in through traffic volumes associated with the redistribution of existing Downtown Carpark trips. Although the development will generate more trips to the Quay Street service lane, the overall change in local network performance is not significant
- ◆ Overall, both service lane access points and the hotel pick-up and drop-off accesses are expected to operate within capacity, and the results do not indicate any safety or congestion-related concerns. Post development, driver behaviour and traffic patterns are not expected to change or require change, and no adverse safety effects are anticipated.

10 MITIGATION MEASURES AND PROPOSED CONDITIONS OF CONSENT

We recommend the following mitigation measures be provided for the Development.

- ◆ The development and implementation of a Servicing and Loading Management Plan to ensure that all servicing vehicles that access the Development comply with the necessary vertical clearance restrictions. Refer to Section 8.4.2.
- ◆ On Quay Street, access measures are implemented to improve visibility between exiting trucks and inbound vehicles. We have assumed a convex mirror will be provided as outlined in Section 8.4.3.
- ◆ At the Customs Street West/Sturdee Street give-way intersection adjacent to the development hotel pick-up and drop-off, the associated existing limit line and give-way markings are to be shifted to back to the splay of the western hotel pick-up and drop-off vehicle crossing. Refer to Section 7.2.3
- ◆ A hotel pick-up and drop-off management plan. The management plan must include the following
 - Details about the specific signage or markings required to show that the pick-up and drop-off area is for exclusive use by the hotel guest arrival and departure activity, and that will assist in the general operation of the drop-off area. These details should include
 - Signage stating use for hotel drop-off only
 - Time limit restrictions signage proposed for the use of the drop-off spaces of up to 5 minutes for hotel guests and 3 minutes for taxis or ride-share vehicles
 - Signage stating not to leave vehicles unattended, and for valet parking to give keys to hotel staff members

- Clearly defining signage or markings for entry and exit points for vehicles
- Vehicle size limitation signage (the maximum vehicle size utilising the drop-off area is a 7.4 m long van with a trailer)
- Markings/surface treatment defining drop-off spaces and pass-through lane
- The level of staffing required during the following periods
 - 24/7, the hotel will provide a driveway manager (doorman) to ensure the drop-off area is always under visual observation who would be stationed at the pick up and drop-off area directly, or by the door where they can see the pick up and drop-off area
 - 'Core hour' period from 6 am to 10 pm during weekdays, 8 am to 6 pm on weekends
 - In addition to the driveway manager a minimum of one porter (to accept guest luggage immediately) and one valet parking attendant (to quickly remove guest cars from the driveway once the bags are collected). These numbers could be increased based on peak demand times
 - 'After hour' periods (outside of core hours)
 - In addition to the driveway manager, one combined porter/valet parker
 - A computer terminal (or equivalent handheld device) must be provided so that the staff can check with the hotel reservation system that the guest is arriving at the correct hotel before accepting the bags and parking the car. A luggage store to be provided immediately adjacent to the doorway/hotel entrance so that the driveway porter can store the luggage ahead of other porters delivering it – i.e. to assure the driveway porter does not need to leave the driveway unmanned. Valet parkers, porters and driveway manager to be equipped with discreet radios
- Measures to encourage high turnover of the pick up and drop-off area. These measures could include
 - Turning away unauthorised vehicles and idle vehicles not requiring the use of a drop-off area
 - Staff members directing vehicles away (ie to loop around the block) if the drop-off spaces are fully occupied
 - Targets for staff to remove each vehicle within a time period, eg guest cars within 5 minutes and taxis or Ubers within 3 minutes
 - Regular staff training.

11 CONCLUSIONS

Alignment with central and local government land use and transport planning policy

The Development aligns well with the objectives set out in central and local government land use and transport planning policy documents. It is a high-density residential, hotel and commercial development located with excellent access to public transport, well connected for cycling and walking and a large number of services and amenities within short walking distance.

The Site location, in combination with reducing the existing on-site parking supply by around 75 % compared to the existing Downtown Carpark, discourages the use of private vehicles as a mode of travel and contributes to Auckland's reductions in transport-based greenhouse gas emissions.

Unitary Plan transport matters

Under the Unitary Plan transport-related rules, the Development has a Discretionary activity status (noting the overall application status of Non-complying) because the Development basement will be used for up to 121 off-site parking spaces. This relates to an existing agreement whereby the M Social hotel, located directly to the north of the Site, has the use of 121 off-site parking spaces in the existing Downtown Carpark, and as such, provision needs to be made in the Development. This arrangement will not result in any adverse transport effects, as it is an existing situation. The traffic demands of this off-site parking have been included in our traffic assessment.

The provision and design of most transport facilities, including accessways, car and bicycle parking provision, loading facilities and pedestrian facilities, will comply with the standards of the Unitary Plan. We note the following design-related infringements that will apply.

- ◆ For service vehicles, this relates to the section of the service lane between the Quay Street access and the access to the basement loading area. (3.8 m vertical clearance is required, and 3.6 m clearance is provided). This is an existing situation, and we have observed that this small non-compliance of 200 mm still allows for trucks to use the service lane to access the existing loading docks on the service lane. Notwithstanding this and to manage the effects of the Development's vertical clearance restrictions, we recommend that a Servicing and Loading Management Plan be required to ensure that all servicing vehicles that access the Development comply with the necessary vertical clearance restrictions.
- ◆ For accessible parking, 2.5 m of vertical clearance is not provided for all of the parking spaces or access areas. We have assessed accessible parking design standards, and consider the available vertical clearance is appropriate.
- ◆ Several small car parking spaces are proposed, which do not meet the standard parking dimensions. These spaces can be allocated to regular users, such as staff members or residents, who will be aware of the smaller dimensions.
- ◆ The Quay Street service lane and Customs Street West hotel pick-up and drop-off vehicle crossings do not meet several access design standards. We note that some of these infringements are existing, but the proposed designs will be improvements compared to the existing vehicle crossing layouts.

The Unitary Plan specifies that tandem or stacked spaces are permitted for residential activities. While the final parking allocation has not been determined, the tandem spaces could potentially be allocated to the office activities. We consider this can be managed by allocating the tandem spaces to the same office tenancies. The users of these spaces will be regular users, and the use of the tandem spaces can be coordinated and managed as required.

Under Plan Change 79 of the Unitary Plan, additional accessible parking spaces are required for all activities. The standards require a total of 55 accessible parking spaces, whereas 21 are proposed. The proposed provision will be sufficient to meet the residential accessible parking requirements, but will have a shortfall for the office, retail and hotel activities. We consider that the proposed provision is acceptable as the private car mode share is expected to be low, given that excellent and accessible public transport options are available in close proximity to the Site.

Under the Unitary Plan, Quay Street and Customs Street West access points have vehicle access restrictions. We have accordingly completed an assessment of the Development's use of these accesses, having regard to the relevant restricted discretionary activity criteria in the Unitary Plan. We conclude that the location and design of these crossings are such that there is adequate sight distance for these crossings to function safely and efficiently under the predicted traffic demands.

Traffic effects assessment

With regard to access, we note that the number and design of the Site's vehicle access will have positive transport effects compared to the existing situation, as all access and vehicle crossings associated with the existing Downtown Carpark will be removed or redesigned.

The removal of the existing crossings on Customs Street West into the Downtown Carpark will provide a safer environment for pedestrians, noting that these are the only locations within the block where pedestrian crashes have been recorded to have occurred over the past 5 years. The proposed hotel pick-up and drop-off vehicle crossings on Customs Street West will generate much lower traffic volumes compared to the Downtown Carpark volumes.

The SATURN results show the following for all scenarios and peak periods.

- ◆ Vehicles generally reroute away from the routes serving the existing Downtown Carpark (Sturdee Street, the Lower Hobson Street slip lane adjacent to the Site), towards the routes directed to the Development's access points (Quay Street, Customs Street West and the Lower Hobson Street Flyover)
- ◆ The volumes on Quay Street remain similar, with no significant changes shown. While there will be an increase in trips exiting via the service lane vehicle crossing, there will also be a reduction in vehicles using Quay Street as a route to access the Downtown Carpark
- ◆ The change in vehicle volumes is mostly concentrated in the areas near the Development and Downtown Carpark access points. No significant changes in vehicle volumes are predicted in the wider network
- ◆ No increases of vehicle delays of more than 10 seconds are predicted in any scenario, both in the local area and the wider network, other than an increase of delays at the service lane in the PM

peak. All scenarios show a decrease in delays at the Downtown Carpark exit ramp onto Fanshawe Street, as this signalised intersection will no longer be required

- ◆ The Development will have negligible impact on overall vehicle travel times across the network, with average journey times for all vehicles increasing between 0 to 2 seconds compared to the future baseline
- ◆ No noticeable change to bus route travel times are predicted. There will be some small increases and decreases of -17 to +10 seconds for some bus routes. High volume bus routes in the area (including the NX and WX routes) or bus routes utilising Quay Street (NX1, 95 and 97 routes) are not predicted to have any notable increases to travel times.

Overall, we consider that the results of the SATURN network modelling of the City Centre have shown that the existing road network can efficiently accommodate the traffic demands of the Development.

Our traffic effects assessment of the site access points onto Customs Street West and Quay Street and of adjacent intersections concludes the following when the Development is operational.

- ◆ While traffic volumes using the Quay Street service lane access are expected to increase, the differences in delays and queues between the Future Baseline and With Development scenarios are minor.
- ◆ There are no operational issues predicted at the Customs Street West service lane access, which functions as a left-in/left-out arrangement with no significant outbound volumes. Similarly, there are no predicted issues associated with the hotel pick-up and drop-off access which also functions as a left-in/left-out arrangement with significantly lower traffic in comparison to the existing Downtown Carpark access.
- ◆ While turning volumes at the service lane are expected to increase, this will be partially offset by a reduction in through traffic volumes associated with the redistribution of existing Downtown Carpark trips. Although the development will generate more trips to the Quay Street service lane, the overall change in local network performance is not significant.
- ◆ Overall, both service lane access points and the hotel pick-up drop-off accesses are expected to operate within capacity, and the results do not indicate any safety or congestion related concerns. Post development, driver behaviour and traffic patterns are not expected to change or require change, and no adverse safety effects are anticipated.

In summary, we believe that both access points of the service lane can operate within capacity. The results do not indicate there will be any safety concerns as a result of turning traffic and congestion.

Summary

In summary, we consider that the Proposal will operate safely and efficiently from a transport perspective, as

- ◆ The Site has good walkable access to rapid and frequent public transport services, high-quality walking and cycling paths, and complementary land uses
- ◆ The proposed use of the vehicle accesses will not result in adverse effects on the surrounding road network nor internal site traffic, including

- The development and implementation of a Servicing and Loading Management Plan to ensure that all servicing vehicles that access the Development comply with the necessary vertical clearance restrictions
- The development and implementation of a Hotel Pick-up and Drop-off Management Plan to ensure the effective and safe use of the pick-up and drop-off spaces
- ◆ The vehicle traffic generated by the proposed activities can be readily accommodated by the capacity of the adjacent road network
- ◆ The infringements to the transport standards of the Unitary Plan do not generate adverse off-site effects, and any on-site effects can all be managed
- ◆ Demolition and construction traffic can be suitably managed consistent with standard practice.

Overall, we consider the operational transport effects of the Proposal to be acceptable. The development provides a well-integrated transport arrangement that aligns with relevant planning provisions, meets technical design expectations, and supports a safe and accessible urban environment. There are no traffic engineering or transport planning reasons to preclude consent from being granted, subject to the conditions recommended.

APPENDIX A

Unitary Plan assessment

CHAPTER E27 TRANSPORT ASSESSMENT

Chapter E27 Transport Standards

E27 Standard	Assessment
E27.6.1. Trip generation	
<p>(1) Where a proposal (except where excluded in Standard E27.6.1(2)) exceeds one of the following thresholds:</p> <ul style="list-style-type: none"> (a) a new development in Table E27.6.1.1 (b) 100 v/hr (any hour) for activities not specified in Table E27.6.1.1 requiring a controlled or restricted discretionary land use activity consent in the applicable zone where there are no requirements for an assessment of transport or trip generation effects. This standard does not apply to development activities provided for as permitted in the applicable zone; or (c) a proposed subdivision of land which has capacity under this Plan to accommodate more than 100 dwellings <p>Resource consent for a restricted discretionary activity is required</p> <p>(2) Standard E27.6.1(1) Does not apply where:</p> <ul style="list-style-type: none"> (a) a proposal is located in the Business – City Centre Zone 	<p>Does not apply</p> <p>The Development is located within the Business – City Centre Zone</p>
<p>PC79 - E27.6.1. Trip generation</p> <p>(1) Where a proposal (except where excluded in Standard E27.6.1(2)) exceeds one of the following thresholds:</p> <ul style="list-style-type: none"> (a) a new development or subdivision in Table E27.6.1.1; or (b) 100 v/hr (any hour) for activities not specified in Table E27.6.1.1 requiring a controlled or restricted discretionary land use activity consent in the applicable zone where there are no requirements for an assessment of transport or trip generation effects. This standard does not apply to development activities provided for as permitted in the applicable zone <p>resource consent for a restricted discretionary activity is required.</p>	<p>Does not apply</p> <p>The Development is located within the Business – City Centre Zone</p>
E27.6.2. Number of parking and loading spaces	
<p>(1) The number of parking spaces must meet rates specified in Table E27.6.2.1</p> <p>(T11 – T14) Residential: Dwellings</p> <ul style="list-style-type: none"> ◆ T11 Dwellings <75m2 GFA, maximum of 0.7 per dwelling ◆ T12 Dwellings ≥75 and < 90m2 GFA, maximum of 1.4 per dwelling ◆ T13 Dwellings ≥90m2 GFA, maximum of 1.7 per dwelling ◆ T14 Visitor spaces, maximum of 0.2 per dwelling <p>(T15) All other activities</p> <ul style="list-style-type: none"> ◆ Maximum of 1:200 m² GFA 	<p>Complies</p> <p>Refer to Section 8.1.1</p>
<p>(6) Bicycle parking</p> <ul style="list-style-type: none"> (a) the activities specified in Table E27.6.2.5 must provide the minimum number of bicycle parking spaces specified; and (b) the following bicycle parking requirements apply to new buildings and developments <p>(T81) Residential: Developments of 20 or more dwellings</p> <ul style="list-style-type: none"> ◆ Minimum of 1 visitor space per 20 dwellings ◆ Minimum of 1 secure space per dwelling without a dedicated garage <p>(T83) Residential: Visitor accommodation and boarding houses</p> <ul style="list-style-type: none"> ◆ Minimum of 1 visitor space plus 1 space per 20 rooms/beds 	<p>Complies</p> <p>Refer to Section 8.2</p>

<ul style="list-style-type: none"> ◆ Minimum of 1 secure space per 10 FTE employees (T86) Offices: greater than 10,000 m² GFA ◆ Minimum 10 spaces plus 1 space per 2,000 m² above 10,000 m² ◆ Minimum 1 secure space per 300 m² GFA of office (T88) Retail: Food and beverage: Greater than 350 m² GFA ◆ Minimum 1 visitor space per 350 m² GFA ◆ Minimum 1 secure space per 300 m² GFA (T90) Retail: All other retail: greater than 500 m² GFA up to 5,000 m² GFA ◆ Minimum 1 visitor space per 500 m² GFA ◆ Minimum 1 secure space per 300 m² GFA of office 	
<p>PC79 - (6) Bicycle parking</p> <p>(e) the activities specified in Table E27.6.2.5 must provide the minimum number of bicycle parking spaces specified;</p> <p>(aa) for residential developments, the required secure long-stay bicycle parking must be located and designed in a manner that (is):</p> <ol style="list-style-type: none"> i. not part of any required outdoor living space or landscaped area; ii. in a location accessible from either the road, vehicle access, pedestrian access or car parking area; iii. sheltered from the weather; iv. lockable and secure; xii. the following bicycle parking requirements apply to new buildings and developments <p>(T81) Residential: All residential developments</p> <ul style="list-style-type: none"> ◆ Minimum of 1 visitor space per 20 for developments of 20 or more dwellings ◆ Minimum of 1 secure space per dwelling without a dedicated garage or basement car parking space 	<p>Complies Refer to Section 8.2</p> <p>We note that the difference of the PC79 standards for bicycle parking is that secure bicycle parking is not required for residential activities with a basement car parking space. Given all residential units will have a basement parking space, no secure bicycle parking spaces for the residential activity are technically required.</p>
<p>(7) End-of-trip facilities:</p> <p>(a) the activities specified in Table E27.6.2.6 must provide end-of-trip facilities as listed below; and</p> <p>(b) the following end-of-trip facilities requirements apply to new buildings and development</p> <p>(T106-107) Offices, education facilities, hospitals</p> <ul style="list-style-type: none"> ◆ Greater than 2,500 m² up to 7,500 m² GFA. Two showers and changing area with space for storage of clothing ◆ Every additional 7,500 m² GFA. Two additional showers and changing area with space for storage of clothing. 	<p>Complies Refer to Section 8.3</p>
<p>(8) Number of loading spaces:</p> <p>(a) all activities must provide loading spaces as specified in Table E27.6.2.7</p> <p>(T108 – T111) Retail and industrial activities</p> <ul style="list-style-type: none"> ◆ Up to 300 m² GFA, no loading spaces required ◆ 300 m² to 5000 m² GFA, 1 loading space required ◆ 5,000 m² to 10000 m² GFA, 2 loading spaces required ◆ Greater than 10,000 m², 3 loading spaces required plus 1 space for every additional 10,000 m² <p>(T113 – T115) All other activities</p> <ul style="list-style-type: none"> ◆ Up to 5,000 m² GFA, no loading spaces required ◆ 5000 m² to 20,000 m² GFA, 1 loading space required 	<p>Complies Refer to Section 8.4.1</p>

<ul style="list-style-type: none"> ◆ Greater than 20,000 m² GFA, 2 loading spaces required ◆ Greater than 90,000 m² GFA, 3 loading spaces required plus 1 for every additional 40,000 m² 																
<p>Note: Accessible parking</p> <p>(a) where parking is provided, parking spaces are to be provided for people with disabilities and accessible routes from the parking spaces to the associated activity or road as required by the New Zealand Building Code D1/AS1. The dimensions and accessible route requirements are detailed in the New Zealand Building Code D1/AS1 New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121-2001)</p>	<p>Complies</p> <p>Refer to Section 8.1.3</p>															
<p>PC79 - (8) Number of loading spaces:</p> <p>(a) residential activities where part of the site has frontage to an arterial road as identified on the planning maps, must provide loading as specified in Table E27.6.2.7A.</p> <p>Add New Table E27.6.2.7A Minimum small loading space requirements</p> <table border="1"> <thead> <tr> <th><u>Activity</u></th> <th><u>GFA/Number of dwellings</u></th> <th><u>Minimum rate</u></th> </tr> </thead> <tbody> <tr> <td><u>(T111B)</u></td> <td><u>Developments where all dwellings have individual pedestrian access directly from a public road</u></td> <td><u>No loading space required</u></td> </tr> <tr> <td></td> <td><u>Up to 9 dwellings without individual pedestrian access directly from a public road</u></td> <td><u>No loading space required</u></td> </tr> <tr> <td></td> <td><u>Greater than 9 dwellings up to 5,000m² without individual pedestrian access directly from a public road</u></td> <td><u>1*</u></td> </tr> <tr> <td></td> <td><u>Greater than 5,000m²</u></td> <td><u>NA</u></td> </tr> </tbody> </table>	<u>Activity</u>	<u>GFA/Number of dwellings</u>	<u>Minimum rate</u>	<u>(T111B)</u>	<u>Developments where all dwellings have individual pedestrian access directly from a public road</u>	<u>No loading space required</u>		<u>Up to 9 dwellings without individual pedestrian access directly from a public road</u>	<u>No loading space required</u>		<u>Greater than 9 dwellings up to 5,000m² without individual pedestrian access directly from a public road</u>	<u>1*</u>		<u>Greater than 5,000m²</u>	<u>NA</u>	<p>Complies</p> <p>The Development has greater than 5,000m² GFA, so no small loading spaces are required</p>
<u>Activity</u>	<u>GFA/Number of dwellings</u>	<u>Minimum rate</u>														
<u>(T111B)</u>	<u>Developments where all dwellings have individual pedestrian access directly from a public road</u>	<u>No loading space required</u>														
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	<u>Greater than 9 dwellings up to 5,000m² without individual pedestrian access directly from a public road</u>	<u>1*</u>														
	<u>Greater than 5,000m²</u>	<u>NA</u>														
<p>E27.6.3.1. Size and location of parking spaces</p>																
<p>(1) Every parking space must</p> <p>(a) comply with the minimum dimensions given in Table E27.6.3.1.1 and Figure E27.6.3.1.1; and</p> <p>(b) be located on the same site as the activity to which it relates unless one of the following criteria is met:</p> <p>(i) the parking is located in an H7 Open Space Zone and the reserve, park or recreation area consists of more than one adjoining Certificate of Title. In that case, the parking must be located within the same reserve, park or recreation area as the activity to which it relates; or</p> <p>(ii) resource consent is granted to an alternative arrangement, such as shared parking, offsite parking, or non-accessory parking.</p> <p>(c) [deleted]</p> <p>(d) be kept clear and available at all times the activity is in operation, except where stacked parking is permitted by Standard E27.6.3.3(3) below</p> <p>(e) be located outside any area designated for road widening; and</p> <p>(f) parking located in part of any yard on the site (where it is permitted in the zone) must not:</p> <p>(i) impede vehicular access and movement on the site; and</p> <p>(ii) infringe any open space and landscape requirements for the relevant zone; and</p> <p>(g) not to be sold or leased separately from the activity for which it provides parking as an accessory activity unless a resource consent is granted to an alternative arrangement such as shared parking or off-site parking.</p>	<p>Does not comply</p> <p>(a) 4 small car parking spaces are proposed, which do not meet the minimum requirements. Refer to Section 8.1.5</p> <p>(b) parking will be located on the same site. The M Social parking spaces will be a continuation of the existing off-site parking arrangement</p> <p>(c) are not used for any other purpose</p> <p>(d) all parking spaces will be kept clear and available</p> <p>(e) all parking spaces are located outside any area designated for road widening;</p> <p>(f) Parking does not</p> <p>(i) impede vehicular access and movement on the site; and</p> <p>(ii) infringe any open space and landscape requirements for the relevant zone</p> <p>(g) parking spaces will not be sold or leased separately from the activity</p>															
<p>PC79 - E27.6.3.1. Size and location of parking spaces</p> <p>(1) Every parking space must</p>	<p>Does not comply</p> <p>The same infringement applies as above for the 4 small car parking spaces</p>															

<p>(a) comply with the minimum dimensions given in Table E27.6.3.1.1 and Figure E27.6.3.1.1; except accessible parking dimensions and accessible route requirements must be designed in accordance with the New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121- 2001); and</p>	<p>While some accessible parking spaces will not fully have 2.5 m of vertical clearance, we have assessed this under E27.6.3.5</p>
<p>E27.6.3.2. Size and location of loading spaces</p>	
<p>(1) Every loading space must:</p> <p>(a) comply with the minimum dimensions given in Table E27.6.3.2.1; and</p> <p>(b) be located on the same site as the activity to which it relates and be available at all times while the activity is in operation; and</p> <p>(c) be located outside any area designated for road widening; and</p> <p>(d) comply with the following when any yard of a site is used to provide the loading space (where it is permitted within the zone):</p> <p style="margin-left: 20px;">(i) ensure that the footpath or access to the rear of the site or access to an adjacent property is not blocked at any time; and</p> <p style="margin-left: 20px;">(ii) the use of the loading space does not create a traffic hazard on the road at any time.</p>	<p>Complies</p> <p>Refer to Section 8.4.3</p>
<p>PC79 - E27.6.3.2. Size and location of loading spaces</p> <p>(1) Every loading space must:</p> <p>(a) comply with the minimum dimensions given in Table E27.6.3.2.1; and</p> <p>(e) have a maximum crossfall of 1:50 (2%) in all directions</p>	<p>Complies</p> <p>All loading spaces will be flat</p>
<p>PC79 - E27.6.3.2(A). Accessible Parking</p>	
<p>(1) Accessible parking must be provided for all new activities, changes of activity type, and/or the expansion or intensification of an existing activity in all zones, except for those listed below in E27.6.3.2(A)(2):</p> <p>(2) Accessible parking is not required in the following zones, unless car parking is provided on-site, in which case the required number of accessible parking spaces must be determined in accordance with Table 1 or Table 2 below, whichever is relevant:</p> <p>Business Zones:</p> <p style="margin-left: 20px;">a) Business – City Centre Zone;</p> <p style="margin-left: 20px;">b) Business – Metropolitan Centre Zone;</p> <p style="margin-left: 20px;">c) Business – Town Centre Zone;</p> <p style="margin-left: 20px;">d) Business – Local Centre Zone;</p> <p style="margin-left: 20px;">e) Business – Mixed Use Zone;</p> <p style="margin-left: 20px;">f) Business – Neighbourhood Centre Zone.</p> <p>Residential Zones:</p> <p style="margin-left: 20px;">a) Residential - Terrace Housing and Apartment Buildings Zone.</p> <p>(3) For residential developments in residential zones (excluding the Terrace Housing and Apartment Buildings Zone unless car parking is provided on-site), accessible parking spaces must be provided for developments of 10 or more dwellings on a site.</p> <p>(4) The required number of onsite accessible parking spaces provided must be calculated using the following method:</p> <p style="margin-left: 20px;">i. For non-residential land uses:</p> <p style="margin-left: 40px;">Step 1 - Use the Parking Demand Guidelines in Appendix 23 to determine the theoretical parking demand.</p> <p style="margin-left: 40px;">Offices: a minimum of 1 per 45 m² GFA</p> <p style="margin-left: 40px;">Retail – all other retail (including food and beverage): 1 per 25 m² GFA</p> <p style="margin-left: 40px;">Visitor accommodation: 1 per unit or, where accommodation is not provided in the form of units, 0.3 per bedroom</p>	<p>Does not comply</p> <p>Refer to Section 8.1.3</p> <p>(1) Accessible car parking is required under this standard.</p> <p>(2) While the Site is located in the Business – City Centre zone, parking is already proposed on-site.</p> <p style="margin-left: 20px;">For residential, 160 spaces are proposed</p> <p style="margin-left: 20px;">For offices or hotel valet parking, 170 spaces are proposed</p> <p style="margin-left: 20px;">For retail, no parking spaces are proposed</p> <p>(3) Not applicable</p> <p>(4) (i)</p> <p>Step 1: The theoretical parking demand for non-residential activities is:</p> <ul style="list-style-type: none"> • Offices: 1,933 spaces for theoretical demand (1 space per 45 m² GFA, 87,000 m² proposed) • Retail food and beverage: 47 spaces for theoretical demand (1 space per 25 m² GFA, 1,179 m² proposed). However, we note that no on-site parking is proposed for the retail activity • Visitor accommodation (hotel): 200 spaces for theoretical demand (1 space per unit, 200 units proposed) • <p>Step 2:</p> <p>For non-residential land uses:</p> <p>For both offices and retail, the theoretical demand is higher than the actual parking provision.</p> <p>Based on the theoretical demand and Table 1, the number of accessible spaces required is</p>

Step 2 - Use Table 1 – Number of accessible parking spaces – Non-Residential, below to determine the required number of accessible car park spaces based on either the number of parking spaces that are proposed to be provided or the theoretical parking demand calculated in step 1, whichever is the higher.

Table 1 – Number of accessible parking spaces – Non-Residential land uses

Total number of parking spaces provided or theoretical parking spaces, whichever is the higher	Number of accessible parking spaces
1 – 20	Not less than 1
21 – 50	Not less than 2
For every additional 50 parking spaces or part of a parking space	Not less than 1

- ii. For retirement villages, supported residential care, visitor accommodation and boarding houses. The same method for calculating the required number of onsite accessible parking spaces for non-residential uses in 4(i) applies.
- iii. For residential land uses the required number of accessible parking spaces provided must be in accordance with Table 2 below:

Table 2 – Number of accessible parking spaces – Residential land uses

Number of dwellings	Number of accessible parking spaces
10 - 19	Not less than 1
20 - 29	Not less than 2
30 – 50	Not less than 3
For every additional 25 dwellings or units	Not less than 1

- Offices: not less than 40
- Retail food and beverage: not less than 2
- Hotel: not less than 5

For residential land uses:

160 residential units are proposed. Based on Table 2, not less than 8 accessible spaces are required.

For all activities, not less than 55 accessible parking spaces are required

21 accessible parking spaces are proposed, which does not meet the minimum requirement of 55 spaces. We have assumed this provision is sufficient to cover the residential requirement, but not the office, retail or hotel requirements

E27.6.3.3. Access and manoeuvring

(1) Every parking space must have driveways and aisles for entry and exit of vehicles to and from the road, and for vehicle manoeuvring within the site. Access and manoeuvring areas must accommodate the 85 percentile car tracking curves in Figure E27.6.3.3.1

Complies

Refer to Section 8.1.5 and 8.4.3

Refer to tracking assessments attached to this report – no reverse manoeuvring is required onto the road

(2) For every loading space accommodating heavy vehicles the access and manoeuvring areas associated with that loading space must comply with the tracking curves set out in the NZTA guidelines: RTS 18: NZ on-road tracking curves (2007)

Complies

Refer to Section 8.4

While 'NZTA guidelines: RTS 18: NZ on-road tracking curves (2007)' outline an 8 m rigid truck, we have used an 8.3 m rigid truck. We consider that an 8.3 m accounts for the 8 m truck in this guideline, and is slightly larger

PC79 - (2A) For every loading space required by Table E27.6.3.2.1.(T137A) the access and manoeuvring areas associated with that loading space must accommodate the 6.4m van tracking curves set out in Figure E27.6.3.3.3.

Does not apply

Loading is not required under Table E27.6.3.2.1.(T137A)

(3) Where a dwelling provides more than one parking space, these may be stacked. Stacked parking means access is required through another parking space.

Does not comply

Refer to Section 8.1.5

Tandem parking is proposed. These spaces could potentially be allocated to office tenancies, whereas the standard specifies dwellings only.

E27.6.3.4. Reverse manoeuvring

<p>(1) Sufficient space must be provided on the site so vehicles do not need to reverse off the site or onto or off the road from any site where any of the following apply:</p> <ul style="list-style-type: none"> (a) Four or more parking spaces are served by a single access; (b) there is more than 30m between the parking space and the road boundary of the site; or (c) access would be from an arterial road or otherwise within a Vehicle Access Restriction covered in Standard E27.6.4.1. 	<p>Complies</p> <p>Sufficient space is provided such that no reverse manoeuvring onto Customs Street West or Quay Street is required</p>
<p>PC79 - E27.6.3.4A. Heavy vehicle access</p>	
<p>(1) Where a site in a residential zone provides heavy vehicle access it must provide sufficient space on the site so an 8m heavy vehicle does not need to reverse onto or off the site or road, with a maximum reverse manoeuvring distance within the site of 12m</p> <p>(2) Heavy vehicle access and manoeuvring areas associated with access required by E27.6.3.4A(1) must comply with the tracking curves set out in the Land Transport New Zealand Road and traffic guidelines: RTS 18: New Zealand on-road tracking curves for heavy motor vehicles (2007).</p>	<p>Not Relevant</p> <p>The Development is not located in a residential zone</p>
<p>E27.6.3.5. Vertical clearance</p>	
<p>(1) To ensure vehicles can pass safely under overhead structures to access any parking and loading spaces, the minimum clearance between the formed surface and the structure must be:</p> <ul style="list-style-type: none"> (a) 2.1m where access and/or parking for cars is provided for residential activities (b) 2.3m where access and/or parking for cars is provided for all other activities (c) 2.5m where access and/or accessible parking for people with disabilities is provided; or (d) 3.8m where loading is required. 	<p>Does not comply</p> <p>Refer to Section 8.1.7 and 8.4.2</p> <p>Vertical clearance on the service lane is 3.6 m where servicing vehicles will travel, which is lower than the 3.8 m standard where loading is required</p> <p>Vertical clearances for access areas of accessible parking areas will not be 2.5 m. Accessible parking spaces on Level B03 will not have 2.5 m of full vertical clearance</p> <p>Vertical clearance in all other areas will meet the required standards</p>
<p>PC79 – E27.6.3.5. Vertical clearance</p> <p>(1) To ensure vehicles can pass safely under overhead structures to access any parking and loading spaces, the minimum clearance between the formed surface and the structure must be:</p> <ul style="list-style-type: none"> (c) 2.5m where access and/or accessible parking is provided and/or required; (ca) 2.8m where loading is required for residential activities denoted with an asterisk (*) in Table E27.6.2.7A; (cb) 3.8m where heavy vehicle access in Standard E27.6.3.4A is provided; or 	<p>Does not comply</p> <p>The same infringements as per E27.6.3.5 above apply. The PC79 amendments do not change this infringement</p>
<p>E27.6.3.6. Formation and gradient</p>	
<p>(1) Except for Standard E27.6.3.6(2) below, the whole area of parking and loading spaces, and manoeuvring areas and aisles must be formed, drained, provided with an all-weather surface to prevent dust and nuisance, and be marked out or delineated. This must be done before the activity to which those parking and loading spaces relate commences, and maintained for as long as that activity is continued.</p>	<p>Complies</p> <p>All parking and manoeuvring areas will be formed and drained with an all weather surface</p>
<p>(3) The gradient for the surface of any parking space must not exceed:</p> <ul style="list-style-type: none"> (a) 1 in 25 (4%) in any direction for accessible spaces for people with disabilities; or (b) 1 in 20 (5%) in any direction for other spaces. 	<p>Complies</p> <p>Refer to Section 8.1.6</p> <p>Parking spaces will be located in the basement and flat</p>
<p>(4) The gradient for the manoeuvring area must not exceed 1 in 8 (12.5%)</p>	<p>Complies</p> <p>Refer to Section 8.1.6</p> <p>The maximum gradient for parking spaces is not more than 1:8</p>
<p>E27.6.3.7. Lighting</p>	
<p>(1) Lighting is required where there are 10 or more parking spaces which are likely to be used during the hours of darkness. The parking and manoeuvring areas and associated pedestrian routes must be adequately lit during use in a manner that complies with the rules in Section E24 Lighting.</p>	<p>Can Comply</p> <p>Lighting will be provided, this will be confirmed as part of the future Building Consent</p>

<p>PC79 - E27.6.3.7. Lighting</p> <p>(2) Lighting is required, in residential zones to primary pedestrian access, vehicle access, parking and manoeuvring areas, where any of the following apply:</p> <ul style="list-style-type: none"> (a) There are four or more dwellings accessible from a primary pedestrian access which is not adjacent to a vehicle access; (b) There are 10 or more parking spaces; or (c) There are 10 or more dwellings. <p>Adequate lighting must be provided during the hours of darkness in a manner that complies with the rules in Section E24 Lighting.</p>	<p>To be assessed by others</p> <p>Lighting is assessed elsewhere in the application documents.</p>
<p>E27.6.4.1. Vehicle Access Restrictions</p>	
<p>(1) Vehicle Access Restrictions apply and new vehicle crossings must not be constructed to provide vehicle access across that part of a site boundary which is subject to:</p> <ul style="list-style-type: none"> (a) a Vehicle Access Restriction – General Control as shown on the planning maps in the Business – City Centre Zone; or (b) a Key Retail Frontage Control as shown on the planning maps 	<p>A vehicle access restriction applies</p> <p>The Quay Street service lane vehicle crossing is subject to a Vehicle Access Restriction – General Control. The Quay Street vehicle crossing is existing, and will be upgraded to improve separation between M Social and pedestrian safety</p>
<p>(2) Standard E27.6.4.1(3) below applies in any of the following circumstances:</p> <ul style="list-style-type: none"> (a) a new vehicle crossing is proposed; (b) a new activity is established on a site; (c) there is a change of type of activity 	<p>E27.6.4.1(3) applies</p> <p>A new activity will be established on site</p>
<p>(3) Vehicle Access Restrictions apply and vehicle crossings must not be constructed or used to provide vehicle access across that part of a site boundary which</p> <ul style="list-style-type: none"> (a) is located within 10m of any intersection as measured from the property boundary, illustrated in Figure E27.6.4.1.1; (b) is subject to the following types of Vehicle Access Restriction as identified on the planning maps in the zones listed in Table E27.6.4.1.1; (c) has frontage to an arterial road as identified on the planning maps; (d) is located closer than 30m from a railway level crossing limit line 	<p>A vehicle access restriction applies</p> <p>The vehicle crossing:</p> <ul style="list-style-type: none"> (a) The Hotel Drop-off western vehicle crossing on Customs Street West is located within 10 m of any intersection as measured from the property boundary (b) Is not subject to the following types of Vehicle Access Restriction as identified on the planning maps in the zones listed in Table E27.6.4.1.1 (The Vehicle Access Restriction – General Control is covered by Standard E27.6.4.1(1)(a)); (c) Has frontages to arterial roads (Quay Street and Customs Street West) as identified on the planning maps; (d) Is not located closer than 30 m from a railway level crossing limit line
<p>E27.6.4.2. Width and number of vehicle crossings</p>	
<p>(1) The maximum number of vehicle crossings permitted for any site and separation distance between crossings is specified in Table E27.6.4.2.1.</p> <p>(T143) Sites subject to a Vehicle Access Restriction General Control in the Business – City Centre Zone</p> <ul style="list-style-type: none"> ◆ No crossings permitted <p>(T144) Sites subject to E27.6.4.1(2) and (3)</p> <ul style="list-style-type: none"> ◆ One crossing per 50m of site frontage ◆ 2m where two crossings on adjacent sites can be combined and where the combined crossings do not exceed a total width of 6m at the property boundary, no minimum separation distance will apply ◆ Minimum of 6m separation between crossing serving the same site 	<p>Does not comply</p> <p>The Quay Street frontage is subject to a Vehicle Access Restriction General Control. No crossings are permitted. However, we note that the existing crossing will be utilised. Therefore, there will not be any change on Quay Street for the number of crossings.</p> <p>Three crossings on the Customs Street West frontage are proposed, of which one will be an upgrade of an existing crossing for the service lane and the other two a relocation of the existing Downtown Car park.</p> <p>All crossings have more than 2 m separation from neighbouring vehicle crossings and are at least 6 m from each other</p>
<p>(2) The width of a vehicle crossing(s) must meet the minimum width and not exceed the maximum width as specified in Table E27.6.4.3.2.</p> <p>(T153) Centres (serving 10 spaces or more)</p> <ul style="list-style-type: none"> ◆ Minimum width of crossing at site boundary of 5.5m (two-way) ◆ Maximum width of crossing at site boundary of 6.0m (two-way) 	<p>Does not comply</p> <p>Refer to Section 7.2</p> <p>The widths of the Hotel drop-off vehicle crossings exceed the maximum of 3.5 m.</p> <p>The width of the Quay Street service lane vehicle crossing exceeds 6 m.</p>

	The Custom Street West service lane vehicle crossing complies.						
(3) With the exception of vehicle crossings on unsealed roads, all vehicle crossings must be designed and constructed to maintain the level, colour, and materials of the footpath to clearly identify to vehicles that pedestrians have priority.	Complies The vehicle crossing will be constructed in general accordance with AT vehicle crossing design standards and will maintain a consistent level, colour and material as the adjacent footpath.						
(5) Where a vehicle crossing is altered or no longer required, the crossing, or redundant section of crossing, must be reinstated as berm and/or footpath and the kerbs replaced. The cost of such work will be borne by the owner of the site previously accessed by the vehicle crossing	Will comply The applicant will reinstate the berm, footpath and kerb at their cost for the redundant vehicle crossings service the Downtown Carpark						
E27.6.4.3. Width of vehicle access and queuing requirements							
(1) Every on-site parking and loading space must have vehicle access from a road, with the vehicle access complying with the following standards for width: (a) passing bays are provided in accordance with Table E27.6.4.3.1; (T148) All other zones <ul style="list-style-type: none"> Where the length of access exceeds 50m and the width of access is less than 5.5m, passing bays are required at a maximum of 50m spacing Passing bays should be at least 5.5m wide over 7m with 45 degree tapers (b) meeting the minimum formed access width specified in Table E27.6.4.3.2. (T153) Centres (serving 10 spaces or more) Minimum width of 5.5m (providing for two-way movement), 1.5 m pedestrian access for rear sites	Complies Refer to Section 7.2.5 The accessways are at least 5.5 m which accommodate two-way vehicle movement As outlined in Section 7.3, pedestrians will be able to access the Site through many locations						
PC79 - E27.6.4.3. Width of vehicle access and queuing requirements (1) Every on-site parking and loading space must have vehicle access from a road, with the vehicle access complying with the following standards: c) meeting the minimum speed management measure spacing specified in Table E27.6.4.3.3 Table E27.6.4.3.3 Speed management requirements <table border="1"> <thead> <tr> <th>Activity</th> <th>Length of vehicle access</th> <th>Location of minimum speed management measures</th> </tr> </thead> <tbody> <tr> <td>(T156A) Residential zones</td> <td>Exceeds 30m</td> <td>Not more than 10m from the site boundary with the legal road; and not more than 30m spacing between speed management measures.</td> </tr> </tbody> </table> Note: Where heavy vehicle access and speed management measures are required, the design of speed management measures should include consideration of heavy vehicle requirements.	Activity	Length of vehicle access	Location of minimum speed management measures	(T156A) Residential zones	Exceeds 30m	Not more than 10m from the site boundary with the legal road; and not more than 30m spacing between speed management measures.	Complies (c) The Development is not located in a residential zone, so no speed management measures are required under this standard
Activity	Length of vehicle access	Location of minimum speed management measures					
(T156A) Residential zones	Exceeds 30m	Not more than 10m from the site boundary with the legal road; and not more than 30m spacing between speed management measures.					
(2) Access must be designed so that vehicles using or waiting to use fuel dispensers, ticket vending machines, remote ordering facilities and devices, entrance control mechanisms, or other drive-through facilities do not queue into the adjoining road reserve or obstruct entry to or exit from the site.	Complies No mechanisms are proposed on the service lane or hotel drop-off area						
E27.6.4.4. Gradient of vehicle access							
(1) The gradient of the access must not be steeper than specified in Table E27.6.4.4.1: (T157) vehicle access serving any other residential activities <ul style="list-style-type: none"> Maximum gradient of 1:5 (20%) (T158) vehicle access used by heavy vehicles <ul style="list-style-type: none"> Maximum gradient of 1:8 (12.5%) (T159) vehicle access serving all other activities <ul style="list-style-type: none"> Maximum gradient of 1:6 (16.7%) 	Complies The gradients of all vehicle access comply						

<p>(2) To avoid the underside of the car striking the ground, as illustrated in Figure E27.6.4.4.2, access with a change in gradient exceeding 1 in 8 (greater than 12.5 per cent change) at the summit or a 1 in 6.7 (15 per cent change) at a sag must include transition sections to achieve adequate ground clearance, refer to Figure E27.6.4.4.3. Typically, a transition section requires a minimum length of 2m.</p>	<p>Complies The change in vehicle access gradient does not exceed 1:8</p>
<p>(3) All vehicle access must be designed so that where the access adjoins the road there is sufficient space onsite for a platform so that vehicles can stop safely and check for pedestrians and other vehicles prior to exiting. This is illustrated in Figure E27.6.4.4.4. The platform must have a maximum gradient no steeper than 1 in 20 (5 per cent) and a minimum length of 4m for residential activities and 6m for all other activities.</p>	<p>Complies A gradient platform of at least 6 m at 1:20 is provided for all vehicle crossings</p>
<p>E27.6.5. Design and location of off-road pedestrian and cycling facilities</p>	
<p>(1) The design and location of the proposed facility shall provide connections to existing pedestrian and cycling routes and facilities.</p>	<p>Not Relevant This standard only applies to public facilities located outside of the legal road.</p>
<p>(2) The width of the path is designed to accommodate the anticipated number and type of users.</p>	
<p>(3) The surface of the path is designed to safely provide for the anticipated number and type of users.</p>	
<p>PC79 - E27.6.6. Design and location of pedestrian access in residential zones</p>	
<p>(1) Where two or more dwellings are proposed in residential zones, primary pedestrian access must be provided which meets the following:</p> <ul style="list-style-type: none"> (a) have the minimum pedestrian access width and separation specified in Table E27.6.6.1 for its full length; Note 1: Works within the legal road, such as connections to public footpaths, require prior approval from Auckland Transport as the road controlling authority. This approval is separate and additional to any land use or subdivision approval required. (c) have a gradient no greater than: <ul style="list-style-type: none"> (i) 1 in 12 for pedestrian access which is not adjacent to vehicle access; (ii) the maximum vehicle access gradient as specified in Table E27.6.4.4.1 where the pedestrian access is adjacent to vehicle access; (e) have a surface treatment which is firm, stable and slip resistant in any weather conditions; (f) provide direct and continuous access to the dwellings from a public footpath; (g) be free from permanent obstructions and have a clear height of at least 2.1m for its full length. <p>(2) A minimum clear width of 3m and a minimum clear height of 2.1m for its full length is required for primary pedestrian access where not adjacent to vehicle access and serving:</p> <ul style="list-style-type: none"> (a) up to three dwellings and has a length greater than 50m; or (b) four or more dwellings <p>(3) For the purposes of (2) above, the clear width may include:</p> <ul style="list-style-type: none"> (a) the minimum 1.8m formed primary pedestrian access width; (b) landscape treatment with a maximum mature height of 600mm; (c) lighting infrastructure. <p>(4) Standards E27.6.6(1), (2) and (3) above do not apply where:</p> <ul style="list-style-type: none"> (a) up to three dwellings are proposed on a site and vehicle access is provided to each dwelling; or (b) a dwelling directly fronts and has direct access to a street. <p>(5) For four or more dwellings in residential zones, pedestrian access must be provided to each parking space within a parking area (excluding garages) consisting of four or more parking spaces served by the same vehicle access and:</p> <ul style="list-style-type: none"> (a) have a minimum width of 1.2m; (b) be vertically separated from trafficable areas as shown in Figure E27.6.4.3.1; (c) connect to the primary pedestrian access or the dwellings associated with those parking spaces; (d) have a surface treatment which is firm, stable and slip resistant in any weather condition; and (e) be free from permanent obstructions and have a clear height of 2.1m for its full length. 	<p>Not Relevant The Development is not located in a residential zone.</p>

This standard does not apply where the pedestrian access forms part of a primary pedestrian access.	
PC79 - E27.6.7. Provision for electric vehicle charging	
<p>Purpose: to ensure that any undercover car parks for new semi-detached dwellings or for new dwellings within a terrace or apartment building are provided with the capability to install Electric Vehicle Supply Equipment.</p> <p>(1) Any new dwellings with car parking (with the exception of new detached dwellings) must provide each undercover car park with the capability to install Electric Vehicle Supply Equipment with designated space for the necessary conduit, circuit and metering between the car park and an electrical distribution board on the same building storey, or ground level if the car parking space is at ground level.</p> <p>(a) This standard does not apply to any car parking permanently allocated to visitors.</p>	<p>To be assessed by others</p> <p>Electric vehicle charging is assessed elsewhere in the application documents.</p>

Summary of E27 standards infringements

- ◆ E27.6.3.1(1) + PC79 E27.6.3.1(1) Size and location of parking spaces
 - 4 small carpark spaces do not meet the minimum dimensions required
- ◆ E27.6.4.1(1) Vehicle access restrictions
 - Use of an existing vehicle crossing subject to Vehicle Access Restriction – General Control (Quay Street)
- ◆ E27.6.4.1(2 and 3) Vehicle access restrictions
 - Vehicle access onto an arterial road (Customs Street West and Quay Street)
- ◆ E27.6.4.1(3) Vehicle access restrictions:
 - Vehicle crossing within 10 m of an intersection (The Hotel Drop-off western vehicle crossing on Customs Street West)
- ◆ E27.6.4.2(1) Width and number of vehicle crossings
 - The Quay Street frontage is subject to a Vehicle Access Restriction General Control. No crossings are permitted
 - Three crossings on the Customs Street West frontage are proposed where 2 are permitted
- ◆ E27.6.4.2(2) Width and number of vehicle crossings
 - The widths of the Hotel drop-off vehicle crossings exceed the maximum of 3.5 m.
 - The width of the Quay Street service lane vehicle crossing exceeds 6 m
- ◆ E27.6.3.3(3) Stacked parking: 21 tandem spaces are proposed which could potentially be allocated to the office activity, whereas only residential is permitted
- ◆ E27.6.3.5 Vertical clearance: height restrictions for servicing vehicles – 3.6 m of vertical clearance is provided whereas 3.8 m is required. Accessible parking spaces require 2.5 m of vertical clearance, whereas 2.3 – 2.4 m is provided for areas accessing the spaces
- ◆ PC79 E27.6.3.2(A) Accessible parking: 21 accessible parking spaces are provided, whereas not less than 55 spaces are required

Chapter E27 Transport Restricted Discretionary Assessment Criteria

E27.8.2.(8) – Infringes on design standards for parking/loading areas or access under Standard E27.6.3, E27.6.4.2, E27.6.4.3 and E26.6.4.4
Infringements: Height restrictions for servicing vehicles – 3.6 m of vertical clearance is provided whereas 3.8 m is required
Accessible parking spaces require 2.5 m of vertical clearance, whereas 2.3 – 2.4 m is provided for areas accessing the spaces
Stacked parking: 21 tandem spaces are proposed which could potentially be allocated to the office activity, whereas only residential is permitted
4 small carpark spaces do not meet the minimum parking dimensions required
The Quay Street frontage is subject to a Vehicle Access Restriction General Control. No crossings are permitted where 1 is proposed/modified
Three vehicle crossings on the Customs Street West frontage are proposed where 2 are permitted
The widths of the Hotel drop-off vehicle crossings exceed the maximum width of 3.5 m
The width of the Quay Street service lane vehicle crossing exceeds 6 m

Assessment Criteria	Comment
<p>(A) effects on the safe and efficient operation of the adjacent transport network having regard to:</p> <ul style="list-style-type: none"> (i) <i>the effect of the modification on visibility and safe sight distances;</i> (ii) <i>existing and future traffic conditions including speed, volume, type, current accident rate and the need for safe manoeuvring;</i> (iii) <i>existing pedestrian numbers, and estimated future pedestrian numbers having regard to the level of development provided for in this Plan; or</i> (iv) <i>existing community or public infrastructure located in the adjoining road, such as bus stops, bus lanes, footpaths and cycleways.</i> <p>(B) effects on pedestrian amenity or the amenity of the streetscape, having regard to:</p> <ul style="list-style-type: none"> (i) <i>the effect of additional crossings or crossings which exceed the maximum width; or</i> (ii) <i>effects on pedestrian amenity and the continuity of activities and pedestrian movement at street level in the Business – City Centre Zone, Business – Metropolitan Centre Zone, Business – Town Centre Zone and Business – Local Centre Zone.</i> <p>(C) the practicality and adequacy of parking, loading and access arrangements having regard to:</p> <ul style="list-style-type: none"> (i) <i>site limitations, configuration of buildings and activities, user requirements and operational requirements;</i> (ii) <i>the ability of the access to accommodate the nature and volume of traffic and vehicle types expected to use the access. This may include considering whether a wider vehicle crossing is required to:</i> <ul style="list-style-type: none"> • <i>comply with the tracking curve applicable to the largest vehicle anticipated to use the site regularly;</i> • <i>accommodate the traffic volumes anticipated to use the crossing, especially where it is desirable to separate left and right turn exit lanes;</i> <ul style="list-style-type: none"> - <i>the desirability of separating truck movements accessing a site from customer vehicle movements;</i> - <i>the extent to which reduced manoeuvring and parking space dimensions can be accommodated because the parking will be used by regular users familiar with the layout, rather than by casual users, including the manoeuvres required to enter and exit parking spaces;</i> (iii) <i>any use of mechanical parking installation such as car stackers or turntables does not result in queuing beyond the site boundary; or</i> (iv) <i>any stacked parking is allocated and managed in such a way that it does not compromise the operation and use of the parking area.</i> 	<p>Refer to Section 8.4.2 for service vehicles</p> <p>Refer to Section 8.1.7 for accessible parking spaces</p> <p>Refer to Section 8.1.5 for tandem space allocation and small car parking spaces</p> <p>(A) Not applicable. The vertical clearance within the service lane or the accessible parking spaces will not affect the adjacent transport network. Tandem space parking allocation for the office activity will not affect the operation of the adjacent transport network. Small car parking spaces will not affect the operation of the adjacent transport network</p> <p>(B) Not applicable. The vertical clearance within the service lane or the accessible parking spaces will not affect pedestrian amenity or amenity of the streetscape. Tandem space parking allocation for the office activity will not affect pedestrian amenity or amenity of the streetscape. Small car parking spaces will not affect pedestrian amenity or amenity of the streetscape</p> <p>(C)</p> <p>(i) The existing layout of the service lane and the surrounding buildings mean there is already existing vertical clearance restrictions which will affect servicing vehicles. Trucks currently use the service lane with these restrictions in place. These restrictions will continue to apply, and can be managed with a Servicing and Loading Management Plan. For accessible parking spaces, there are internal vertical clearance restrictions such as overhead columns. The tandem space allocation can be managed by office users. The small car parking spaces will be used by regular users, who will be aware that the space is only suitable for smaller cars.</p> <p>(ii) Infringements are not applicable to manoeuvring at the access</p> <p>(iii) Not applicable</p> <p>(iv) The tandem spaces can be managed by office users if allocated to the same tenancy. The tandem spaces are located on levels B02 to B04, which contain 7 tandem spaces per level. The spaces are located in areas which are not accessed from the main circulating aisles, which means they will not compromise the operation and use of the parking area.</p> <p>Applicable Infringements <i>The widths of the Hotel drop-off vehicle crossings exceed the maximum width of 3.5 m.</i></p>

Three vehicle crossings on the Customs Street West frontage are proposed where 2 are permitted

(A)

- The drop-off area is confined, inherently restricting vehicle speeds when entering and exiting the site. The low-speed environment minimises conflict potential and provides drivers with sufficient time to observe and respond to pedestrians.
- A physical median separates the drop-off area from the footpath, providing a clear delineation between vehicle and pedestrian spaces. The wider vehicle crossing reduces the likelihood of vehicles overhanging or encroaching onto the pedestrian path and enhances safety for footpath users
- The hotel drop-off operations will be actively managed by on-site hotel staff, ensuring efficient vehicle circulation and preventing queuing or blocking of the vehicle crossings. Operational management will also assist in maintaining pedestrian safety during busy periods
- There is adequate intervisibility between pedestrians and drivers, with unobstructed sightlines along both approaches to the vehicle crossings. This allows pedestrians to clearly see approaching vehicles and vice versa
- Drivers exiting via the eastern vehicle crossing have clear visibility to the west along Customs Street West, ensuring they can safely identify approaching traffic and pedestrians before entering the road.

(B) There are no adverse impacts on pedestrian amenity expected with the slightly wider and an excess vehicle crossing. The existing Downtown Carpark vehicle access has the same number of vehicle crossings and both significantly wider vehicle crossings in comparison to the proposed Hotel pick-up and drop-off vehicle crossings, which will be redesigned, overall minimising the space for conflict. In addition, there will be much less volume of traffic using the Hotel pick-up and drop-off compared to the existing Downtown Carpark.

(C) The vehicle crossings have been designed to accommodate a 7.4 m passenger transporter, which is the largest vehicle expected to service the hotel for guest drop-offs and shuttles. The additional width is necessary to allow safe entry and exit tracking curves and manoeuvring by this vehicle type

Applicable Infringements

The Quay Street frontage is subject to a Vehicle Access Restriction General Control. No crossings are permitted where 1 is proposed/modified.

The width of the Quay Street service lane vehicle crossing is 7.6 m which exceeds 6 m maximum.

Refer to Section 7.2.2

(A)

- The existing width of the vehicle crossing at the property boundary is not clearly defined, as this section of Quay Street functions as a slow-speed shared environment with pedestrians. In practice, the existing vehicle crossing already exceeds the 6.0 m maximum width. The current proposal retains the existing crossing location but modifies its design to improve operational efficiency and safety outcomes, rather than introducing new infringements

	<ul style="list-style-type: none"> • There are no changes to the existing sightlines compared with the current situation. Drivers exiting the site will continue to have excellent visibility to the west towards Lower Hobson Street and to the east towards Lower Albert Street • Speed management measures are proposed near the property boundary, and the existing speed humps within the service lane will be retained. These measures will maintain low vehicle speeds and improve pedestrian safety within the shared area <p>(B) Compared with the existing arrangement, where there is no defined vehicle crossing width, the proposed design represents an improvement in pedestrian safety and speed management. It is also noted that the existing crossing has no recorded history of serious crashes, as outlined in Section 5.5.</p> <p>(C)</p> <ul style="list-style-type: none"> • The 7.6 m-wide vehicle crossing accommodates two-way vehicle movement, with the directions of travel physically separated. In effect, it will operate as two narrower crossings for each direction (3.3 m and 3.8 m wide respectively). • A narrower width could be achieved, but at the detriment of the physical separation in a direction • The site has a single vehicle crossing from Quay Street, which is separated by more than 2 m from the M Social vehicle crossing at the property boundary. The refinements to this crossing ensure the separation distance now complies with the Unitary Plan standard.
<p>PC79 – E27.8.2.(8) – Infringes on design standards for parking/loading areas or access under Standard E27.6.3, E27.6.4.2, E27.6.4.3, E27.6.4.4 and E27.6.6</p> <p>Infringements: Height restrictions for servicing vehicles – 3.6 m of vertical clearance is provided whereas 3.8 m is required</p> <p>Accessible parking spaces require 2.5 m of vertical clearance, whereas 2.3 – 2.4 m is provided for areas accessing the spaces</p> <p>Stacked parking: 21 tandem spaces are proposed which could potentially be allocated to the office activity, whereas only residential is permitted</p> <p>4 small carpark spaces do not meet the minimum parking dimensions required</p> <p>The Quay Street frontage is subject to a Vehicle Access Restriction General Control. No crossings are permitted where 1 is proposed/modified</p> <p>Three vehicle crossings on the Customs Street West frontage are proposed where 2 are permitted</p> <p>The widths of the Hotel drop-off vehicle crossings exceed the maximum width of 3.5 m</p> <p>The width of the Quay Street service lane vehicle crossing exceeds 6 m</p>	
<p>(A) effects on the safe and efficient operation of the adjacent transport network having regard to:</p> <ul style="list-style-type: none"> (i) <i>the effect of the modification on visibility and safe sight distances;</i> (ii) <i>existing and future traffic conditions including speed, volume, type, current accident rate and the need for safe manoeuvring;</i> (iii) <i>existing pedestrian numbers, and estimated future pedestrian numbers having regard to the level of development provided for in this Plan;</i> (iv) <i>existing community or public infrastructure located in the adjoining road, such as bus stops, bus lanes, footpaths and cycleways- and</i> (v) <i>the extent to which the management plan for the development identifies and mitigates risk to all site and road users.</i> <p>(B) effects on pedestrian amenity or the amenity of the streetscape, having regard to:</p> <ul style="list-style-type: none"> (i) <i>the effect of additional crossings or crossings which exceed the maximum width; or</i> (ii) <i>effects on pedestrian amenity and the continuity of activities and pedestrian movement at street level in the Business – City Centre Zone, Business – Metropolitan Centre Zone, Business – Town Centre Zone and Business – Local Centre Zone.</i> <p>(C) the practicality and adequacy of parking, loading and access arrangements having regard to:</p> <ul style="list-style-type: none"> (i) <i>site limitations, configuration of buildings and activities, user requirements and operational requirements;</i> 	<p>Refer to E27.8.2.(8) above for our assessment of the majority of these items. The PC79 amendments are highlighted in red text to the left.</p> <p>(A)(v) As outlined in Section 8.4.2 we have recommended a Servicing and Loading Management Plan to control loading activities, which will ensure trucks comply with the vertical clearance restrictions. For the affected accessible spaces, these will be allocated to regular users who will be familiar with the restricted clearances. For the tandem spaces, if these are allocated to the office activity, they will need to be allocated to the same tenancy to ensure use of the spaces can be coordinated. The small parking spaces will also be assigned to regular users, who will be aware of the smaller dimensions.</p> <p>(D) Not applicable, the Site is not located in a residential zone</p> <p>(E) The service lane or hotel drop-off will not be serviced by emergency vehicles. FENZ vehicles require 4 m of vertical clearance. We note this is not provided in the current design. It is anticipated that emergency services will be able to utilise Customs Street West or Lower Hobson Street during emergencies.</p>

<p>(ii) <i>the ability of the access to accommodate the nature and volume of traffic and vehicle types expected to use the access. This may include considering whether a wider vehicle crossing is required to:</i></p> <ul style="list-style-type: none"> • <i>comply with the tracking curve applicable to the largest vehicle anticipated to use the site regularly;</i> • <i>accommodate the traffic volumes anticipated to use the crossing, especially where it is desirable to separate left and right turn exit lanes;</i> <ul style="list-style-type: none"> - <i>the desirability of separating truck movements accessing a site from customer vehicle movements;</i> - <i>the extent to which reduced manoeuvring and parking space dimensions can be accommodated because the parking will be used by regular users familiar with the layout, rather than by casual users;</i> <p>(iii) <i>any use of mechanical parking installation such as car stackers or turntables does not result in queuing beyond the site boundary; or</i></p> <p>(iv) <i>any stacked parking is allocated and managed in such a way that it does not compromise the operation and use of the parking area.</i></p> <p>(D) the safety and practicality of pedestrian access, in residential zones, having regard to:</p> <p>(i) <i>site limitations, configuration of buildings and activities, user requirements and operational requirements;</i></p> <p>(ii) <i>the number of dwellings / future occupants that a primary pedestrian access is serving;</i></p> <p>(iii) <i>the extent to which a primary pedestrian access is direct, continuous, obstruction-free and safely accommodates different users and abilities including minimisation of gradients, provision of landing areas and avoidance of steps;</i></p> <p>(iv) <i>space limitations and constraints within basement parking areas;</i></p> <p>(v) <i>the safety of pedestrians where a pedestrian access crosses trafficable areas, considering the design of the crossing, visibility between drivers and pedestrians, and vehicle speeds;</i></p> <p>(vi) <i>the extent to which the design incorporates Crime Prevention Through Environmental Design principles;</i></p> <p>(vii) <i>the extent to which the design incorporates Universal Design principles, including the extent to which a primary pedestrian access is slip-resistant under all conditions and where primary pedestrian access is not adjacent to vehicle access and includes steps, provides a footpath and/or ramps as specified in NZS 4121:2001 Design for access and mobility: Buildings and associated facilities;</i></p> <p>(viii) <i>the need to separate pedestrian areas from vehicle access, parking, manoeuvring and reversing areas; and</i></p> <p>(ix) <i>the avoidance of conflict between users.</i></p> <p>(E) The safety and functionality of emergency responder access.</p>	<p>Applicable Infringements</p> <p><i>The Quay Street frontage is subject to a Vehicle Access Restriction General Control. No crossings are permitted where 1 is proposed/modified.</i></p> <p><i>The width of the Quay Street service lane vehicle crossing is 7.6 m which exceeds 6 m maximum.</i></p> <p>(A) (v) Refer to Section 8.4.2 where we discuss a Service and Loading Management Plan. This will allow service vehicles that utilise the servicing area and the Quay Street vehicle crossing to be of the right size to manoeuvre in and out of the access.</p> <p>(D) Not applicable, the Site is not located in a residential zone</p> <p>(E) Not applicable, emergency vehicles will not use this vehicle crossing</p> <p>Applicable Infringements</p> <p><i>The widths of the Hotel drop-off vehicle crossings exceed the maximum width of 3.5 m. Three vehicle crossings on the Customs Street West frontage are proposed where 2 are permitted</i></p> <p>(A) (v) Refer to Section 10 for the hotel pick-up and drop-off management plan. The hotel drop-off operations will be actively managed by on-site hotel staff, ensuring efficient vehicle circulation and preventing queuing or blocking of the vehicle crossings. Operational management will also assist in maintaining pedestrian safety during busy periods.</p> <p>(D) Not applicable, the Site is not located in a residential zone</p> <p>(E) Not applicable, emergency vehicles will not use this vehicle crossing</p>
<p>E27.8.2.(9) – Use of existing vehicle where vehicle access restriction applies under Standard E27.6.4.1(1)</p> <p>Infringement: use of the existing Quay Street vehicle crossing subject to a Vehicle Access Restriction – General Control</p>	
<p>Assessment Criteria</p>	<p>Comment</p>
<p>(A) Effect on transport network</p> <p>(i) <i>effects of the location and design of the access on the safe and efficient operation of the adjacent transport network having regard to:</i></p> <ul style="list-style-type: none"> • <i>visibility and safe sight distances;</i> • <i>existing and future traffic conditions including speed, volume, type, current accident rate, and the need for safe manoeuvring;</i> • <i>proximity to and operation of intersections;</i> • <i>existing pedestrian numbers, and estimated future pedestrian numbers having regard to the level of development provided for in the this Plan; or</i> • <i>existing community or public infrastructure located in the adjoining road, such as bus stops, bus lanes and cycleways.</i> <p>(B) Street and pedestrian amenity:</p> <p>(i) <i>the effects on the continuity of activities and pedestrian movement at street level in the Business – City Centre Zone, Business-Metropolitan Centre Zone, Business – Town Centre Zone and Business – Local Centre Zone; or</i></p> <p>(ii) <i>the extent to which the existing crossing is to be upgraded as a part of the development so as to improve the visual amenity of the street.</i></p>	<p>Refer to Section 7.2.2</p> <p>(A)</p> <p>(i)</p> <ul style="list-style-type: none"> • <i>Visibility will not change compared to existing. Visibility is available looking towards the Lower Hobson Street intersection in the west and the Lower Albert Street intersection in the east direction</i> • <i>Quay Street has a speed limit of 30 km/h. No injury crashes have been reported in the past five years. Safe manoeuvring is available</i> • <i>The access has at least 50 m of separation from Lower Hobson Street and Lower Albert Street</i> • <i>Pedestrian volumes are likely high in this area of the City Centre. The Development will provide new north-south and east-west connectivity for pedestrians to potentially encourage pedestrians to travel away from the access</i>

	<ul style="list-style-type: none"> While there are bus stops east of the access, there will be no physical change compared to existing. Any vehicles using the access will be required to give-way to buses, and will need to comply with the bus lane restrictions <p>(B)</p> <p>(i) While there will be an increase in vehicle volumes using the access, pedestrians will still be able to safely walk through the Quay Street access. The layout of the street operates as a shared space, promoting a low speed environment. There is good visibility between pedestrians and vehicles at this location. The proposed Quay Street vehicle crossing design will also include new speed management measures and separation from M Social at the property boundary, to improve pedestrian amenity and delineation.</p> <p>(ii) As noted above, the vehicle crossing will include speed management measures and a physical separation at the boundary. Visual amenity can be considered in the final implementation of these measures.</p>
<p>E27.8.2.(11) – Construction/use of new vehicle crossing where vehicle access restriction applies</p> <p>Infringements:</p> <ul style="list-style-type: none"> vehicle access onto an arterial road – Customs Street West vehicle access onto an arterial road – The Hotel Drop-off vehicle crossings onto Custom Street West vehicle crossing within 10 m of an intersection – The Hotel Drop-off western vehicle crossing on Customs Street West 	
Assessment Criteria	Comment
<p>(A) this applies where a Vehicle Access Restriction is identified in Standard E27.6.4.1(2) and Standard E27.6.4.1(3), other than a Vehicle Access Restriction Level Crossing or a Vehicle Access Restriction Motorway Interchange:</p> <p>(i) <i>effects of the location and design of the access on the safe and efficient operation of the adjacent transport network having regard to:</i></p> <ul style="list-style-type: none"> visibility and safe sight distances existing and future traffic conditions including speed, volume, type, current accident rate, and the need for safe manoeuvring; proximity to and operation of intersections; existing pedestrian numbers, and estimated future pedestrian numbers having regard to the level of development provided for in this Plan existing community or public infrastructure located in the adjoining road, such as bus stops, bus lanes and cycleways; <p>(ii) <i>the effects on the continuity of activities and pedestrian movement at street level in the Business – City Centre Zone, Business – Metropolitan Centre Zone, Business – Town Centre Zone and Business – Local Centre Zone; or</i></p> <p>(iii) <i>the practicability and adequacy of the access arrangements considering site limitations, arrangement of buildings and activities, user requirements and operational requirements, proximity to and operation of intersections, having regard to:</i></p> <ul style="list-style-type: none"> the extent to which the site can reasonably be served by different access arrangements including: <ul style="list-style-type: none"> access from another road; shared or amalgamated access with another site or sites via a frontage road, such as a slip lane or service road; or the extent to which the need for access can reasonably be avoided by entering into a shared parking and/or loading arrangement with another site or sites in the immediate vicinity <p>(B) for any proposed access within a Vehicle Access Restriction Motorway Interchange Control:</p> <p>(i) <i>the intensity, scale and traffic generating nature of activities on the site are such that any adverse effects on the safe and efficient operation of the motorway interchange are avoided, remedied or mitigated; or</i></p> <p>(ii) <i>the extent to which, when considered against other access opportunities for the site, comparable or better outcomes are achieved in terms of effects on the safe and efficient operation of the interchange</i></p>	<p>Applicable Infringement</p> <p>Vehicle access onto Customs Street West which is an arterial road</p> <p>Refer to Section 7.2.1 for assessment of the service lane vehicle crossing</p> <p>(A)</p> <p>(i)</p> <ul style="list-style-type: none"> The service lane vehicle access is in almost the same location as existing. There will be minimal changes to existing visibility, for an existing vehicle looking west along Customs Street West. Visibility may be improved with the removal of the Downtown Carpark ramp onto Fanshawe Street Customs Street West has a speed limit of 30 km/h. The only minor injury crashes reported on Customs Street West were related to the Downtown Carpark access, which will be replaced with smaller crossings as part of the Development The access has at least 60 m of separation from Lower Albert Street. As Customs Street West operates in a one-way direction, there will likely be minimal impact on this intersection Pedestrian volumes are likely high in this area of the City Centre. The Development will provide new north-south and east-west connectivity for pedestrians to potentially encourage pedestrians to travel away from the access There is existing bus parking on Customs Street West. The access will not impact on this parking. <p>(ii) While there will be an increase in vehicle volumes using the access, pedestrians will still be able to safely walk through the Customs Street West access. We note pedestrian movement will be improved on Customs Street West with the removal of the existing Downtown Carpark vehicle accesses</p>

(C) for any proposed access within a Vehicle Access Restriction Level Crossing Control:

- (i) *effects on the safe and efficient operation of the level crossing; or*
- (ii) *the practicability and adequacy of the access arrangements having regard to site limitations, arrangement of buildings and activities, user requirements and operational requirements.*

(iii) As the Site is surrounded by roads which are classified as arterial roads, it is not possible to avoid having access onto an arterial road. The service lane access onto Customs Street West is already a form of a shared access arrangement with the AON and HSBC parking areas

(B) Not applicable

(C) Not applicable

Applicable Infringements

The two vehicle crossings for the Hotel Drop-off provide access onto Customs Street West which is an arterial road.

The Hotel Drop-off western vehicle crossing on Customs Street West is within 10 m of an intersection.

Refer to Section 7.2.3

(A)

(i)

- The Hotel Drop-off vehicle crossings are designed to operate as a one-way left-in/left-out arrangement due to the functional requirements of a drop-off area and site constraints
- The western vehicle crossing, which infringes the 10 m separation requirement from the Customs Street West slip lane / Sturdee Street priority intersection, will operate as entry-only. As no vehicles will exit from this crossing, no operational or safety issues are anticipated. Vehicles entering the hotel drop-off via Sturdee Street will be given priority at the Customs Street West intersection, as this operates under priority control
- The Hotel Drop-off layout will operate similarly to the existing Downtown Carpark entrance and exit but with significantly lower traffic volumes and fewer lanes to turn across, thereby reducing the likelihood of vehicle conflicts
- The two vehicle crossings are separated by approximately 12.3 m and are divided by a physical island, which also separates the drop-off area from the footpath. This complies with the Unitary Plan requirement that vehicle crossings must be at least 6 m apart
- The confined layout of the drop-off area ensures low vehicle speeds when entering and exiting the site
- The operations of the Hotel Drop-off will be managed by hotel staff to ensure safe and efficient use
- There is sufficient intervisibility between pedestrians and vehicles, with clear visibility in both directions along the Customs Street West footpath, as no vertical obstructions are proposed
- Drivers exiting via the eastern vehicle crossing will have good visibility towards vehicles looking west along Customs Street West.

(ii) Pedestrian connectivity and movements will be retained, and no adverse impacts are anticipated. There will be a significant decrease in vehicle volumes using the Hotel Drop-off in comparison with the existing Downtown Carpark. This results in a net decrease of

	<p>potential vehicle – pedestrian conflict with the removal of the existing Downtown Carpark vehicle accesses.</p> <p>(iii) As the Site is surrounded by roads which are classified as arterial roads, it is not possible to avoid having access onto an arterial road.</p> <p>(B) Not applicable</p> <p>(C) Not applicable</p>
<p>PC79 – E27.8.2.(4A) – any activity or development that provides less than the required number of accessible parking spaces under Standard E27.6.3.2.(A): Infringement: 21 accessible parking spaces are provided, whereas not less than 55 spaces are required</p>	
<p>(A) the trip characteristics of the proposed activities on the site requiring accessible parking spaces;</p> <p>(B) the extent to which it is physically practicable to provide the required accessible parking spaces on the site including in terms of the existing location of buildings, the type of the existing building(s) site dimensions, topography and the availability of access to the road;</p> <p>(C) the availability and capacity of alternative accessible parking in the immediate vicinity, including on street and other public accessible car parking, with an accessible route to and from the building designed in accordance with New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121-2001), to provide the additional parking sought for the proposal;</p> <p>(D) mitigation measures to provide accessible parking which may include measures such as by entering into a shared accessible parking arrangement with another site or sites in the immediate vicinity</p> <p>(E) the availability of alternatives to private vehicle trips in the immediate vicinity with access to public transport by an accessible route designed in accordance with New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121-2001) and a maximum distance of 200m.</p>	<p>Refer to Section 8.1.3</p> <p>(A) Residential: Sufficient accessible parking will be provided to satisfy the requirement for the residential activity Office: The office activity will be served by up to 170 parking spaces, which is much lower than the theoretical demand of 1,933 spaces. The assumed accessible provision of 13 spaces is considered sufficient for the office activity, noting that up to a total of 170 spaces are proposed (8.7% of the theoretical demand). This is sufficient under the “New Zealand Building Code D1/AS1 New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities (NZS: 4121-2001)” standard. Office users will be able to utilise the excellent public transport in the area, which are suitable for people with accessibility needs Retail: No car parking is provided for retail at all, so it is not considered necessary to provide any accessible parking for retail. The retail activity will be food and beverage, and is not intended to serve people who will drive directly into the City Centre Hotel: No accessible spaces are proposed for the hotel activity. While not technically marked as accessible spaces, the hotel drop-off can function as an accessible facility. If hotel valet parking is provided, then accessible parking will not be required as these will be used by staff members transporting vehicles to and from the hotel drop-off area.</p> <p>(B) Compared to the lodged version, 10 additional accessible parking spaces have been provided to account for the PC79 standards The basement parking areas are constrained for space. Additional parking levels to accommodate additional accessible spaces would require further excavation. Based on our assessment, we do not consider it is necessary to convert more regular parking spaces to accessible spaces.</p> <p>(C) On-street accessible parking spaces are provided on Customs Street West (west of Lower Hobson Street) which are accessible to the Site</p> <p>(D) It is not practical or considered necessary to enter into a shared arrangement for this development</p> <p>(E) The site has excellent public transport accessibility, being located close to frequent bus routes on Quay Street and Lower Albert Street. This will provide excellent public</p>

	transport accessibility for the site to reduce reliance on private vehicle trips. The bus stops are easily accessible from the site.
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Chapter H8 Business City Centre Zone Restricted Discretionary Assessment Criteria

Assessment Criteria	Comment
H8.8.2(1) new buildings and external alterations and additions to buildings not otherwise provided for	
Assessment Criteria	Comment
<p>(C) Design of parking, servicing and access:</p> <p>(i) whether parking is located, in order of preference, underground, to the rear of building or separated from the street frontage by uses that activate the street;</p> <p>(ii) where parking is provided at lower building levels, the extent to which it is fully sleeved with active uses or activities that provide passive surveillance of the street and contribute to pedestrian interest and vitality. Above this, the extent to which car parking is fully screened on all sides of the building using design methods that present facades that are visually attractive and avoid night time light spill, noise and air quality effects on nearby sites and streets and public open spaces;</p> <p>(iii) whether vehicle crossings and accessways are designed to reduce vehicle speed, be visually attractive and clearly signal to pedestrians the presence of a vehicle crossing or accessway;</p> <p>(iv) whether pedestrian access between parking areas, building entrances/lobbies and the street provide equal access for people of all ages and physical abilities, a high level of pedestrian safety and be visually attractive;</p> <p>(v) whether separate vehicle and pedestrian access are provided within parking areas. Shared pedestrian and vehicle access may be appropriate where a lane or street is proposed within a development site. The shared space should prioritise pedestrian movement</p> <p>(vi) whether ramps visible from the street are avoided, however, where necessary, whether they are minimal in length and integrated into the design of the building;</p> <p>(vii) for commercial activities, whether suitable provision is made for onsite rubbish storage and sorting of recyclable materials that:</p> <ul style="list-style-type: none"> • is a sufficient size to accommodate the rubbish generated by the proposed activity; • is accessible for rubbish collection; and • for new buildings, is located within the building <p>(viii) where appropriate, whether a waste management plan is provided and:</p> <ul style="list-style-type: none"> • includes details of the vehicles to be used for rubbish collection to ensure any rubbish truck can satisfactorily enter and exit the site; and • provides clear management policies to cater for different waste management requirements of the commercial tenancy and residential activities <p>(ix) for alterations or additions to existing buildings where it is not possible to locate the storage area within the building, whether they are located in an area not visible from the street or public open spaces;</p> <p>(x) whether the development is able to be adequately served by wastewater and transport infrastructure; and</p> <p>(xi) whether servicing elements (including venting and air-conditioning units) are located on the roof of the building or internal to the site and not on street-facing facades. Where this is not possible (e.g. alterations to a shop front), the extent to which servicing:</p> <ul style="list-style-type: none"> • forms an integrated element of the building façade; and • is located so that it minimises adverse effects such as noise/odour on neighbouring sites and the public realm; 	<p>Applicable to transport: (iii), (v), (viii), (x)</p> <p>(iii) Vehicle crossings and accessways are designed to have low vehicle speeds, noting the high volume pedestrian environment in the City Centre. The crossings are designed to suit the maximum vehicle size, and are not oversized to encourage higher vehicle speeds. The access will be designed with different surface treatments and materials to signal to pedestrians the presence of a vehicle crossing</p> <p>(v) Pedestrian and vehicle movements are designed to be fully separated. While the service lane has a pedestrian path, the primary route into the basement parking areas will be through lifts inside the buildings</p> <p>(viii) While a Waste Management Plan is not included, we understand that a draft has been prepared and will accompany the substantive application. The loading area contains 5 loading spaces and can accommodate 8.3 m trucks, which will be sufficient for rubbish trucks to enter and exit the site</p> <p>(x) the development is adequately served by transport infrastructure</p>

Downtown West Precinct Restricted Discretionary Assessment Criteria

Assessment Criteria	Comment
I205.8.2 Downtown Precinct	
Assessment Criteria	Comment
<p>(1) new buildings, and alterations and additions to buildings:</p> <p>(a) -</p> <p>(b) the assessment criteria in H8.8.2(1) of the Business - City Centre zone rules for new buildings and/or alterations and additions to buildings apply</p> <p>(c) the proposed building, alteration or addition relative to the location of infrastructure servicing the area and open space should result in an integrated network that is adequate to meet the needs of the overall development area;</p> <p>(2) open spaces or through-site links:</p> <p>(a) the transport network (roads, public transport connections, pedestrian connections and cycle connections) is generally provided in the location identified in the precinct plan to achieve a legible street network. Where no location is identified, an integrated and efficient street and pedestrian network should be provided, including connections to existing and future streets and networks;</p> <p>(b) public open spaces are generally provided in the location(s) identified in the precinct plan to meet the needs of the local community. Where no location is identified, open space should be provided to and located to serve the future needs of the local community; and</p> <p>(c) layout and design of public open space should meet the demand of future occupants of the site and be of a high quality, providing for public use and accessibility, views, sunlight access and wind protection within the application area.</p> <p>(3) vehicle, cycle and pedestrian access and circulation:</p> <p>(a) the transport network (roads, public transport connections, pedestrian connections and cycle connections) is generally provided in the location identified in the precinct plan to achieve a legible street network. Where no location is identified, an integrated and efficient street and pedestrian network should be provided, including connections to existing and future streets and networks;</p>	<p>(1)</p> <p>(a) n/a</p> <p>(b) Refer to the table above for our assessment against the applicable transport criteria</p> <p>(c) Not applicable to transport</p> <p>2</p> <p>(a) As outlined in Section 7.3, the Development has good east-west and north-south pedestrian connectivity. A legible street network is provided as the service lane provides vehicle connectivity to Customs Street West and Quay Street. Public transport connections are available through the pedestrian connectivity towards Quay Street and Lower Albert Street.</p> <p>(b) Not applicable to transport</p> <p>(c) Not applicable to transport</p> <p>3</p> <p>(a) See 2(a) above</p>

APPENDIX B Relevant central and local policy guidance

Relevant central and local policy and guidance

Government Policy Statement on Land Transport 2024

The Government Policy Statement on Land Transport (GPS 2024) sets out the government's priorities for expenditure from the National Land Transport Fund over the next 10 years. The GPS 2024 is the government's main statutory lever to ensure investment in land transport by the New Zealand Transport Agency (the Transport Agency) and local government reflects government priorities over 10 years.

The current GPS came into effect on 1 July 2024.

GPS 2024 is built around four strategic priorities

- ◆ Economic Growth and Productivity
- ◆ Increased Maintenance and Resilience
- ◆ Safety
- ◆ Value for Money.

<https://www.transport.govt.nz/area-of-interest/strategy-and-direction/government-policy-statement-on-land-transport-2024>

Auckland Plan 2050

The Auckland Plan 2050 (AP2050) is a long-term spatial plan for Auckland, developed by Auckland Council (AC) with, and on behalf of, all Aucklanders. AC consider that Auckland has a shared responsibility for implementing it. The AP2050 outlines the big issues facing Auckland and recommends the way in which Aucklanders and others involved in the future of Auckland can best respond to them. The Development Strategy and six Outcomes set Auckland's strategy to 2050. They consider how Auckland will address the key challenges of high population growth and environmental degradation, and how to ensure shared prosperity for all Aucklanders. The plan is intended to set high level direction for Auckland.

<https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/auckland-plan/Pages/default.aspx>

Auckland Unitary Plan

The Unitary Plan helps Auckland meet its economic and housing needs by determining:

- ◆ what can be built and where
- ◆ how to create a higher quality and more compact Auckland
- ◆ how to provide for rural activities
- ◆ how to maintain the marine environment.

Regional Policy Statements (RPS) are provided for Urban Growth and Form, and Infrastructure Transport and Energy. These RPS identify that growth should be provided in a way that integrates land use and transport planning, achieves a compact urban form, and facilitates transport choice.

Chapter E27 Transport provides objectives, policies and standards relating to transport. Of note Policy E27.3.(1)(b)(i) states that developments within Business – City Centre Zone do not need to manage adverse effects on and integrate with the transport network by measures such as travel planning, providing alternatives to private vehicle trips, staging development or undertaking improvements to the local transport network. But developments within this zone that are not to be classified as “Permitted” may have other requirements to assess their transport effects.

https://unitaryplan.aucklandcouncil.govt.nz/pages/plan/Book.aspx?exhibit=AucklandUnitaryPlan_Print

Auckland Council Long-term Plan 2024-2034 (LTP)

This LTP sets out how Auckland Council will work to improve the daily lives of Aucklanders and how Council will pay for these improvements over the next 10 years.

Transport investment will focus on maintaining and improving Auckland’s existing transport assets while supporting growth, safety, and carbon reduction. The Council aims to optimise current infrastructure, improve public transport performance, and ensure strong returns on limited financial resources.

Key Investment Focus

- ◆ Renewals and maintenance – \$5.5 billion for road renewals and \$125 million for unsealed road improvements.
- ◆ Rapid transit – Ongoing investment in the City Rail Link (CRL), Eastern Busway (Stage 3), and reallocation of Climate Action Transport Targeted Rate (CATTR) funding toward the Northwestern Busway.
- ◆ Public transport improvements – Faster, more reliable bus services; \$50 weekly fare cap; expanded payment options (Apple Pay, Google Pay, debit/credit cards) under the National Ticketing Solution.
- ◆ Safety and resilience – Installation of driver safety screens on 80% of buses; removal of level crossings at Takānini; strengthening resilience against extreme weather events.
- ◆ Congestion management – Optimised network operations and investigation of time-of-use charging to manage demand.

Financial Overview

- ◆ Capital spend: \$14.6 billion (includes \$592 million for CRL over three years)
- ◆ Operating spend: \$28.2 billion
- ◆ Rates value per \$100: \$34

Key Challenges

- ◆ Changing travel patterns – Need to provide better mode choice and support mode shift.
- ◆ Resilience – Improve robustness to climate impacts and major disruptions.
- ◆ Renewals backlog – Rising costs and deferred maintenance putting pressure on budgets.
- ◆ Supporting growth – Delivering infrastructure to enable both greenfield and urban intensification.

- ◆ Reducing harm – Improving safety and reducing pollution and emissions.

Three-Year Priorities

- ◆ Progress delivery of capital programmes.
- ◆ Prepare for the CRL opening.
- ◆ Implement new public transport fare options and expand network efficiency measures.

<https://new.aucklandcouncil.govt.nz/en/plans-policies-bylaws-reports-projects/our-plans-strategies/budget-plans/long-term-plan-2024-2034/long-term-plan-2024-2034-documents.html>

Auckland Regional Land Transport Plan 2024 – 2034

The Auckland Regional Land Transport Plan (RLTP) 2024–2034 outlines the region’s ten-year transport investment programme, jointly prepared by Auckland Transport, Waka Kotahi NZ Transport Agency, and KiwiRail. It aligns with the Government Policy Statement on Land Transport (GPS) and forms Auckland’s case for funding through the National Land Transport Fund.

The RLTP responds to key challenges including population growth, congestion, resilience and renewal needs, transport safety, and decarbonisation. It seeks to make better use of existing infrastructure while supporting Auckland’s transition to a safer, more efficient, and lower-emission transport system.

The plan provides for approximately \$63 billion in investment over ten years, covering maintenance, renewals, public transport operations, and new capital projects. Key allocations include

- ◆ Public transport (~\$28 billion) – expanding rapid transit, electrifying bus and ferry fleets, and improving service reliability and frequency.
- ◆ State highways (~\$17 billion) – including major connections such as Penlink, Mill Road, and the East-West Link.
- ◆ Maintenance and renewals (~\$13 billion) – addressing the asset backlog and improving network resilience.
- ◆ Local road and growth infrastructure (~\$3 billion).

For Auckland’s city centre, the RLTP signals a continued shift toward a public-transport-first approach and reallocation of street space to support walking, cycling, and efficient bus and freight movements. Major central-area projects include completion of the City Rail Link (CRL) and its network integration works, bus network optimisation, and ferry service upgrades, all of which will significantly enhance access to and through the city centre.

The CRL in particular will transform rail travel by doubling peak capacity and improving access from across the region. Complementary city-centre initiatives—such as bus priority upgrades, enhanced pedestrian environments, and improved freight and servicing routes—are intended to manage competing demands within constrained street corridors and to support ongoing urban regeneration.

The RLTP therefore underpins a mode shift away from private vehicles within the city centre, aiming to improve accessibility, safety, and amenity while maintaining essential freight and servicing functions.

Overall, the RLTP 2024–2034 focuses on optimising the existing network, investing in reliable, low-emission transport, and prioritising the city centre as the heart of Auckland’s public transport system.

<https://at.govt.nz/about-us/transport-plans-strategies/regional-land-transport-plan/#overview>

Auckland Regional Public Transport Plan 2023-2031

The Regional Public Transport Plan 2023-2031 (RPTP2023) for Auckland outlines Auckland Transport's strategy for improving and managing the city's public transport system over the next eight years. The key initiatives from the plan are summarised in Table B below.

Table Bb1: Key initiatives of the RPTP2023

Initiatives	Actions
Fixing Current Issues	<ul style="list-style-type: none"> ◆ Addressing bus driver shortages, which were resolved by mid-2023 ◆ Completing KiwiRail’s rail network rebuild by early 2026 to reduce service disruptions
Increasing Service Frequency	<ul style="list-style-type: none"> ◆ Implementing 10 new frequent bus routes by 2027, with an additional three routes by 2031 ◆ Improving train frequencies to every 7.5 minutes during peak times by 2026 ◆ Expanding ferry services on multiple routes by 2025
Speeding Up Travel Times	<ul style="list-style-type: none"> ◆ Completing the City Rail Link to double the number of people within 30 minutes of central Auckland. ◆ Adding more bus lanes and priority measures at intersections
Making Fares More Affordable	<ul style="list-style-type: none"> ◆ Introducing a weekly fare cap for unlimited travel at a fixed price. ◆ Continuing Government-funded half-price fares for under-25s and free fares for children under 13
Enhancing Accessibility	<ul style="list-style-type: none"> ◆ Implementing an Accessibility Action Plan and improving infrastructure for those with mobility needs. ◆ Expanding audio announcements on buses and making other accessibility upgrades
Reducing Carbon Emissions	<ul style="list-style-type: none"> ◆ Transitioning 75 % of the bus fleet to zero-emission vehicles by 2031. ◆ Introducing electric ferries by 2025 and electric trains to Pukekohe by 2026
Inter-Regional Services	<ul style="list-style-type: none"> ◆ Supporting improvements to inter-regional services like the Te Huia train between Auckland and Hamilton, provided they do not negatively impact local services

It guides the design and delivery of public transport services, information, and infrastructure in Auckland over the next eight years, split into short-, medium-, and long-term timeframes. The plan describes the public transport network that AT proposes for the region, identifies the services that are integral to the network, outlines the contractual units these services will sit in, and sets out the objectives and policies that apply to those services.

<https://at.govt.nz/about-us/transport-plans-strategies/regional-public-transport-plan-2023-2031-rptp>

National Policy Statement on Urban Development 2020

The National Policy Statement for Urban Development (NPS-UD) 2020 sets out the objectives and policies for planning for well-functioning urban environments under the Resource Management Act 1991. The NPS-UD 2020 comes into effect on 20 August 2020. It has 7 objectives which include supporting climate change initiatives, supporting local authority decision making on urban development, the principles of the Treaty of Waitangi, improving housing affordability, and enabling well-functioning urban environments.

<https://environment.govt.nz/publications/national-policy-statement-on-urban-development-2020-updated-may-2022/>

City Centre Masterplan 2020¹⁶

The CCMP is the key guiding document for the Auckland Council whānau, setting the strategic direction for the city centre over the next 20 years.

It applies the Auckland Plan to the city centre through ten outcomes, to be delivered through eight [transformational moves](#) and [Access for Everyone \(A4E\)](#).

The 10 outcomes present the overall strategic direction for the city centre and waterfront. They critically support the eight transformational moves and associated opportunities for future and current projects.

These outcomes are

- ◆ Outcome 1: Tāmaki Makaurau - Our place in the world
Tāmaki Makaurau / Auckland's city centre is a place where we actively recognise and celebrate our historic heritage as a driver of positive change and placemaking.
- ◆ Outcome 2: Connected city centre
The city centre in Tāmaki Makaurau / Auckland should have safe, healthy and sustainable travel options both inwards and outwards. This will improve people's access and choice of transport modes.
- ◆ Outcome 3: Accessible and inclusive city centre
This outcome focuses on an accessible and inclusive city centre. We want a city centre that is welcoming to all in Tāmaki Makaurau.
- ◆ Outcome 4: Green city centre
This outcome is about restoring our biodiversity and ecological systems (Mauri Tu). Doing this will deliver a healthy and happy city centre in Tāmaki Makaurau.
- ◆ Outcome 5: Public life

¹⁶ The CCMP is a non-statutory guiding document that sets the high-level vision and strategic direction for Auckland's city centre

Public space or realm is the glue that holds the city centre together, the canvas for public life. It needs to work well for everyone who spends time in Tāmaki Makaurau. This outcome aims to for everyone in the city centre to feel safe and comfortable, and experience enjoyment.

- ◆ Outcome 6: Residential city centre neighbourhoods

Auckland's city centre is an increasingly popular place to live. As the city centre population grows and matures, this outcome shapes the city centre's public realm, housing supply and social infrastructure to deliver a highly liveable city centre.

- ◆ Outcome 7: Quality built form

This outcome aims to deliver a well-designed and planned city centre. It links the City Centre Masterplan and Waterfront Plan to Auckland's statutory planning and design tools.

- ◆ Outcome 8: Heritage defined city centre

We want to increase understanding, protection and conservation of city centre heritage places, landscapes and stories. Our city centre should actively recognise and celebrate Auckland's historic heritage as a driver of positive change and placemaking.

- ◆ Outcome 9: Sustainable city centre

This outcome aims to shape our approach to transport, air quality, water quality and climate change in the city centre. It focuses on the Auckland Climate Action Framework and Outcome 5 of the Auckland Plan 2050.

- ◆ Outcome 10: Prosperous city centre

This outcome sets out practical ways to develop the city centre so it can continue to thrive as an economic centre and cater for the needs of our diverse population. The city centre will enable business and urban development, and deliver a globally-competitive quality of life within a flourishing economy.

<https://www.aucklandccmp.co.nz/>

Transport Emissions Reduction Pathway

In December 2020, the New Zealand government declared a climate emergency - and is on a pathway to net zero emissions by 2050. The Transport Emissions Reduction Pathway (TERP) was endorsed by Auckland Transport's board and adopted by Auckland Council in August 2022. Auckland's transport system accounts for just over 40 per cent of the city's total emissions. Aucklanders have one of the highest transport emissions per capita (person) in the world. To halve transport emissions in Auckland by 2030, it is crucial that we make significant changes to the way we travel.

The TERP sets out 11 areas for transforming Auckland's transport system and land use planning that align with the government's [Emissions Reduction Plan](#).

They are

- ◆ making walking and cycling safer, easier and more accessible
- ◆ using public transport much more
- ◆ prioritising and resourcing sustainable transport
- ◆ reducing travel where possible and appropriate
- ◆ making neighbourhoods safer with less traffic
- ◆ putting things closer to where people live
- ◆ using vehicles powered by electricity
- ◆ enabling new transport options
- ◆ using low emission buses, trains and ferries
- ◆ making freight and services cleaner and more efficient
- ◆ helping Aucklanders make sustainable transport choices.

While the targets set out in the government's Emissions Reduction Plan are at a national level and the numbers in the TERP are specific to Auckland, their focus and actions are well aligned.

<https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/Pages/transport-emissions-reduction-pathway.aspx>

APPENDIX C

Plans of parking levels

Figure C1: Level B04 layout

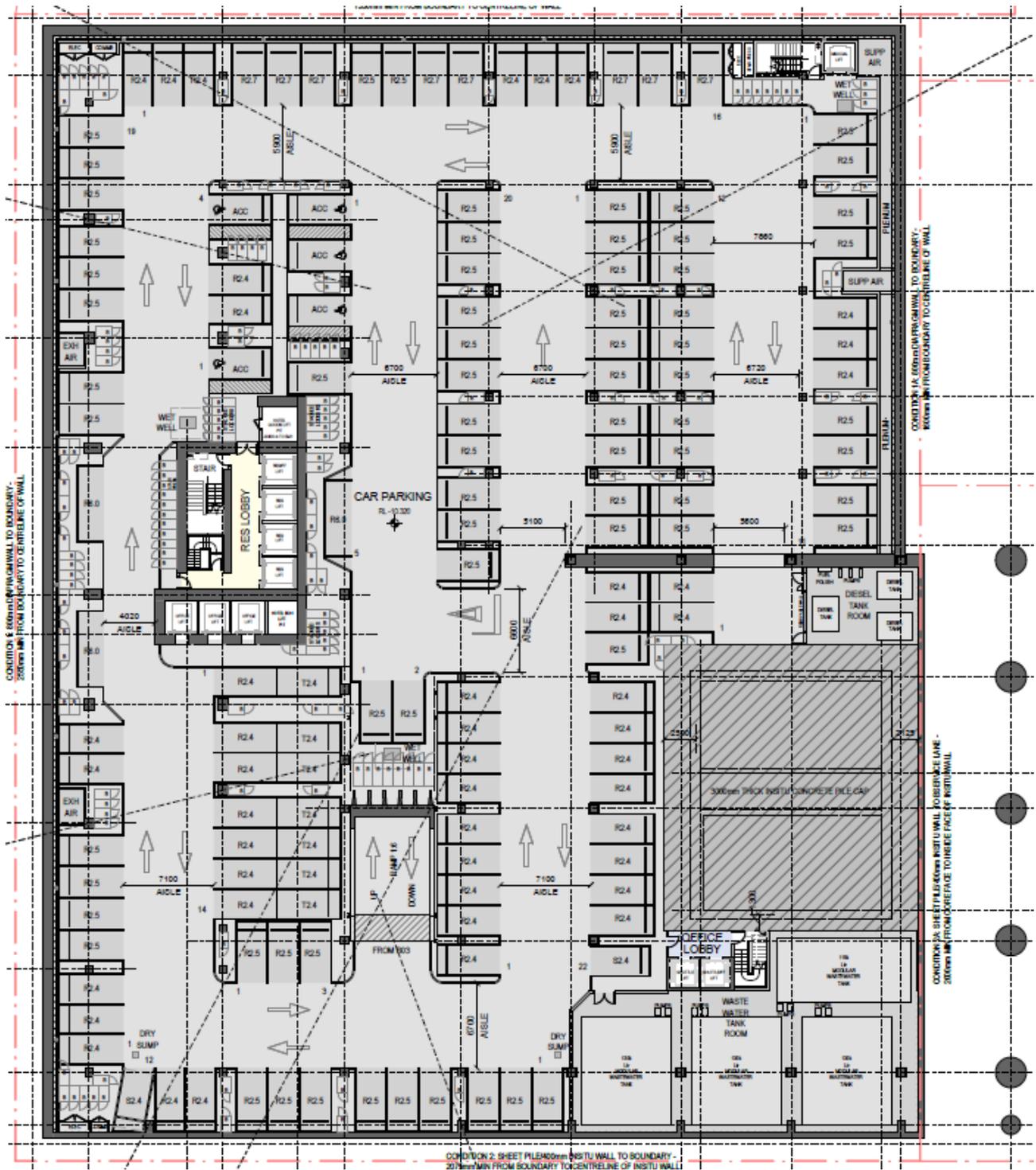


Figure C1: Level B04 layout – alternative layout with 9 parking spaces instead of water tanks (see Section 8.1.2)

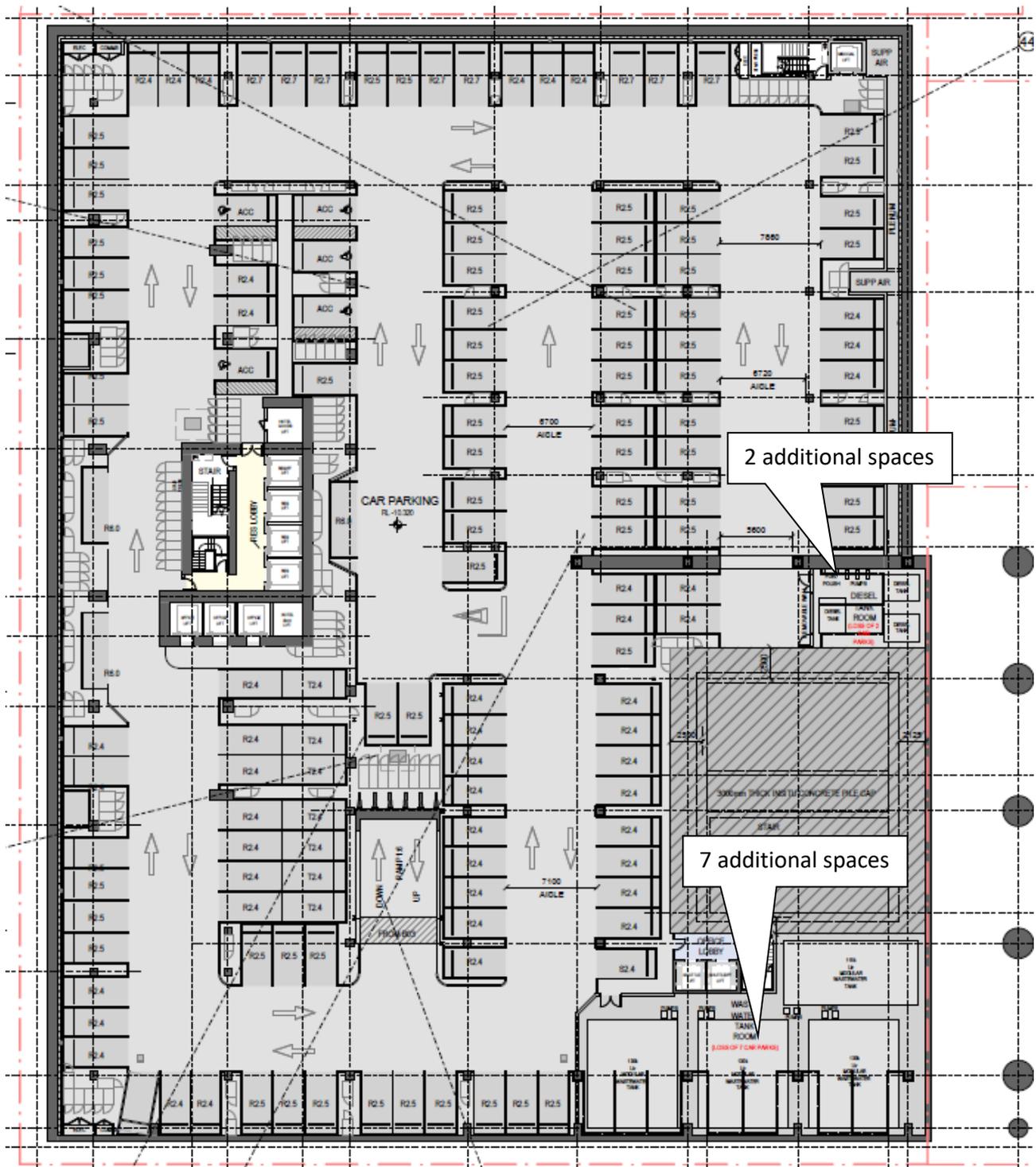


Figure C1: Level B03 layout

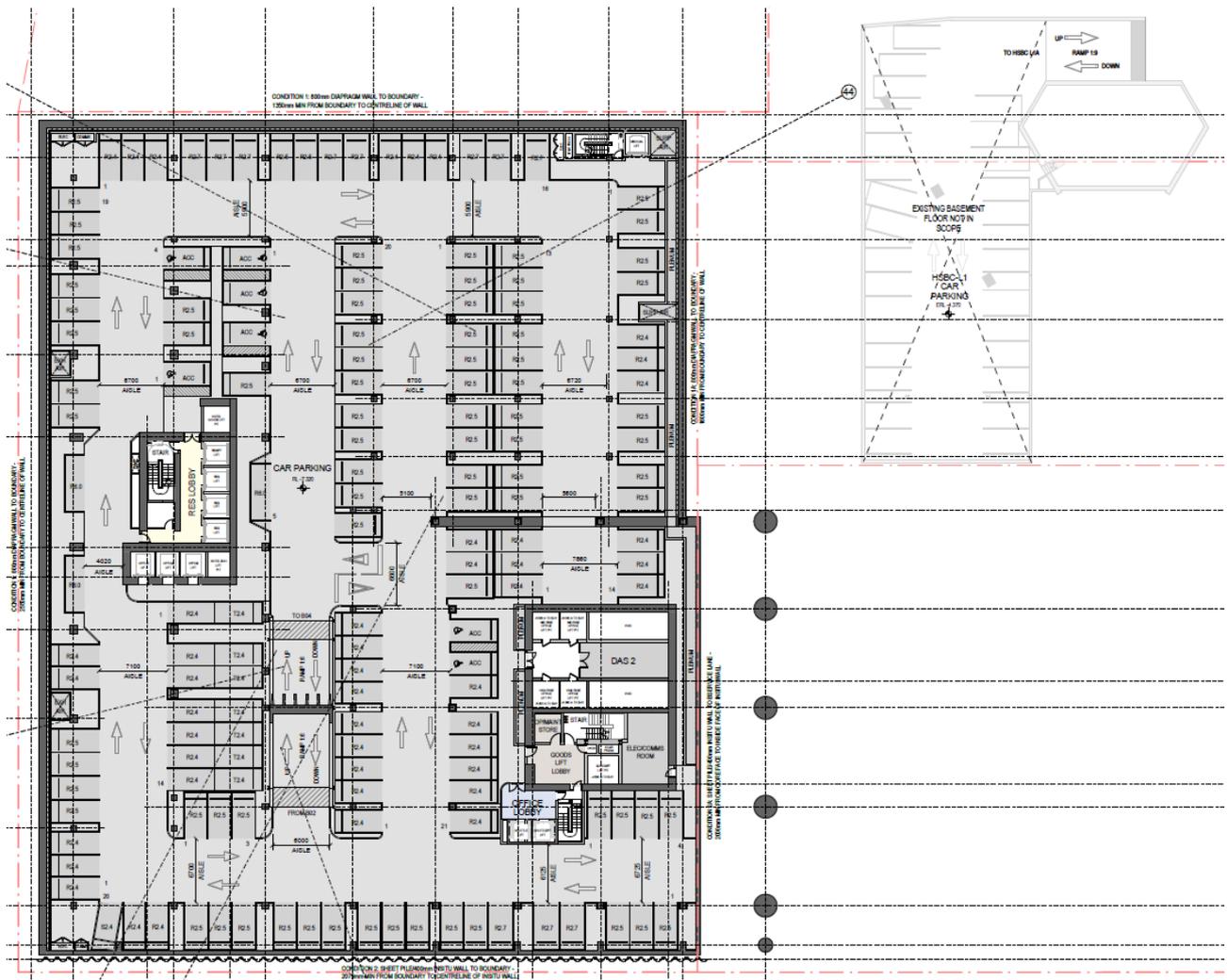
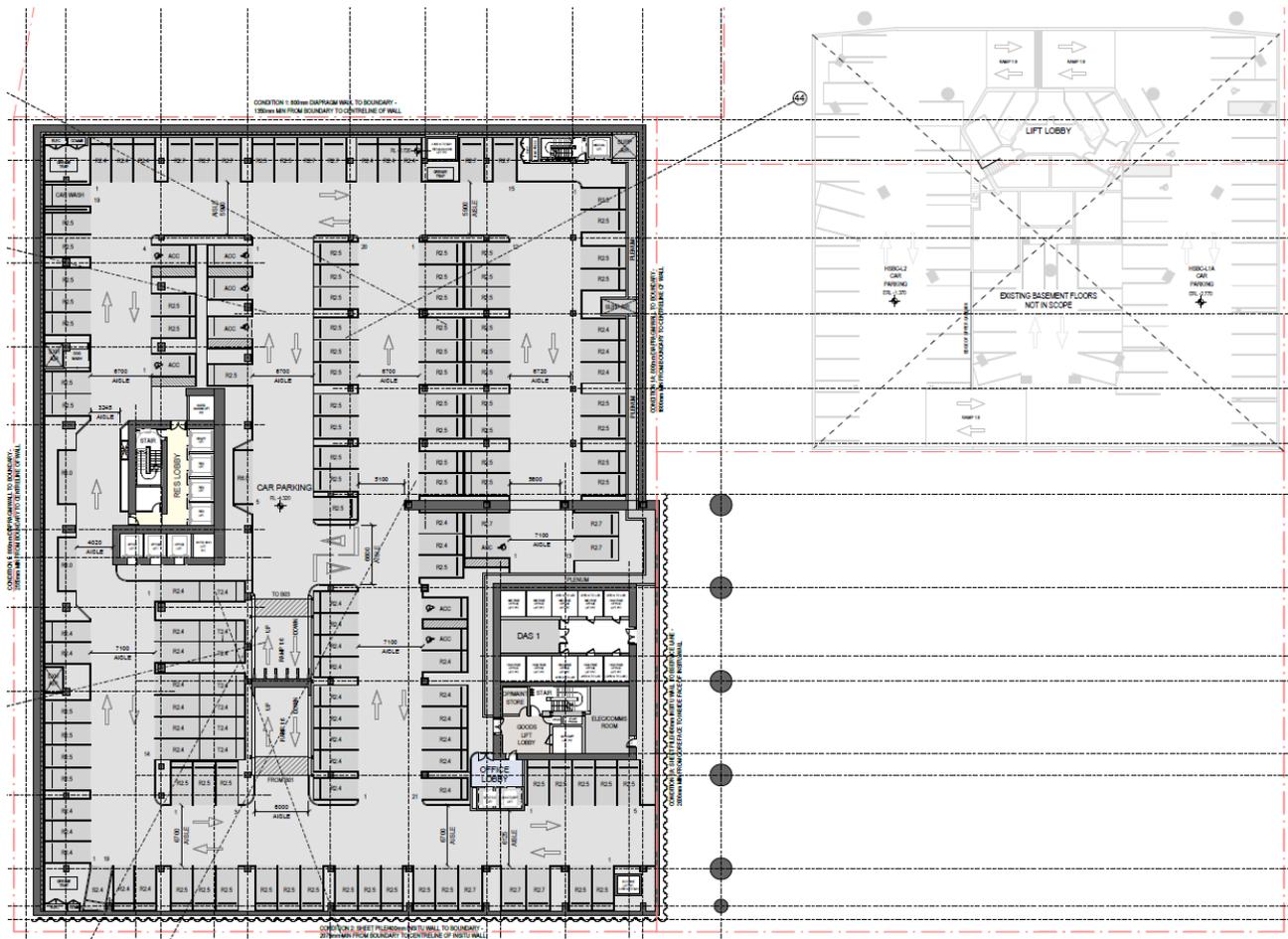


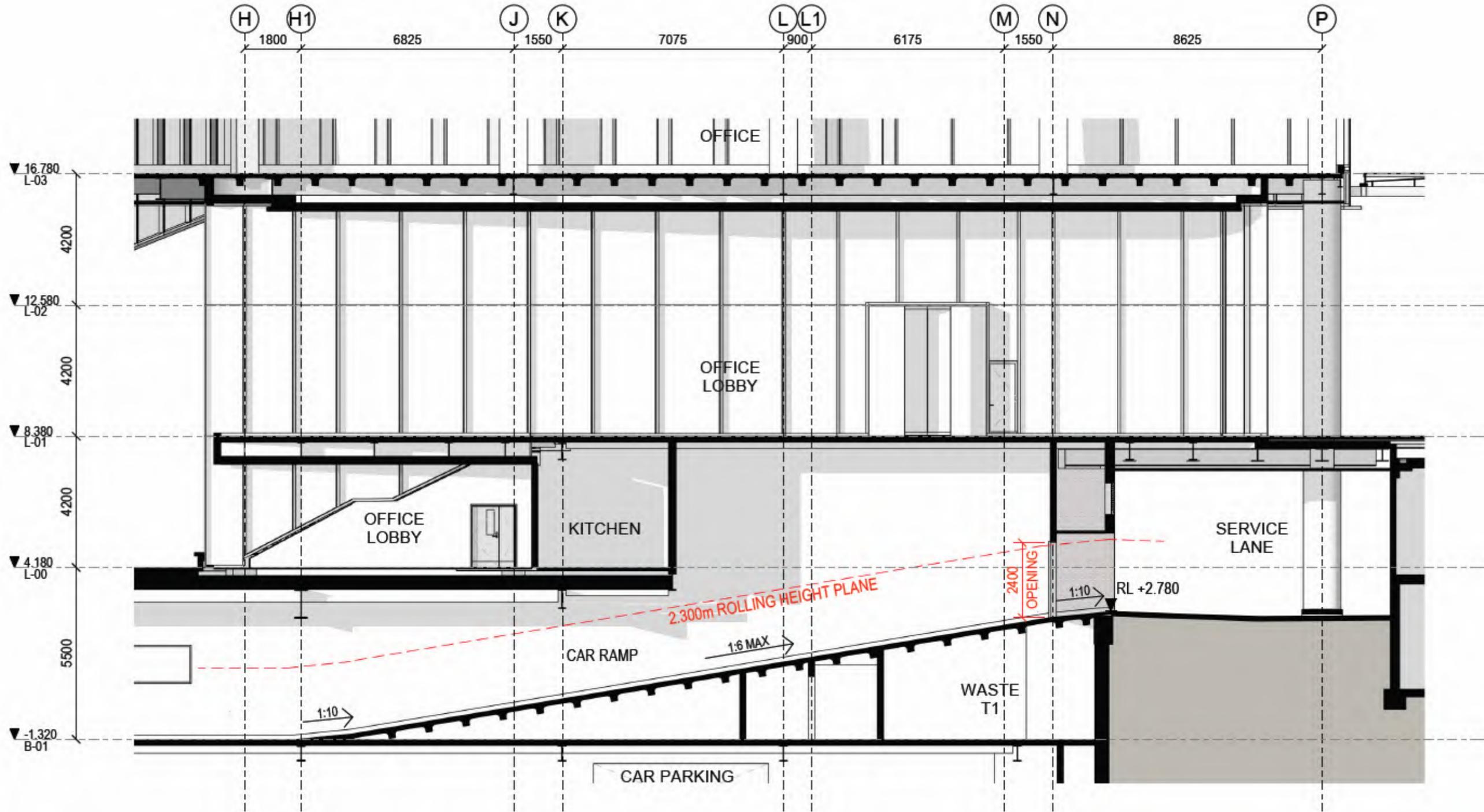
Figure C1: Level B02 layout



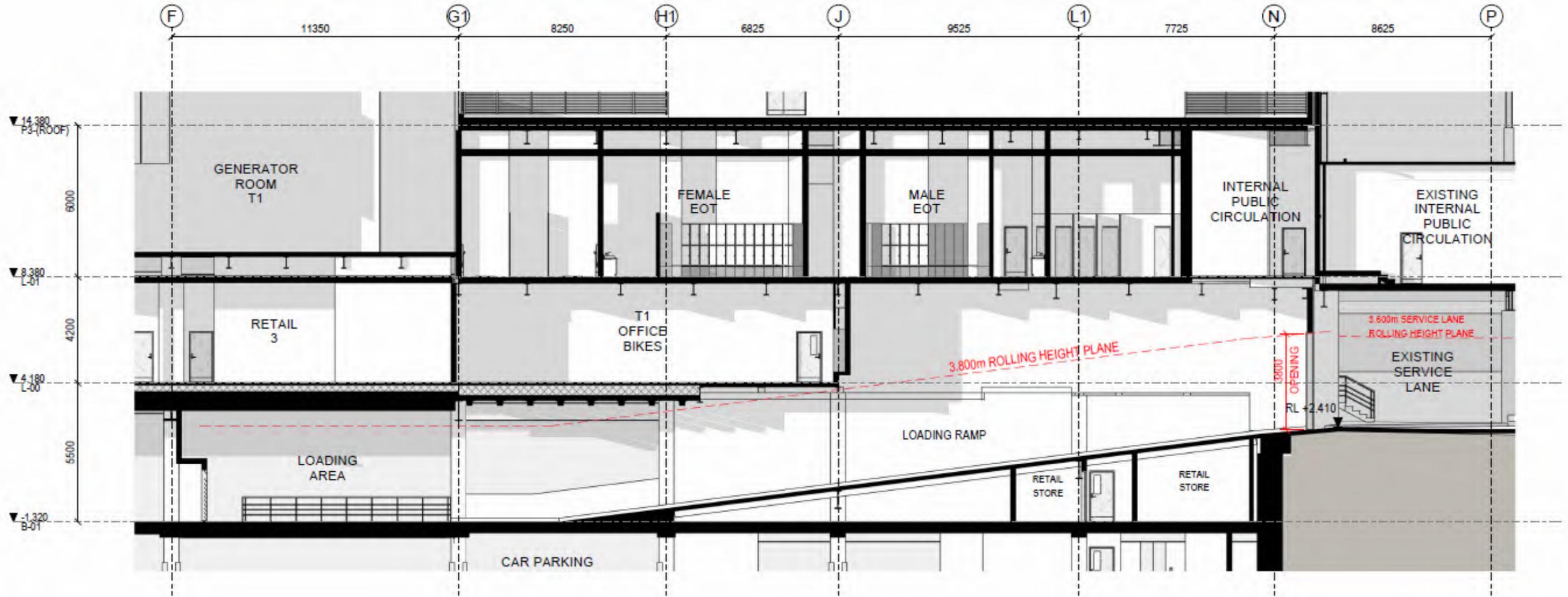
APPENDIX D

Vertical clearance profiles

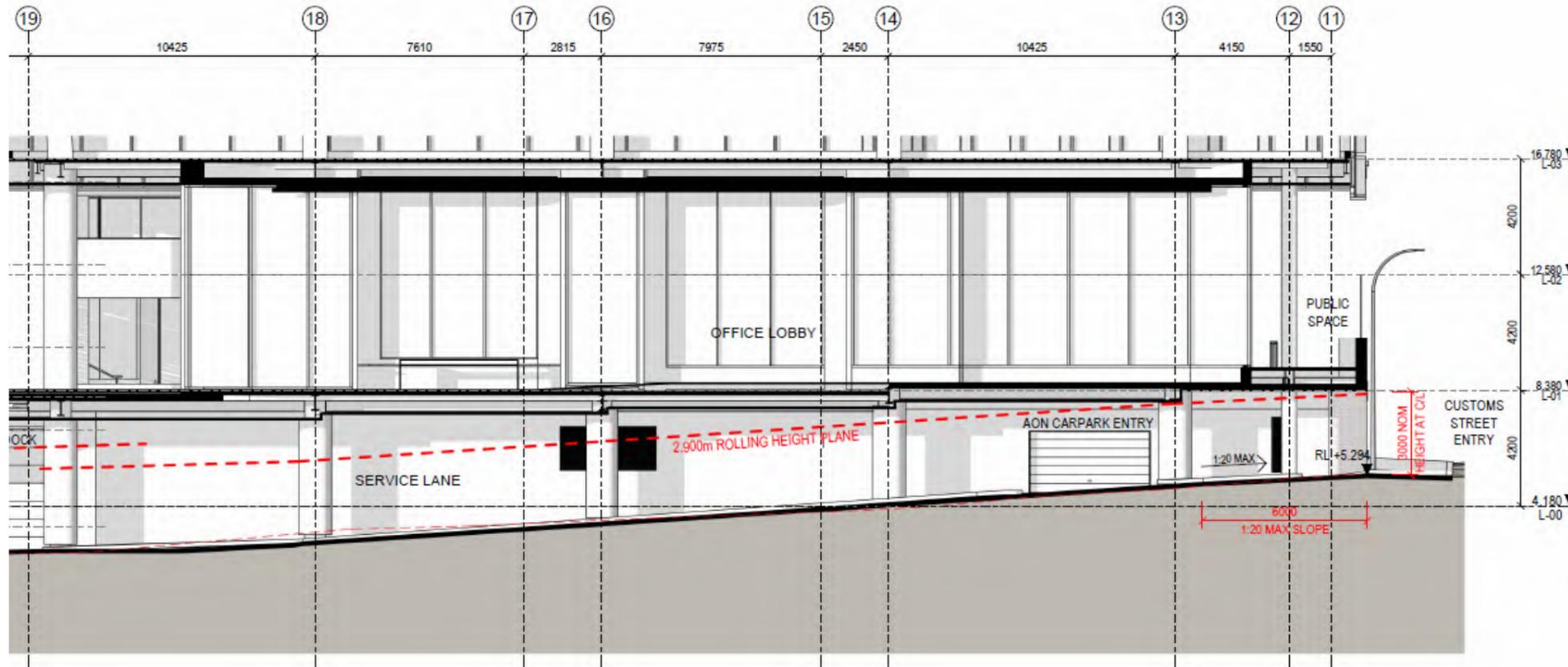
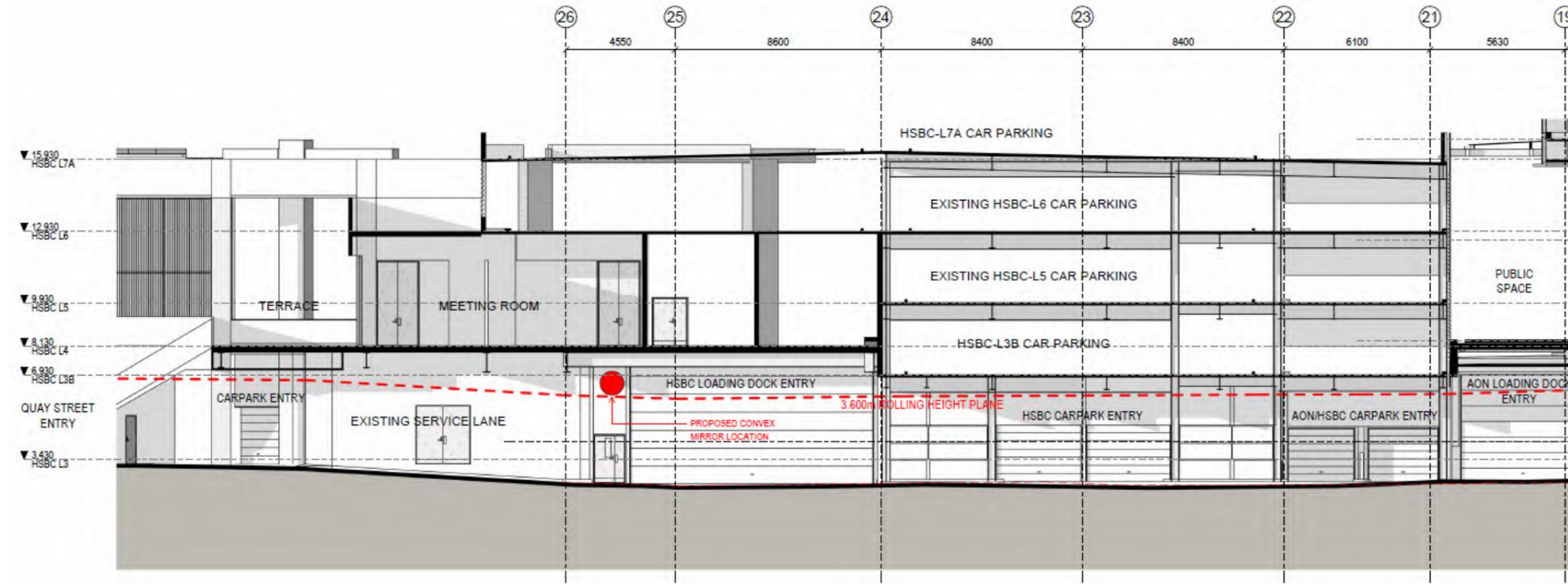
Vertical clearance of carpark ramp and access



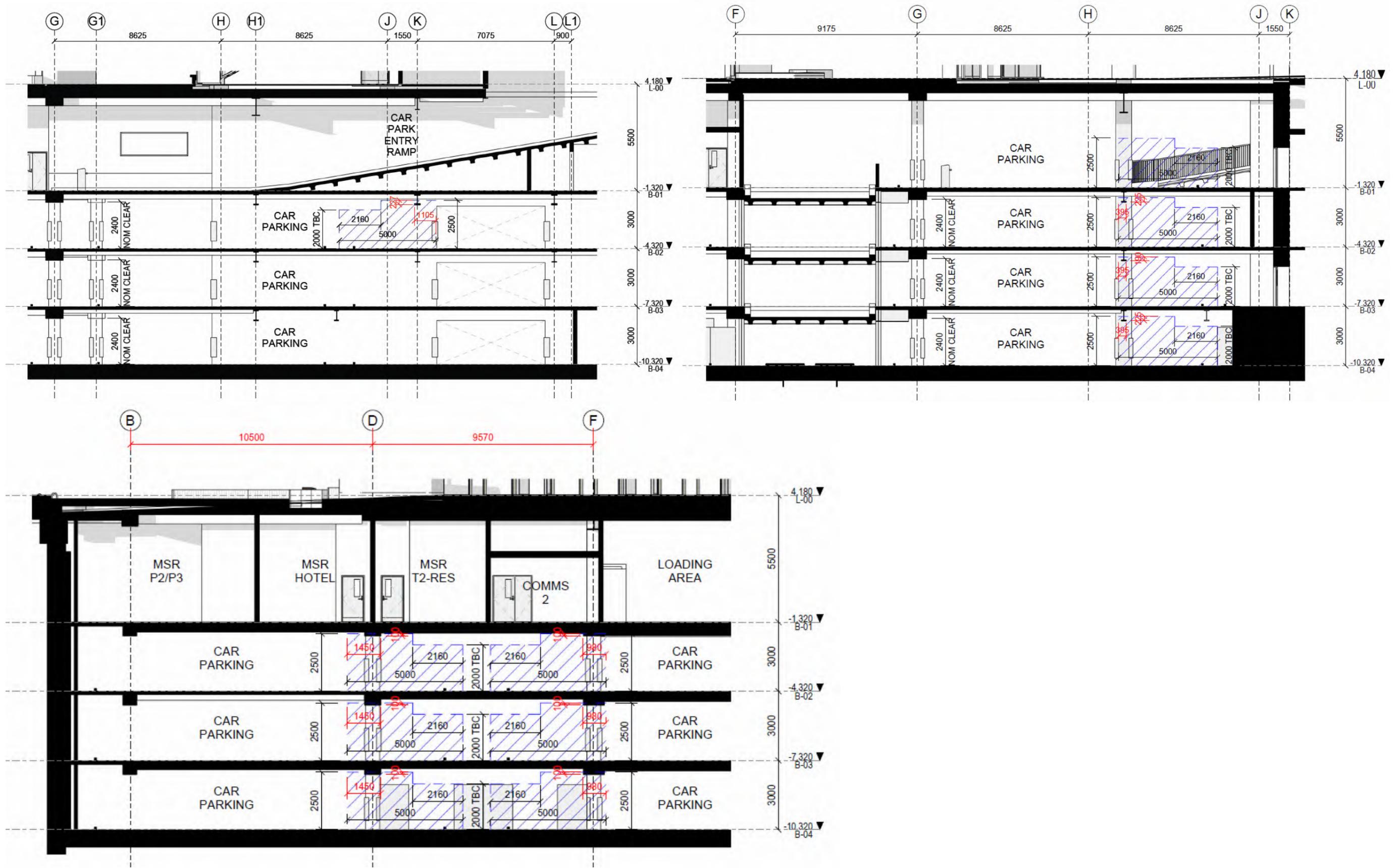
Vertical clearance of loading bay ramp and access



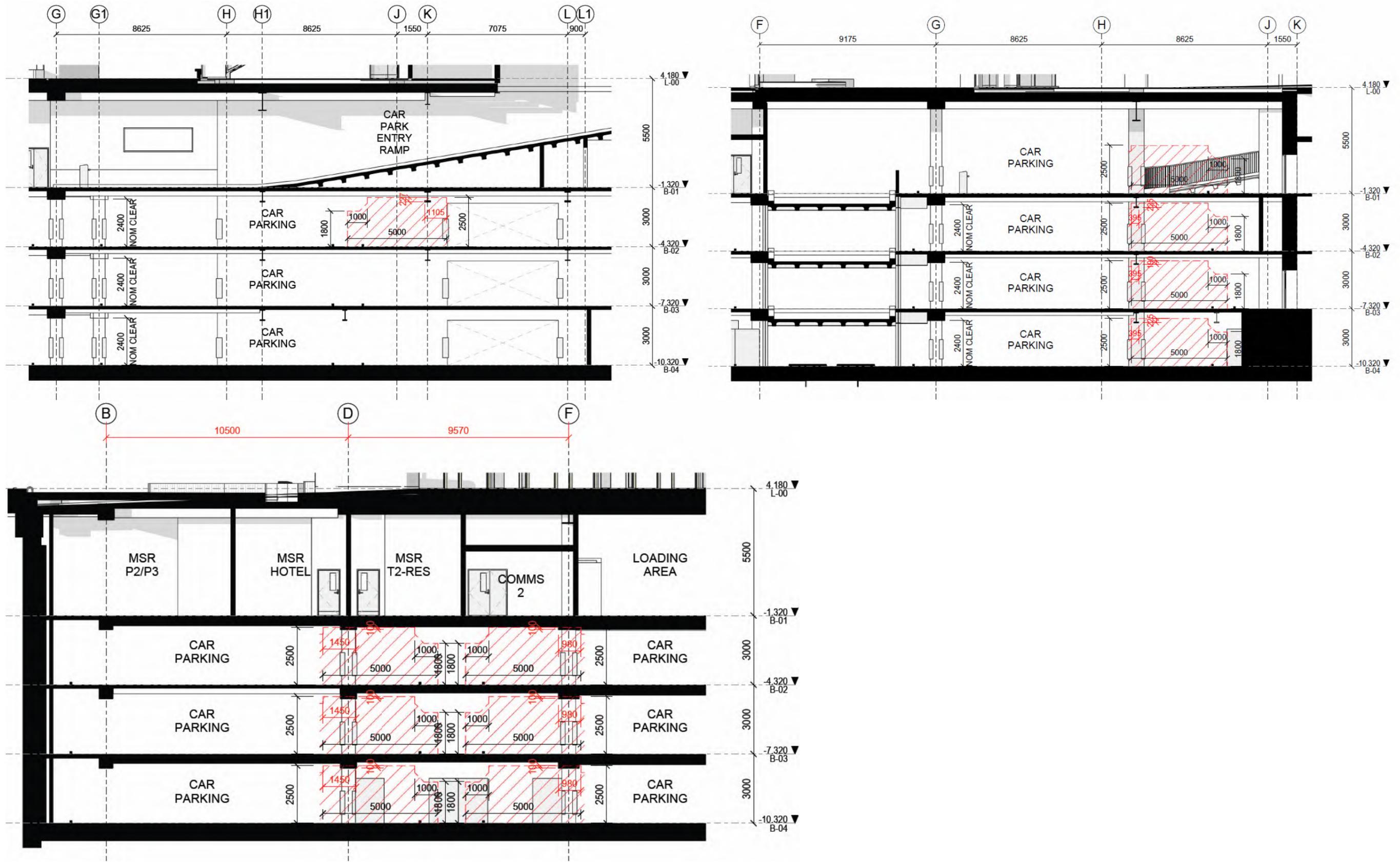
Vertical clearance of service lane



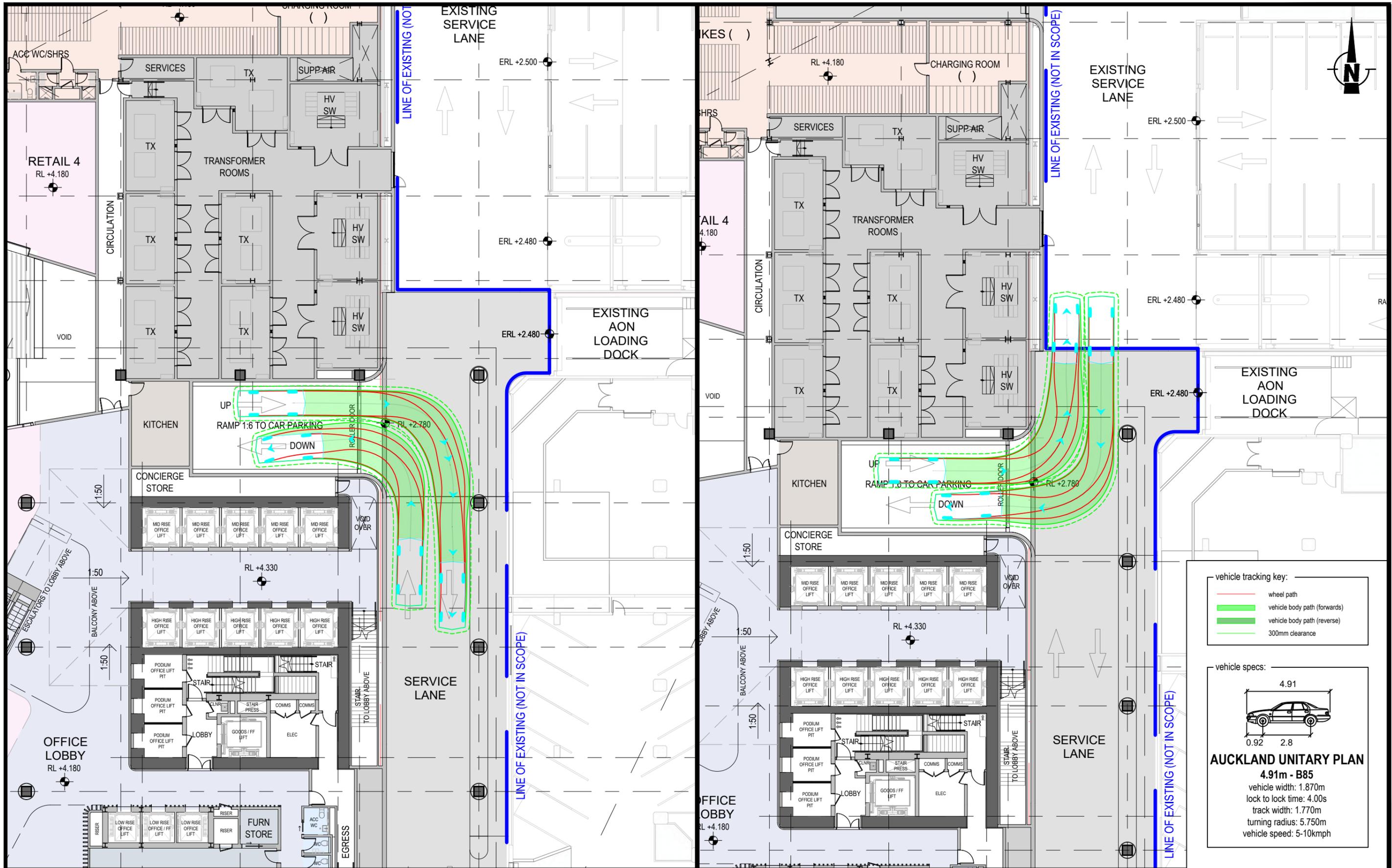
Vertical clearance envelopes of accessible parking spaces, based on NZS 4121:2001 (gridline J to K upper left, gridline H to J upper right, gridline D to F lower left)



Vertical clearance envelopes of accessible parking spaces, based on AS/NZS 2890.6 (gridline J to K upper left, gridline H to J upper right, gridline D to F lower left)



APPENDIX E Vehicle tracking assessments



vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

AUCKLAND UNITARY PLAN
4.91m - B85
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0 10m

1:250 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD

FOR DISCUSSION

SHEET TITLE: **GROUND FLOOR - VEHICLE TRACKING**
B85 DESIGN VEHICLE - SERVICE LANE

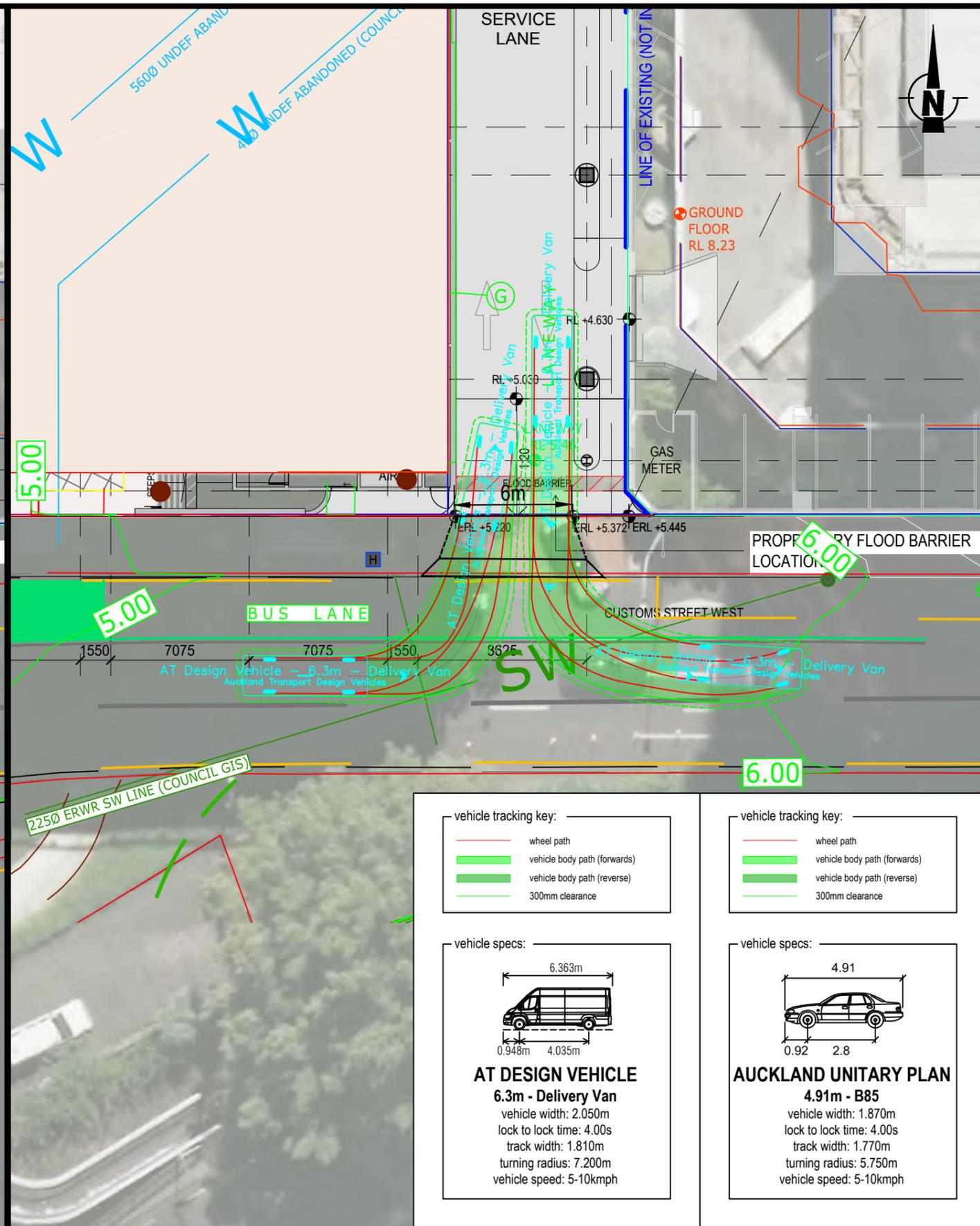
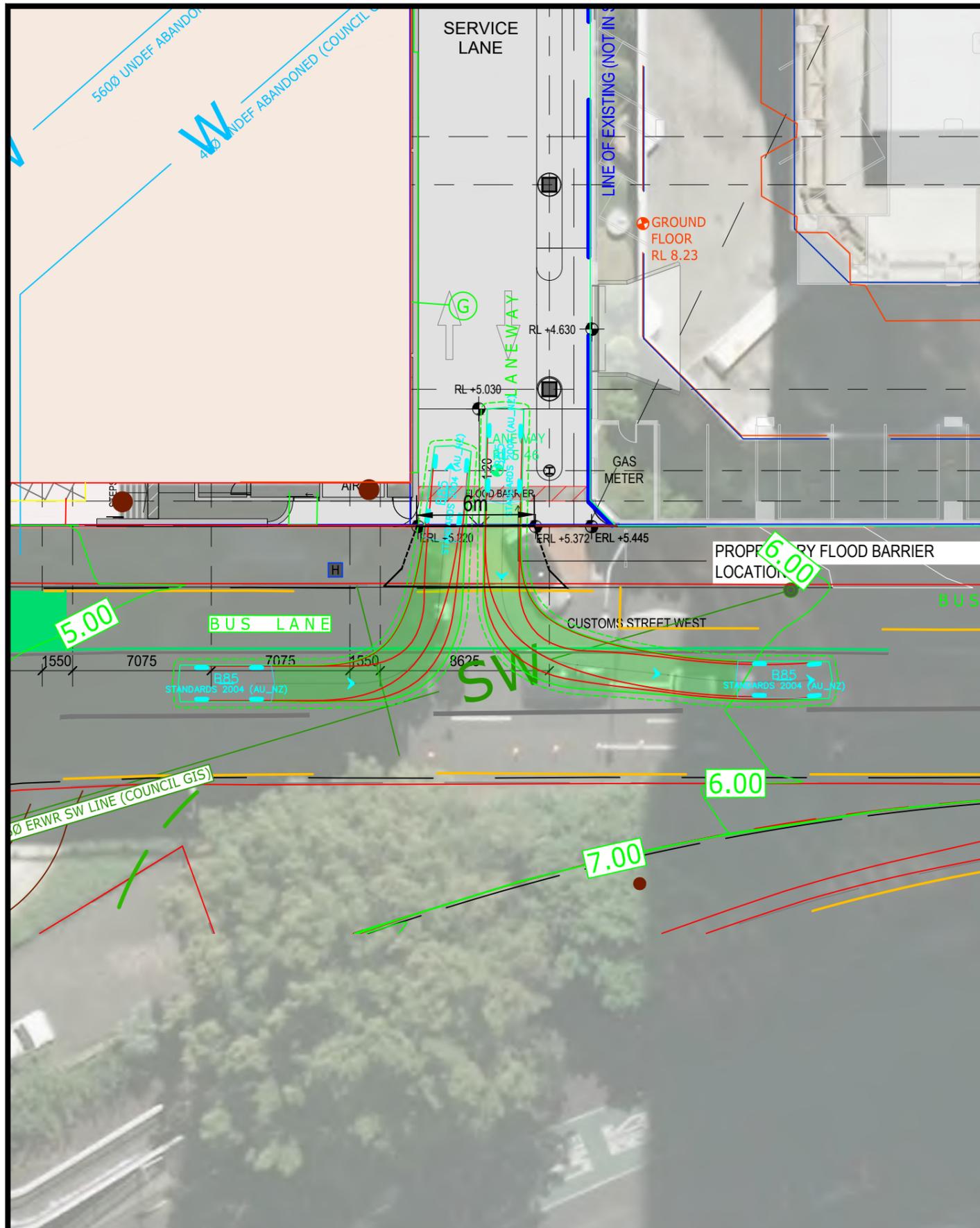
DRAWING NUMBER: PREP006-DC-DW01

SHEET: 01 of 16

REV: B

flow
 TRANSPORTATION SPECIALISTS

Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
 p 09 970 3820 | f 09 970 3890 | www.flownz.com



vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

AT DESIGN VEHICLE
6.3m - Delivery Van
 vehicle width: 2.050m
 lock to lock time: 4.00s
 track width: 1.810m
 turning radius: 7.200m
 vehicle speed: 5-10kmph

vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

AUCKLAND UNITARY PLAN
4.91m - B85
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

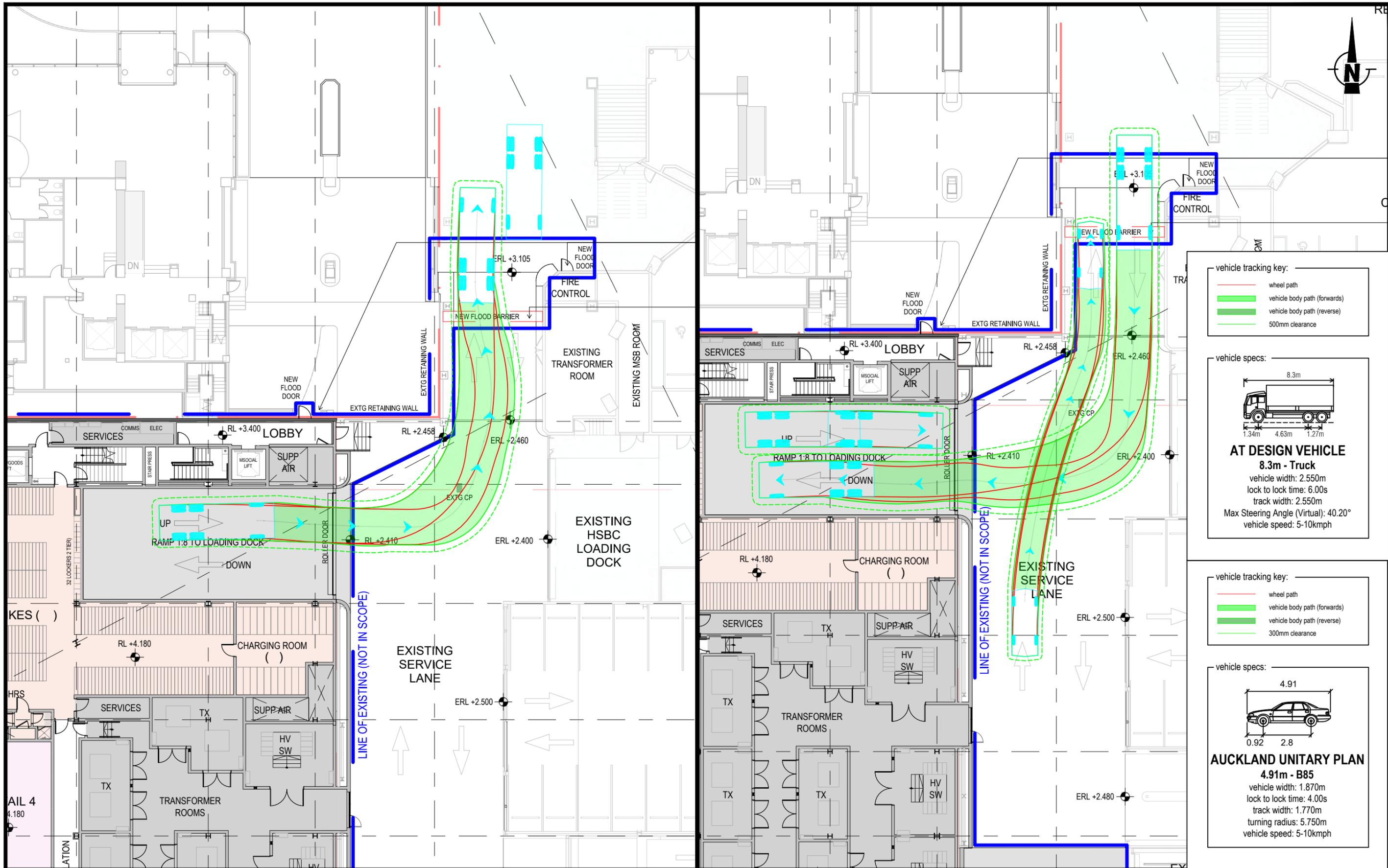
SCALE: 0 10m
1:250 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD
FOR DISCUSSION

SHEET TITLE: **GROUND FLOOR - VEHICLE TRACKING B85 DESIGN VEHICLE & DELIVERY VAN**
 DRAWING NUMBER: PREP006-DC-DW01

SHEET: **02 of 16**
 REV: **B**

flow
 TRANSPORTATION SPECIALISTS
 Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- - - 500mm clearance

vehicle specs:

AT DESIGN VEHICLE
8.3m - Truck
 vehicle width: 2.550m
 lock to lock time: 6.00s
 track width: 2.550m
 Max Steering Angle (Virtual): 40.20°
 vehicle speed: 5-10kmph

vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- - - 300mm clearance

vehicle specs:

AUCKLAND UNITARY PLAN
4.91m - B85
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0 10m
1:250 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD

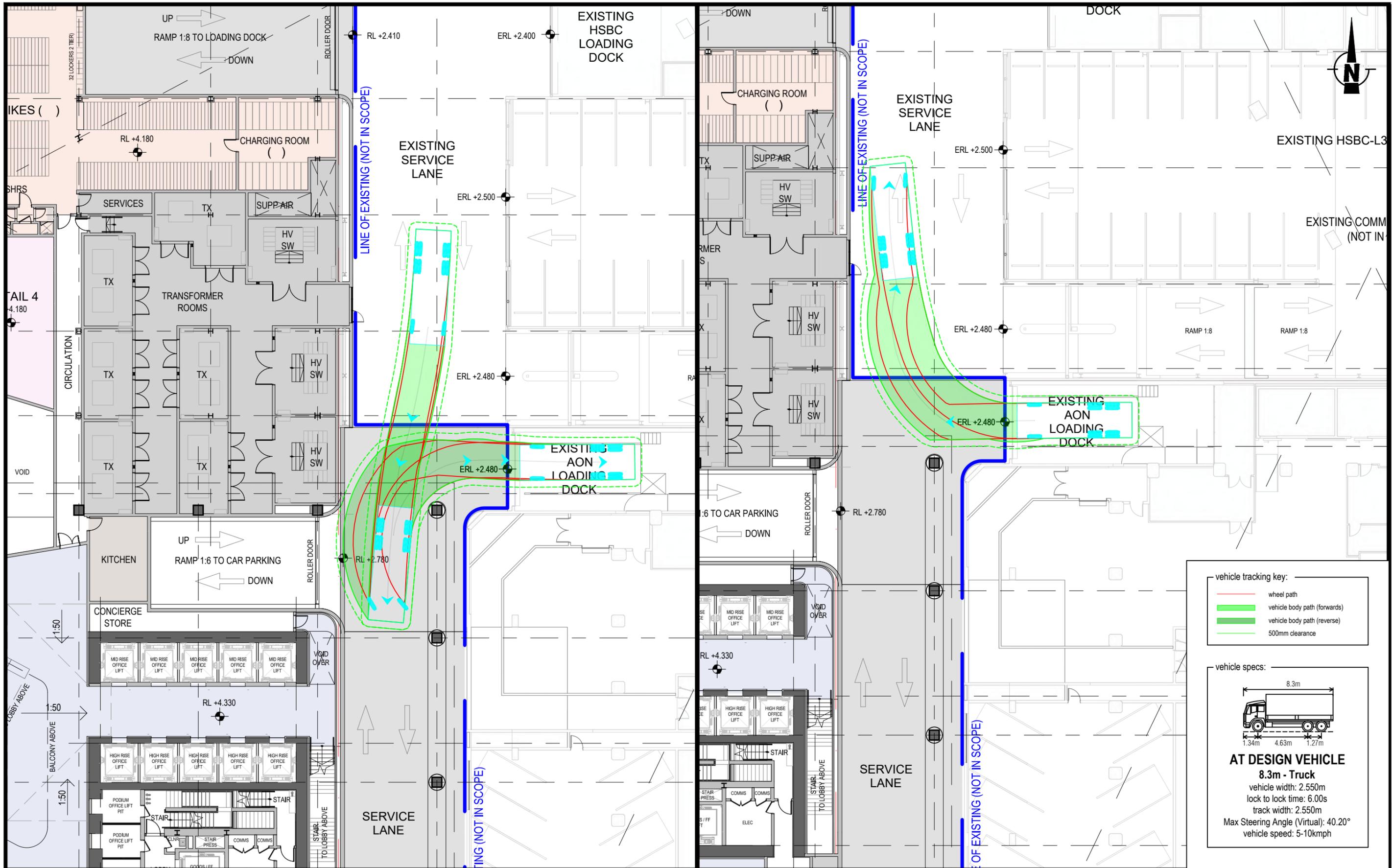
FOR DISCUSSION

SHEET TITLE: **GROUND FLOOR - VEHICLE TRACKING**
B85 DESIGN VEHICLE & 8.3m TRUCK

DRAWING NUMBER: PREP006-DC-DW01

SHEET: **03** of 16
 REV: **B**

flow
 TRANSPORTATION SPECIALISTS
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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 500mm clearance

vehicle specs:

AT DESIGN VEHICLE
8.3m - Truck
 vehicle width: 2.550m
 lock to lock time: 6.00s
 track width: 2.550m
 Max Steering Angle (Virtual): 40.20°
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0 10m
1:250 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD

FOR DISCUSSION

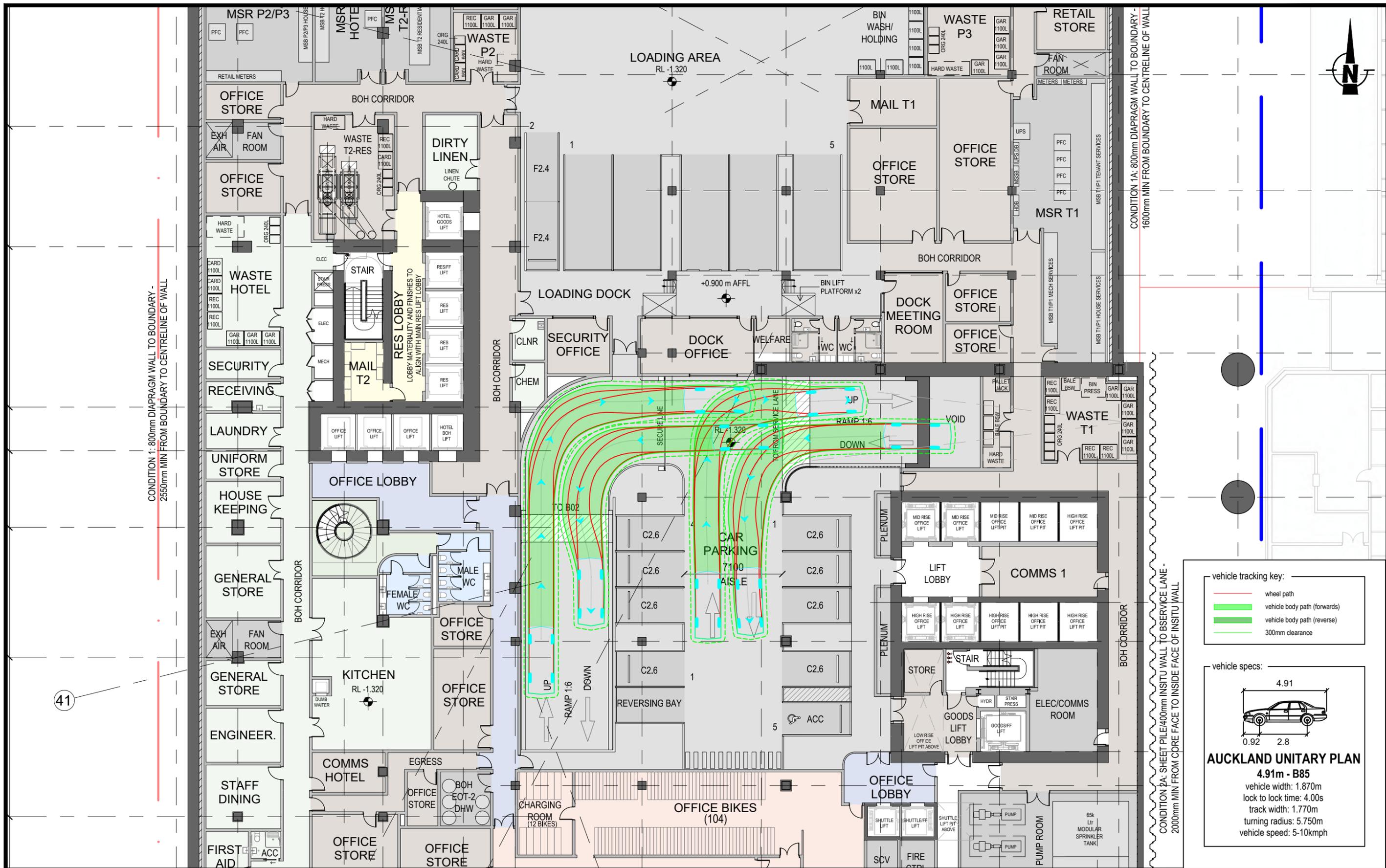
SHEET TITLE: **GROUND FLOOR - VEHICLE TRACKING**
8.3m TRUCK - AON LOADING DOCK

DRAWING NUMBER: PREP006-DC-DW01

SHEET: **04** of 16
 REV: **B**

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CONDITION 1: 800mm DIAPHRAGM WALL TO BOUNDARY - 2550mm MIN FROM BOUNDARY TO CENTRELINE OF WALL

CONDITION 1A: 800mm DIAPHRAGM WALL TO BOUNDARY - 1600mm MIN FROM BOUNDARY TO CENTRELINE OF WALL

CONDITION 2A: SHEET PILE/400mm INSITU WALL TO BSERVICE LANE - 2000mm MIN FROM CORE FACE TO INSIDE FACE OF INSITU WALL

vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

AUCKLAND UNITARY PLAN
4.91m - B85
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0 10m

1:250 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD

FOR DISCUSSION

SHEET TITLE: **BASEMENT 01 - VEHICLE TRACKING**
B85 DESIGN VEHICLE - RAMP CIRCULATION

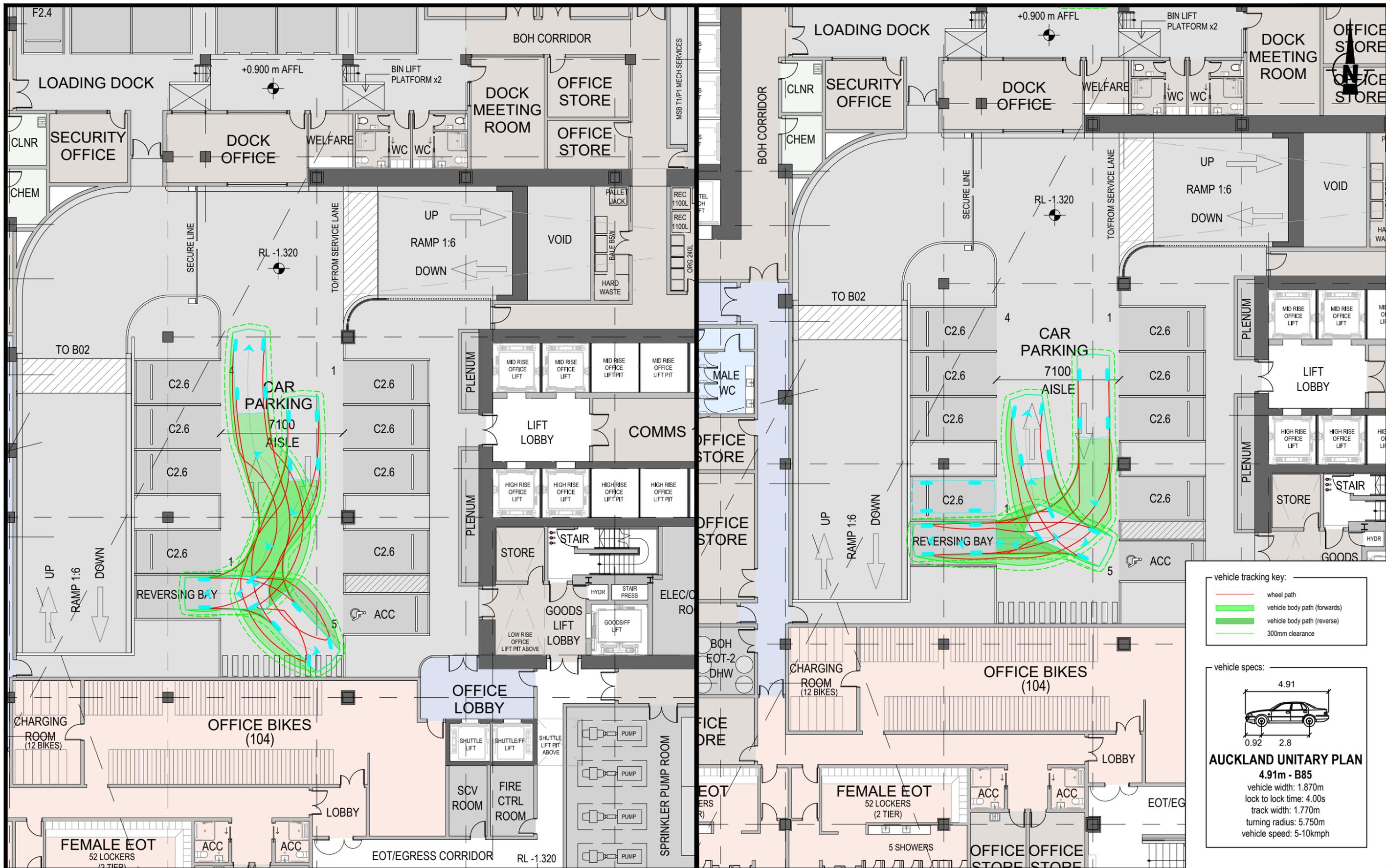
DRAWING NUMBER: PREP006-DC-DW01

SHEET: **05** of 16

REV: **B**

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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

AUCKLAND UNITARY PLAN
4.91m - B85
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0 8m
1:200 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD

FOR DISCUSSION

SHEET TITLE: **BASEMENT 01 - VEHICLE TRACKING**
B85 DESIGN VEHICLE - REVERSEING BAY

DRAWING NUMBER: PREP006-DC-DW01

SHEET: 06 of 16
 REV: B

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 TRANSPORTATION SPECIALISTS

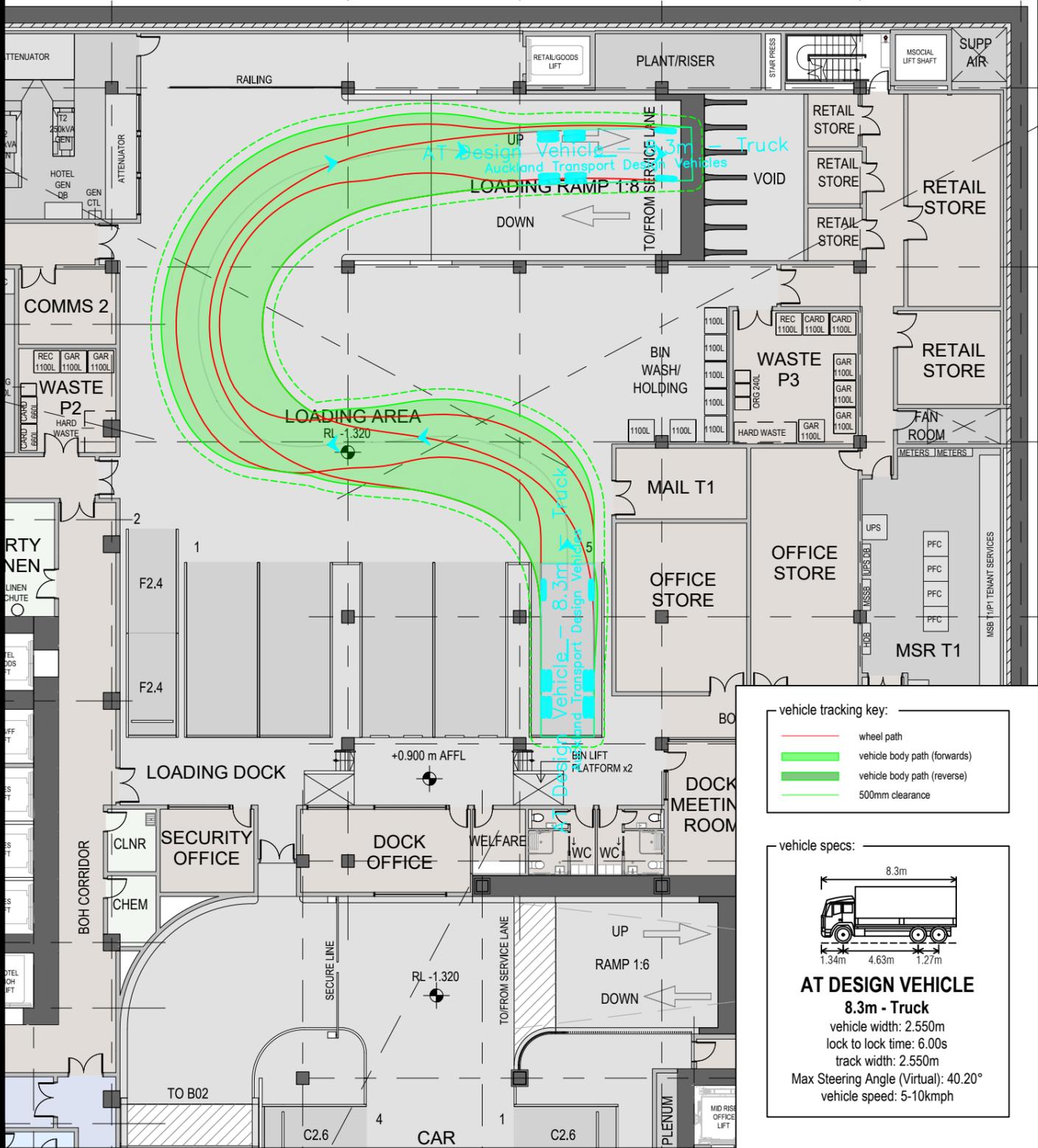
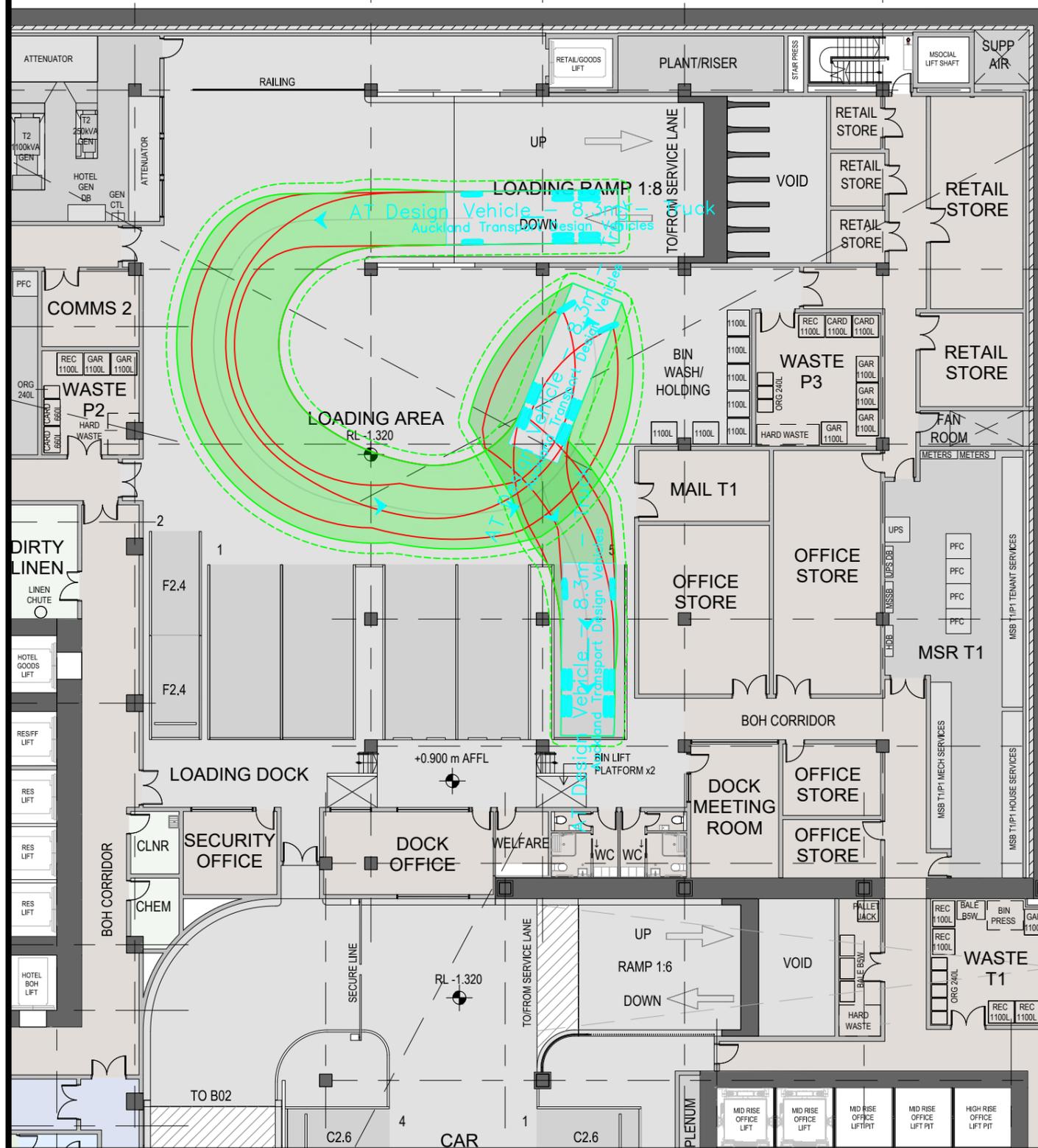
Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
 p 09 970 3820 | f 09 970 3890 | www.flownz.com

CONDITION 1: 800mm DIAPHRAGM WALL TO BOUNDARY -
1350mm MIN FROM BOUNDARY TO CENTRELINE OF WALL

LINE OF EXISTING (NOT IN SCOPE)

CONDITION 1: 800mm DIAPHRAGM WALL TO BOUNDARY -
1350mm MIN FROM BOUNDARY TO CENTRELINE OF WALL

LINE OF EXISTING (NOT IN SCOPE)



vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- - - 500mm clearance

vehicle specs:

AT DESIGN VEHICLE
 8.3m - Truck
 vehicle width: 2.550m
 lock to lock time: 6.00s
 track width: 2.550m
 Max Steering Angle (Virtual): 40.20°
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0	10m
1:250 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD
FOR DISCUSSION

SHEET TITLE: **BASEMENT 01 - VEHICLE TRACKING**
8.3m TRUCK - LOADING DOCK
 DRAWING NUMBER: PREP006-DC-DW01

SHEET: **07** of 16
 REV: **B**

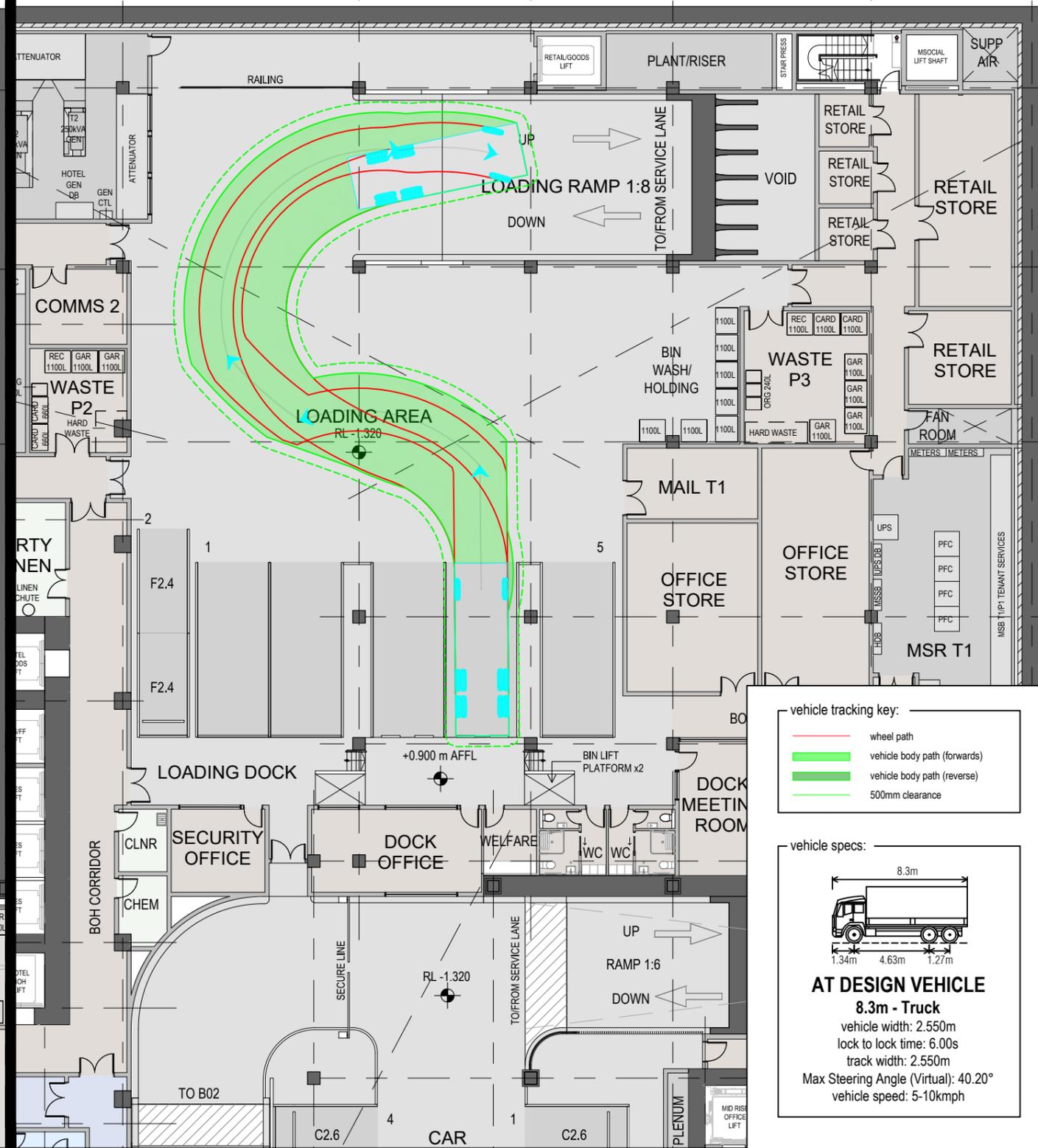
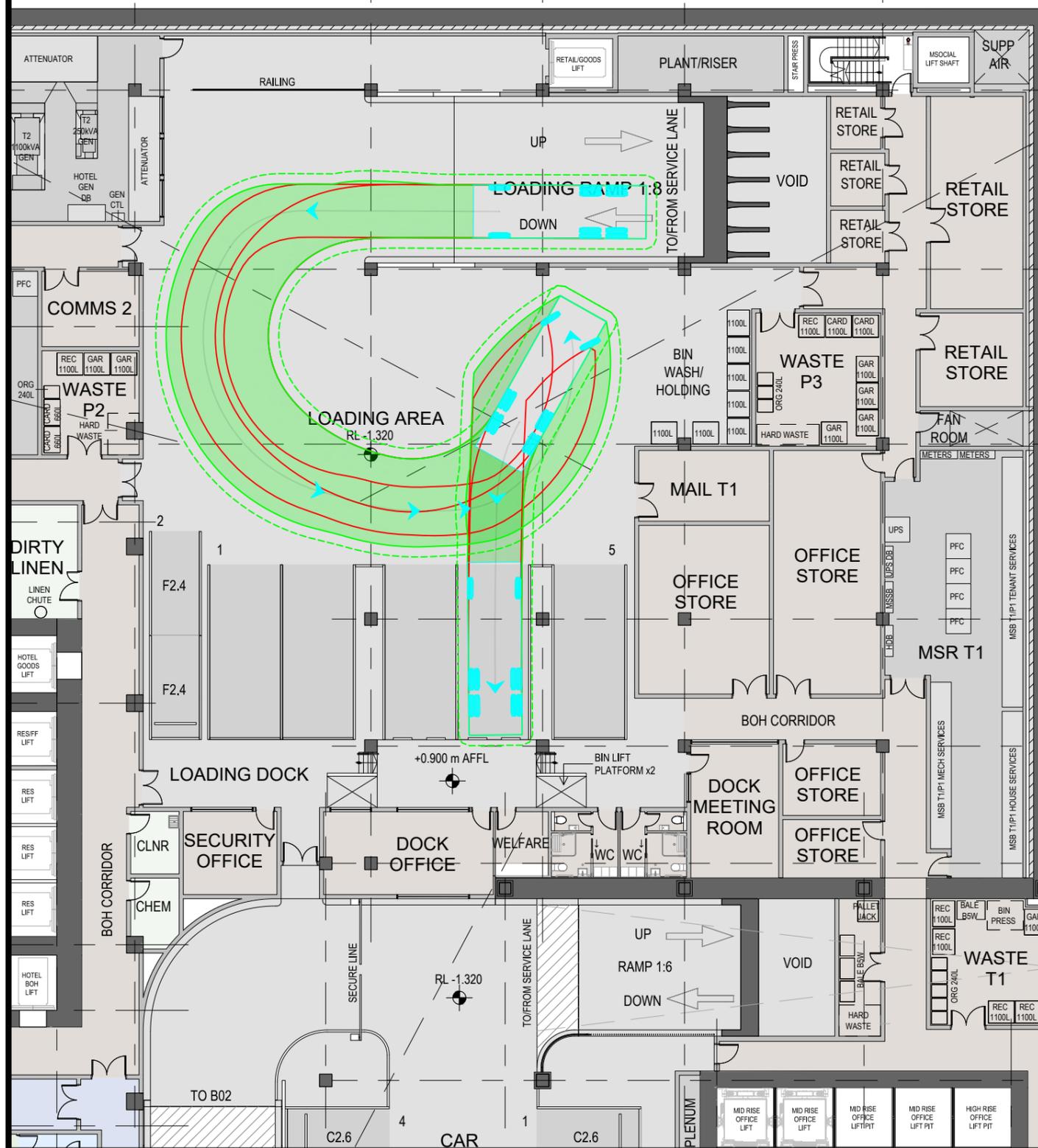
flow
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CONDITION 1: 800mm DIAPHRAGM WALL TO BOUNDARY -
1350mm MIN FROM BOUNDARY TO CENTRELINE OF WALL

LINE OF EXISTING (NOT IN SCOPE)

CONDITION 1: 800mm DIAPHRAGM WALL TO BOUNDARY -
1350mm MIN FROM BOUNDARY TO CENTRELINE OF WALL

LINE OF EXISTING (NOT IN SCOPE)



vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- - - 500mm clearance

vehicle specs:

AT DESIGN VEHICLE
8.3m - Truck
 vehicle width: 2.550m
 lock to lock time: 6.00s
 track width: 2.550m
 Max Steering Angle (Virtual): 40.20°
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

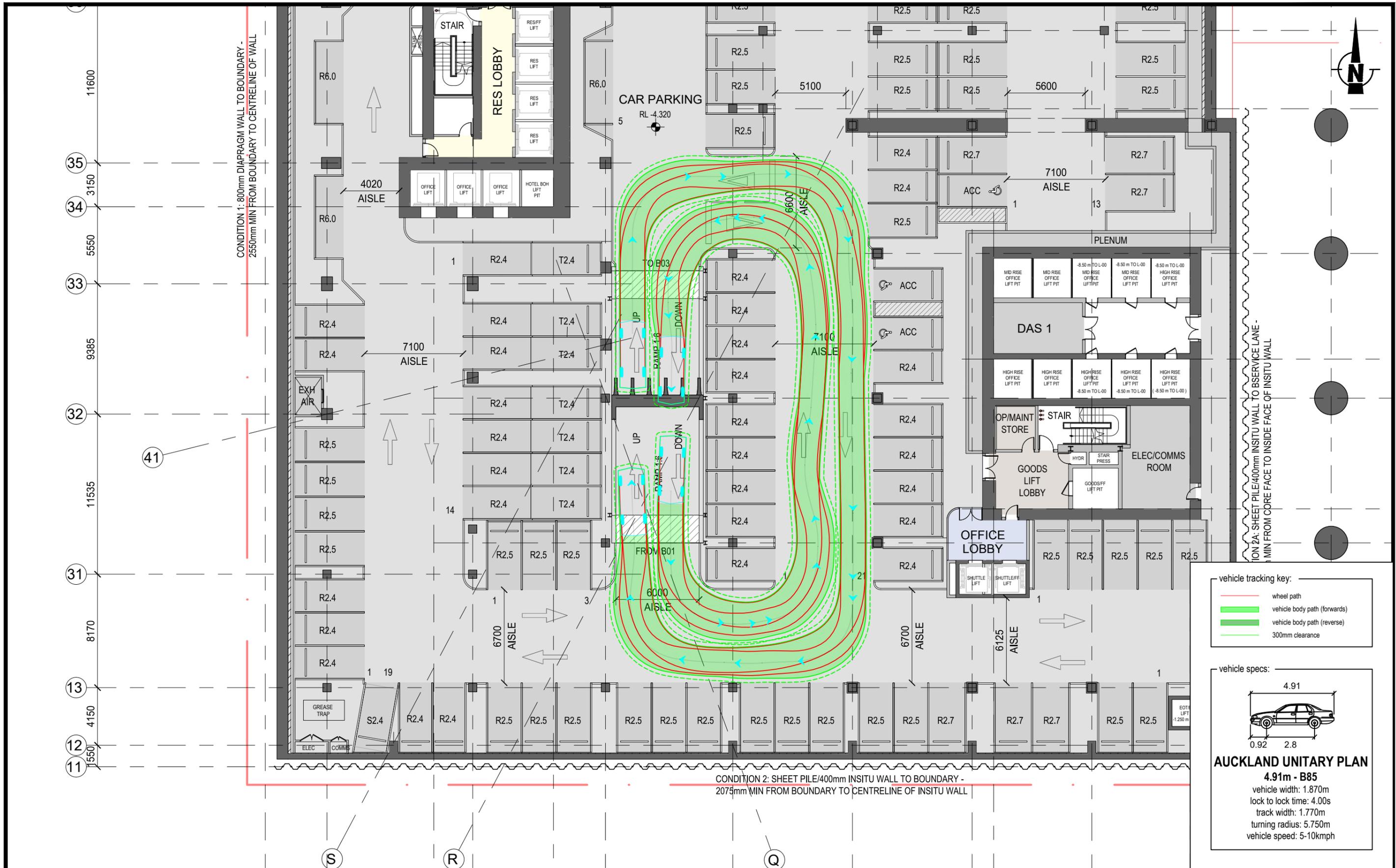
SCALE: 0	10m
1:250 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD
FOR DISCUSSION

SHEET TITLE: **BASEMENT 01 - VEHICLE TRACKING**
8.3m TRUCK - LOADING DOCK
 DRAWING NUMBER: PREP006-DC-DW01

SHEET: **08** of 16
 REV: **B**

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REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0 10m
1:250 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD

FOR DISCUSSION

SHEET TITLE: **BASEMENT 02 - VEHICLE TRACKING**
B85 DESIGN VEHICLE-CIRCULATION AT RAMP

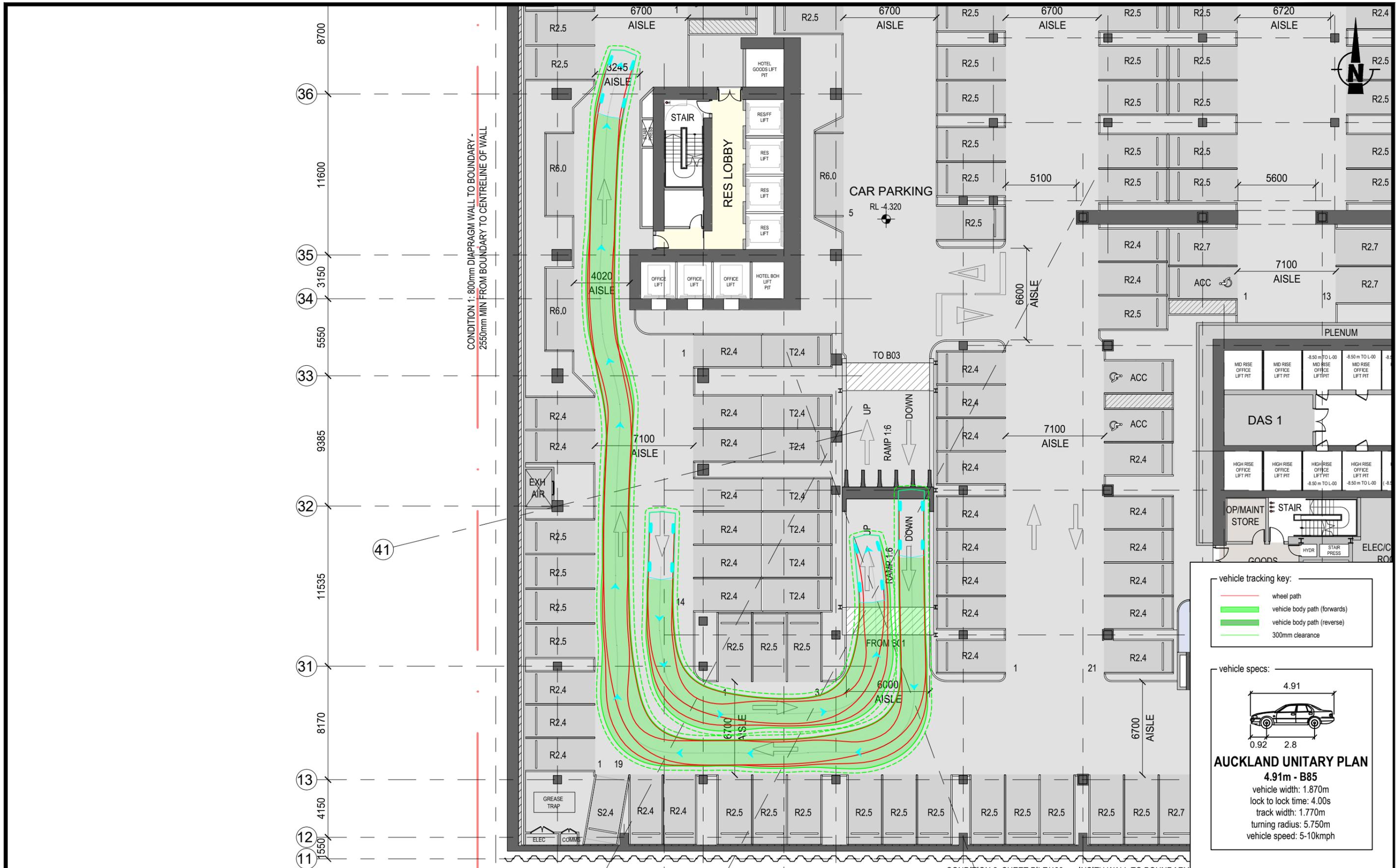
SHEET: 10 of 16

DRAWING NUMBER: PREP006-DC-DW01

REV: B

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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

AUCKLAND UNITARY PLAN
4.91m - B85
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE
A	First Issue	10/09/2025
B	Second Issue	06/11/2025

DESIGN: RG	DRAWN: RG
CHECKED: HS	DATE: 10/09/2025
SCALE: 0 10m	
1:250 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD

FOR DISCUSSION

SHEET TITLE: **BASEMENT 02 - VEHICLE TRACKING B85 DESIGN VEHICLE-CIRCULATION**

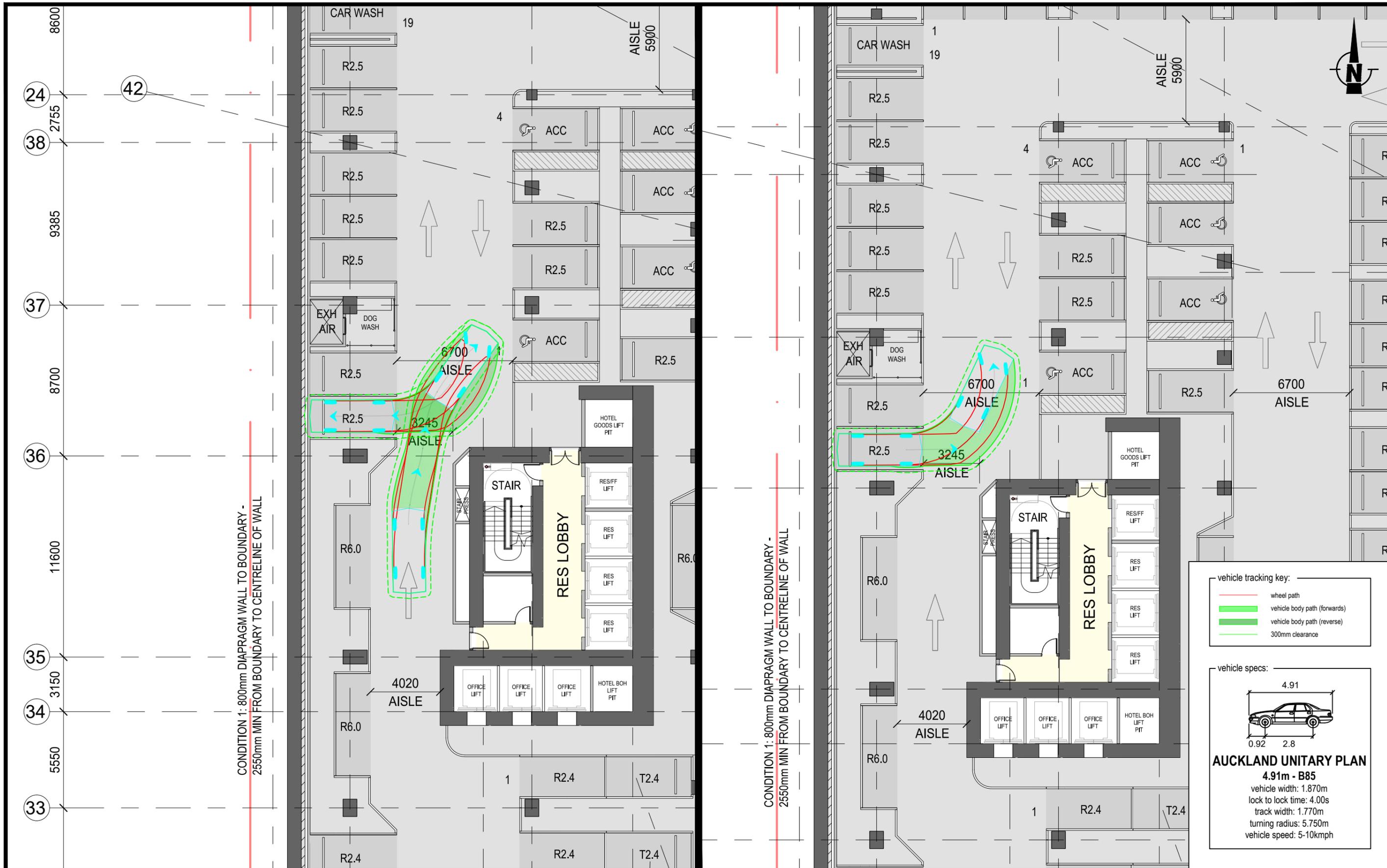
DRAWING NUMBER: PREP006-DC-DW01

SHEET: 11 of 16

REV: B

flow
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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

**AUCKLAND UNITARY PLAN
4.91m - B85**
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE
A	First Issue	10/09/2025
B	Second Issue	06/11/2025

DESIGN: RG	DRAWN: RG
CHECKED: HS	DATE: 10/09/2025
SCALE: 0 8m	
1:200 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD
FOR DISCUSSION

SHEET TITLE: **BASEMENT 02 - VEHICLE TRACKING
B85 DESIGN VEHICLE**
 DRAWING NUMBER: PREP006-DC-DW01

SHEET: 12 of 16
 REV: B

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N 2A: SHEET PILE/400mm INSITU WALL TO BSERVICE LANE - IN FROM CORE FACE TO INSIDE FACE OF INSITU WALL

vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

AUCKLAND UNITARY PLAN
4.91m - B85
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0 8m
 1:200 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD

FOR DISCUSSION

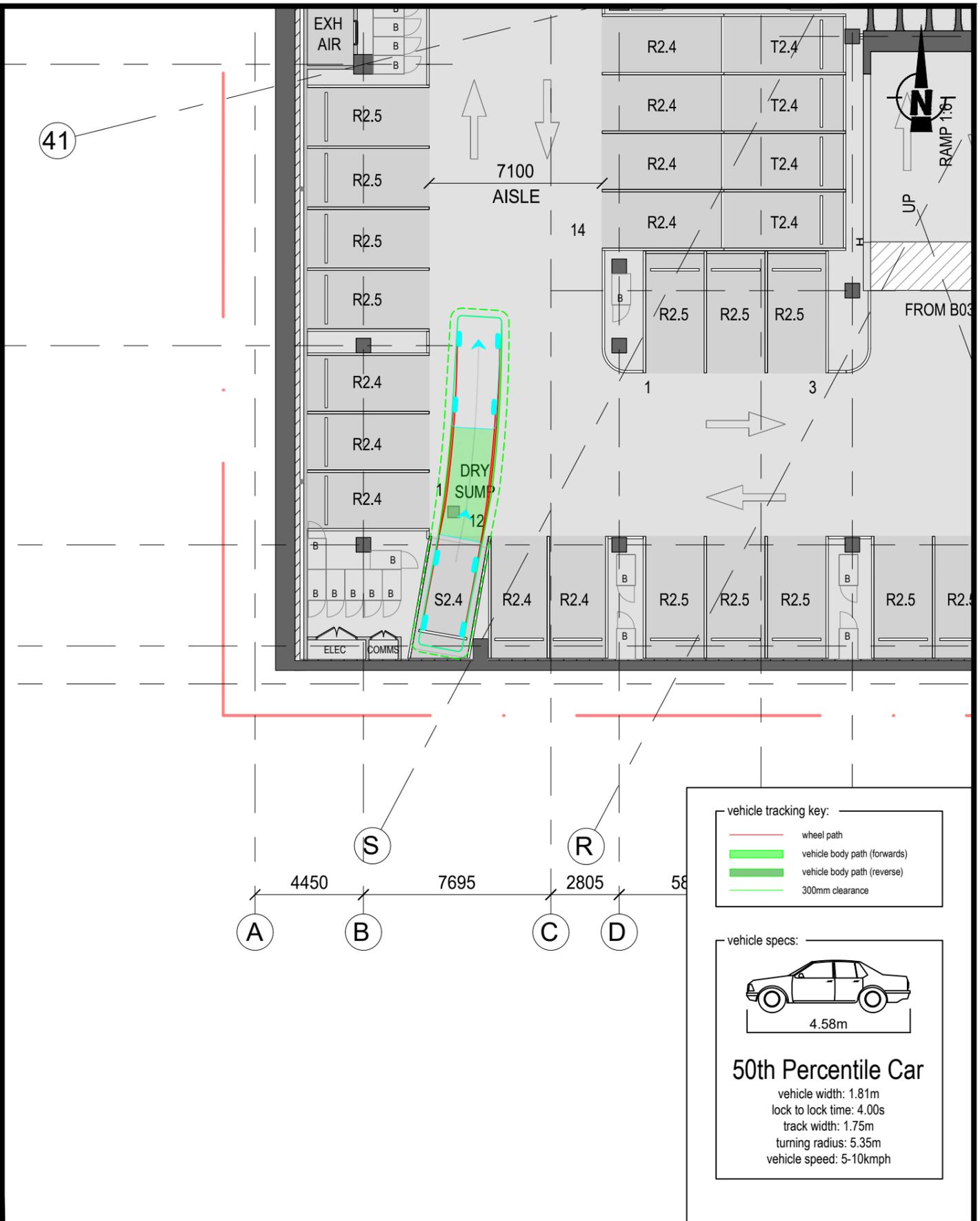
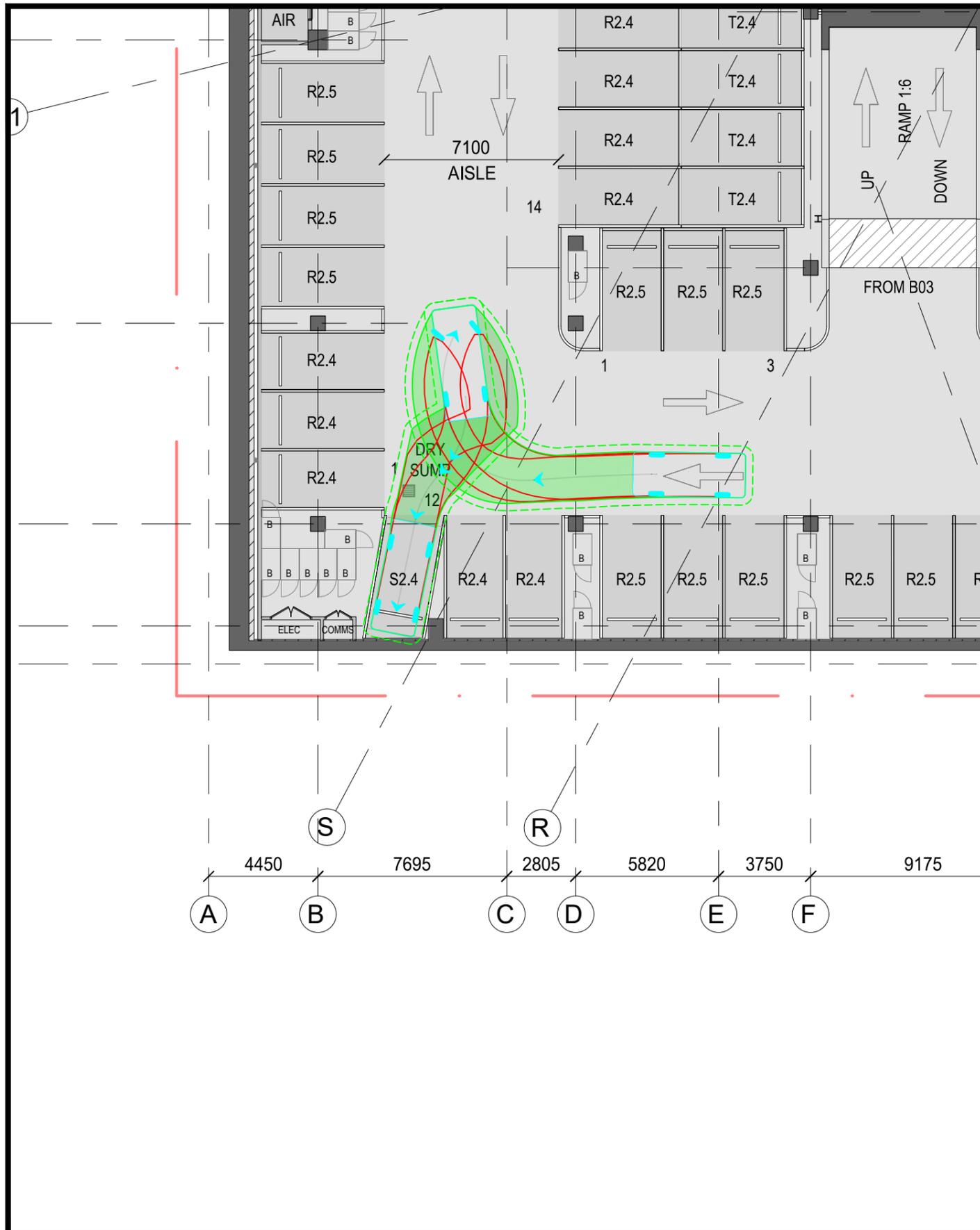
SHEET TITLE: **BASEMENT 02 - VEHICLE TRACKING**
B85 DESIGN VEHICLE

DRAWING NUMBER: PREP006-DC-DW01

SHEET: **13** of 16
 REV: **B**

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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

50th Percentile Car
 vehicle width: 1.81m
 lock to lock time: 4.00s
 track width: 1.75m
 turning radius: 5.35m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE
A	First Issue	10/09/2025
B	Second Issue	06/11/2025

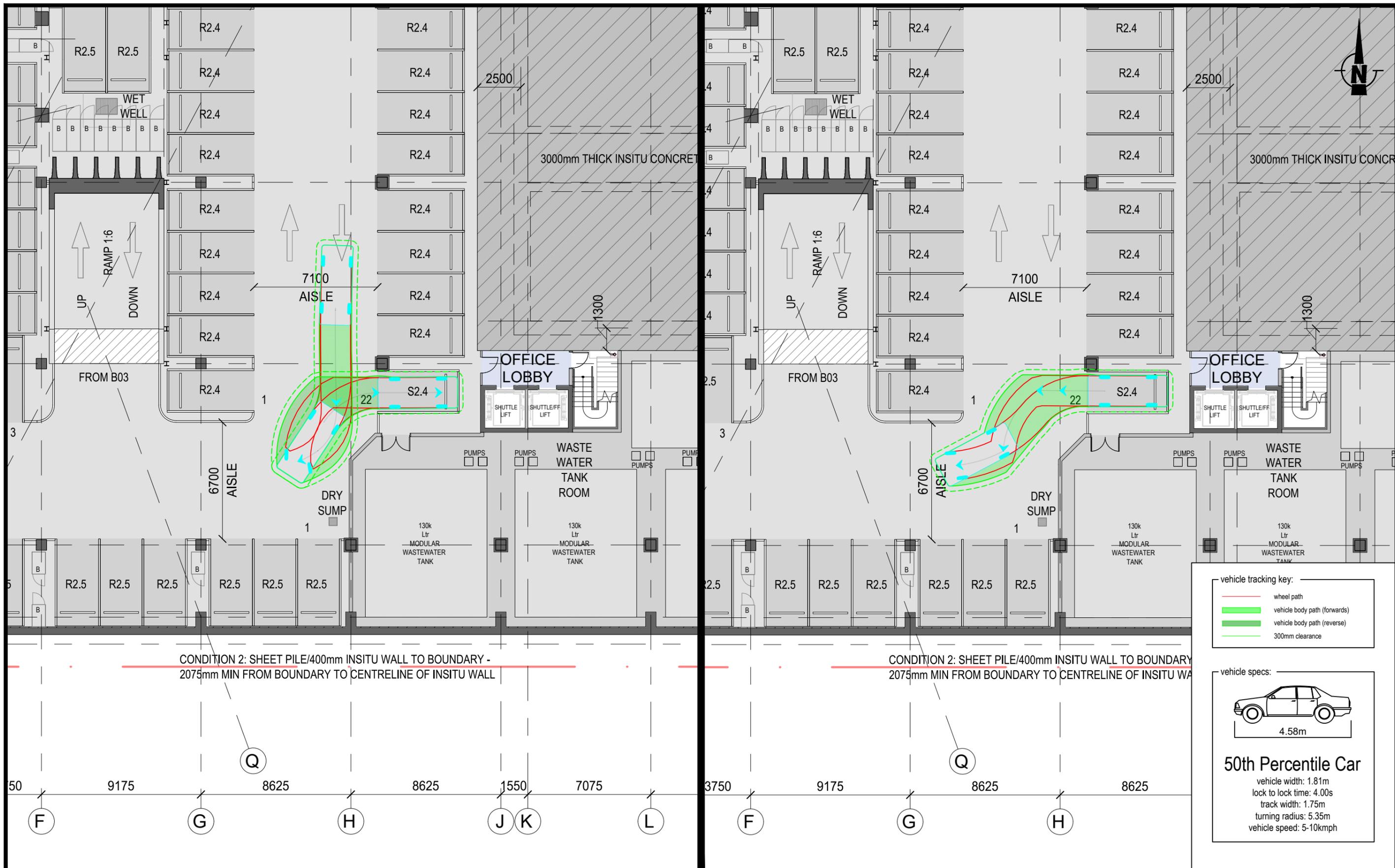
DESIGN: RG	DRAWN: RG
CHECKED: HS	DATE: 10/09/2025
SCALE: 0 8m	
1:200 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD
FOR DISCUSSION

SHEET TITLE: **BASEMENT 04 - VEHICLE TRACKING**
50th PERCENTILE CAR
 DRAWING NUMBER: PREP006-DC-DW01

SHEET: **14** of 16
 REV: **B**

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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- 300mm clearance

vehicle specs:

50th Percentile Car
 vehicle width: 1.81m
 lock to lock time: 4.00s
 track width: 1.75m
 turning radius: 5.35m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0 8m

1:200 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD

FOR DISCUSSION

SHEET TITLE: **BASEMENT 04 - VEHICLE TRACKING
 50th PERCENTILE CAR**

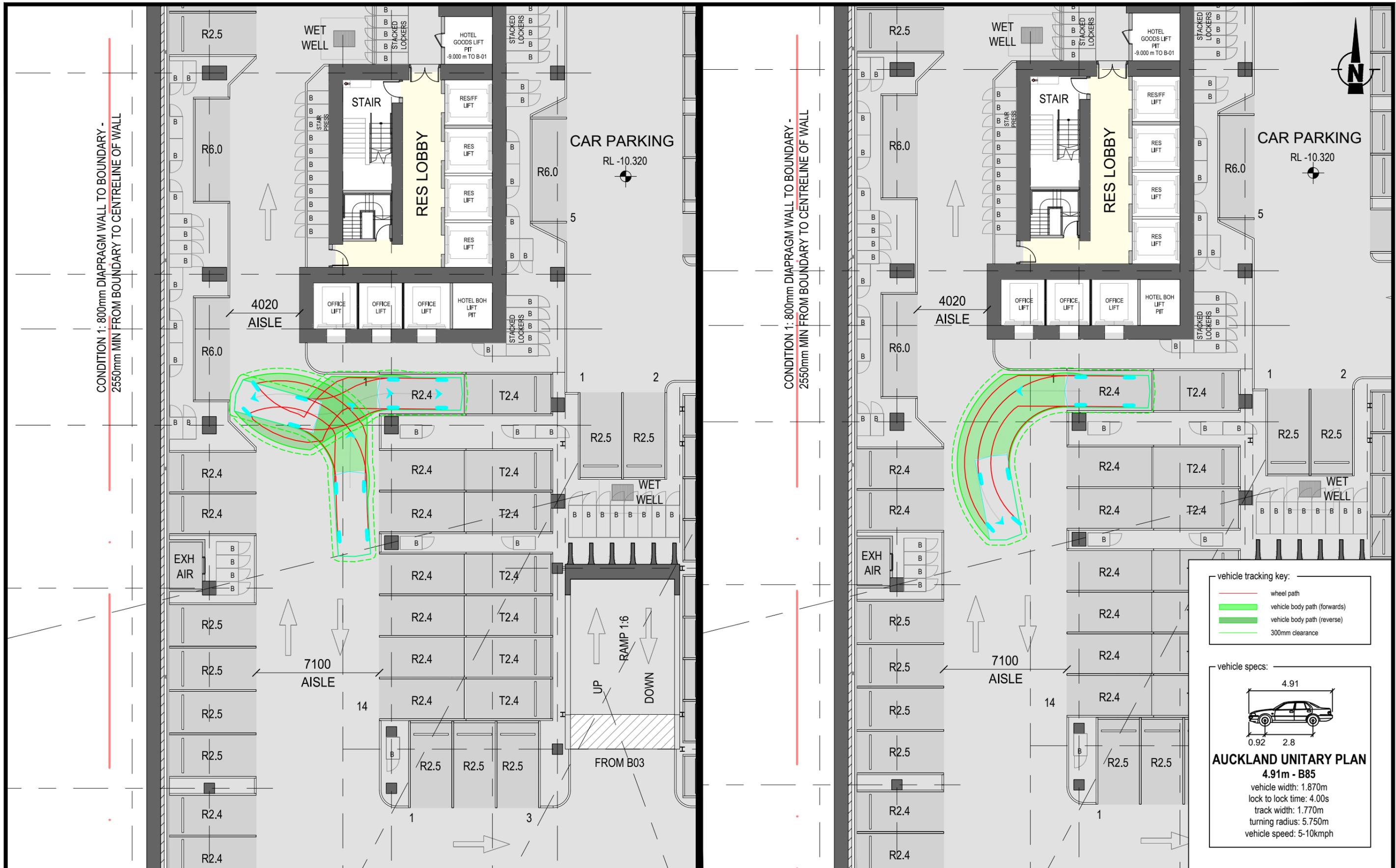
DRAWING NUMBER: PREP006-DC-DW01

SHEET: 15 of 16

REV: B

flow
 TRANSPORTATION SPECIALISTS

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REV	AMENDMENT	DATE OF ISSUE	DESIGN: RG	DRAWN: RG
A	First Issue	10/09/2025	CHECKED: HS	DATE: 10/09/2025
B	Second Issue	06/11/2025		

SCALE: 0	8m
1:200 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: AUCKLAND CBD
FOR DISCUSSION

SHEET TITLE: **BASEMENT 04 - VEHICLE TRACKING**
B85 DESIGN VEHICLE
 DRAWING NUMBER: PREP006-DC-DW01

SHEET: **16 of 16**
 REV: **B**

flow
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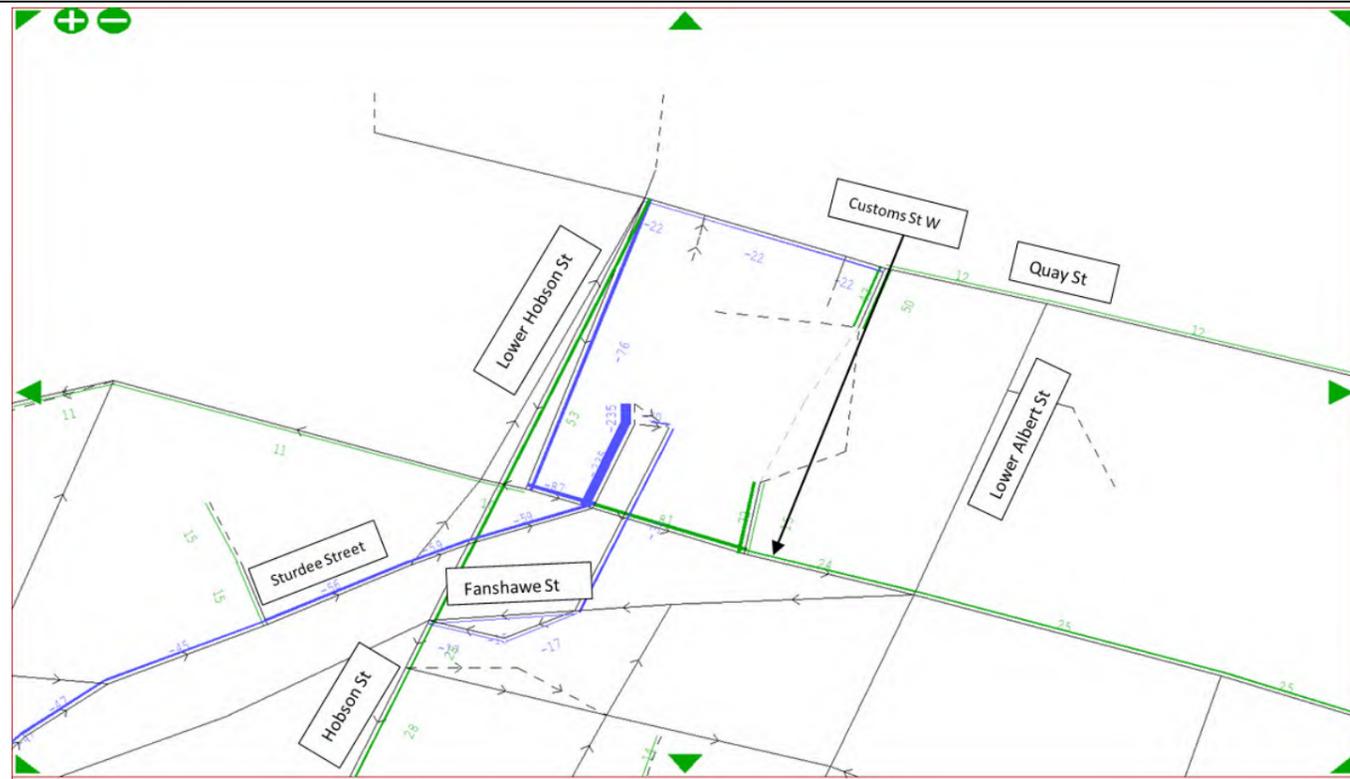
APPENDIX F

SATURN model results

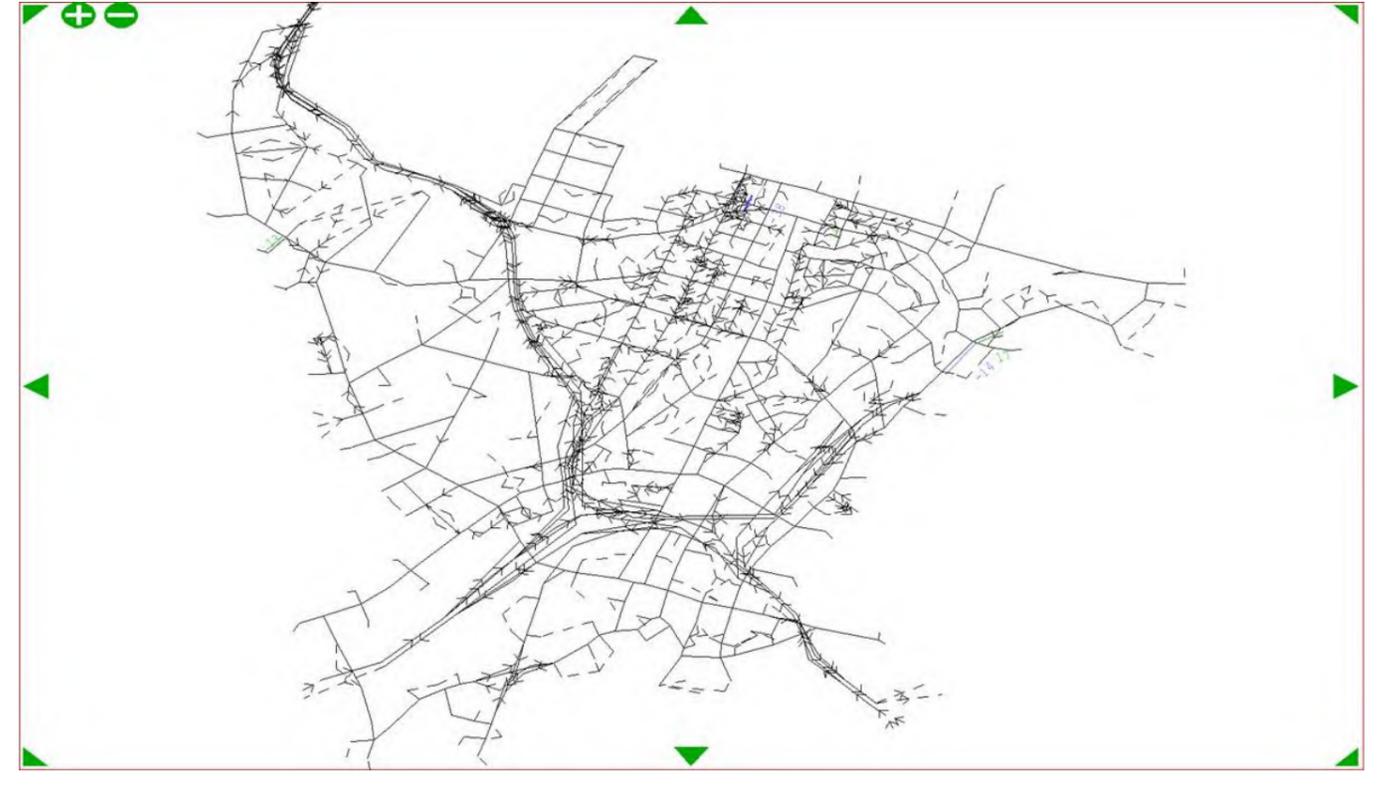
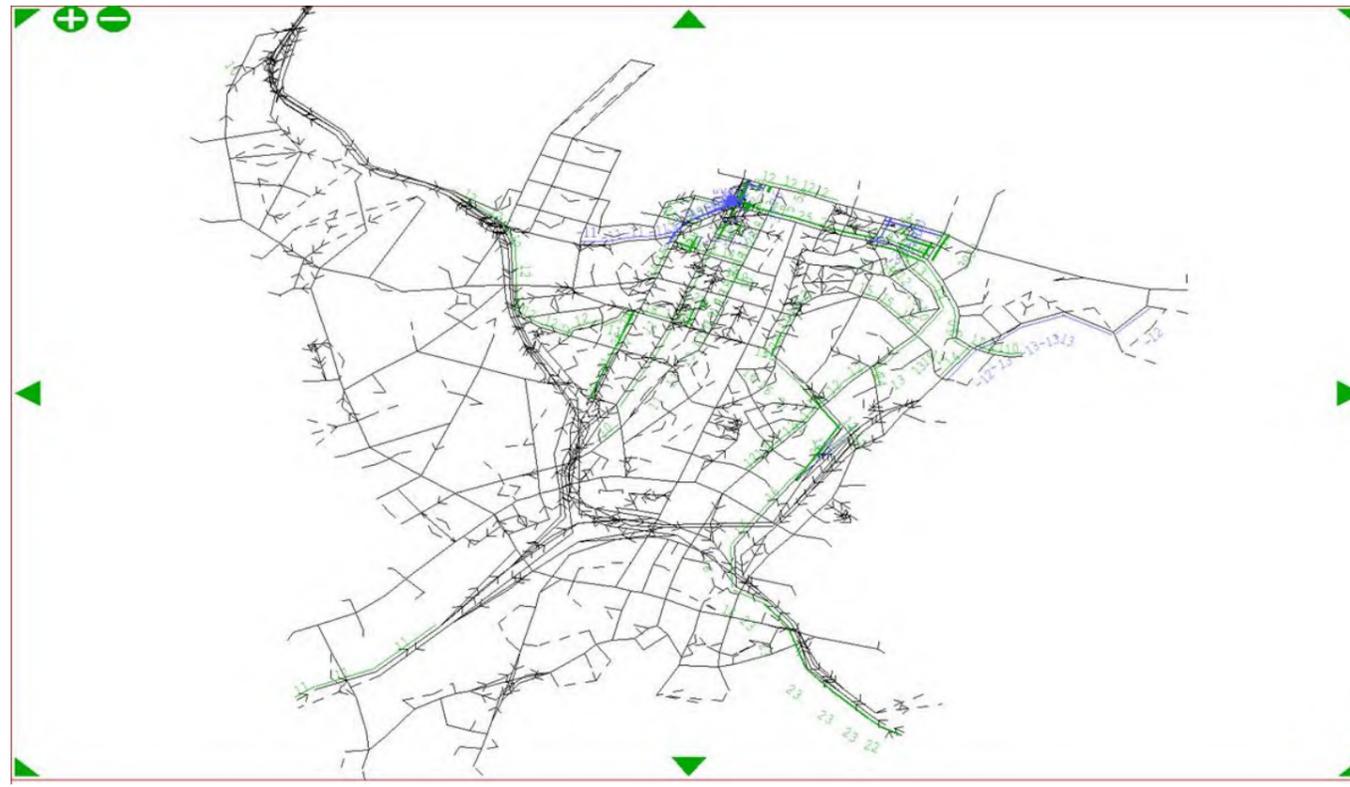
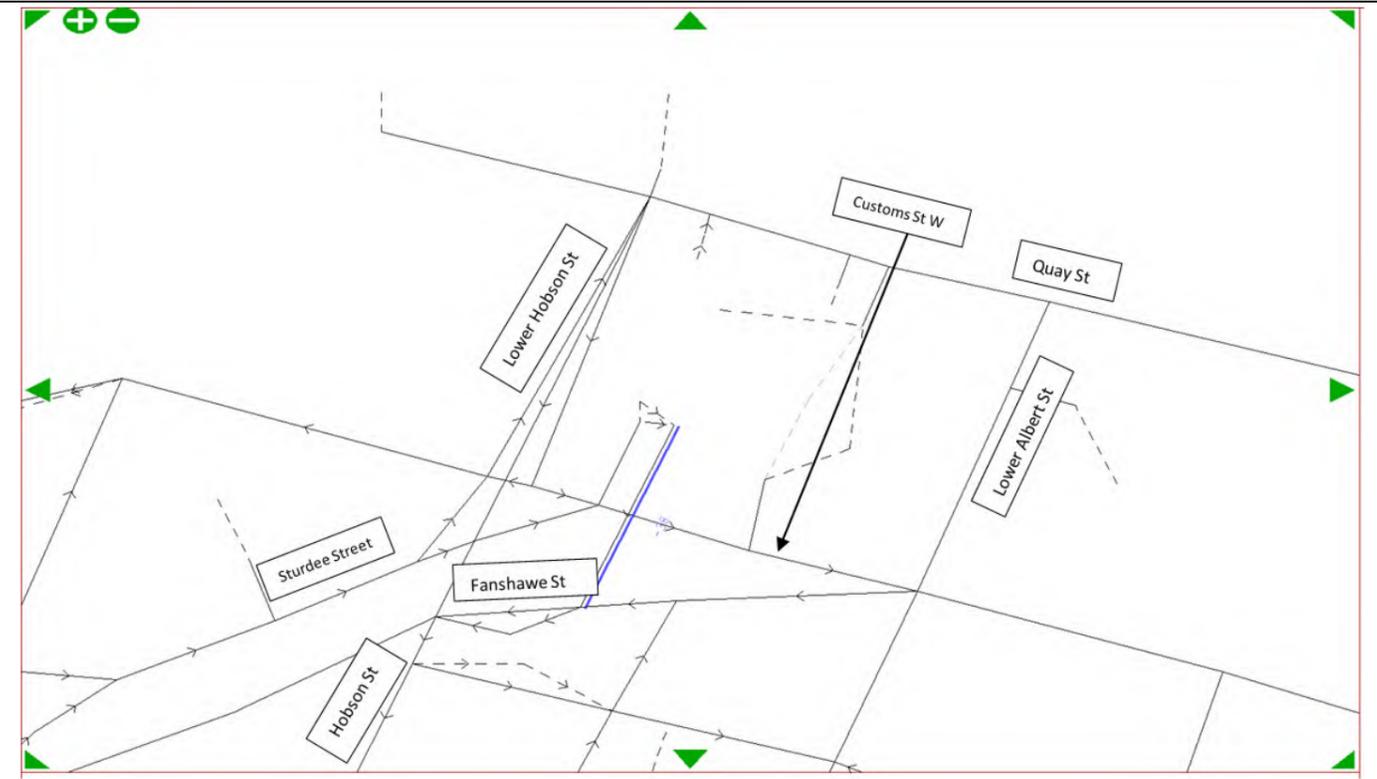
SATURN model volume and delay difference diagrams between the baseline scenario and development scenarios

Scenario 2 Development vs Scenario 1 Future Baseline AM

Volume difference diagram (PCUs per hour)

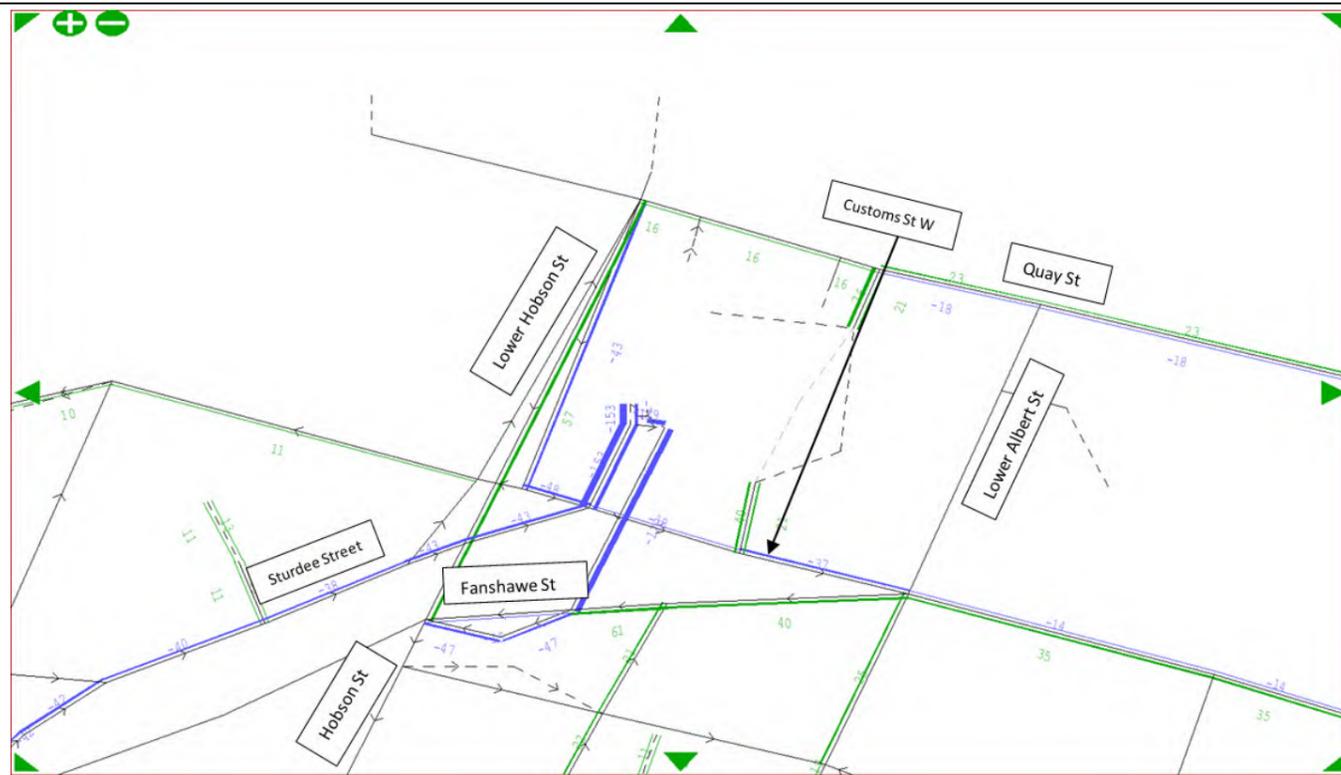


Delay difference diagram (seconds)



Scenario 2 Development vs Scenario 1 Future Baseline PM

Volume difference diagram (PCUs per hour)



Delay difference diagram (seconds)

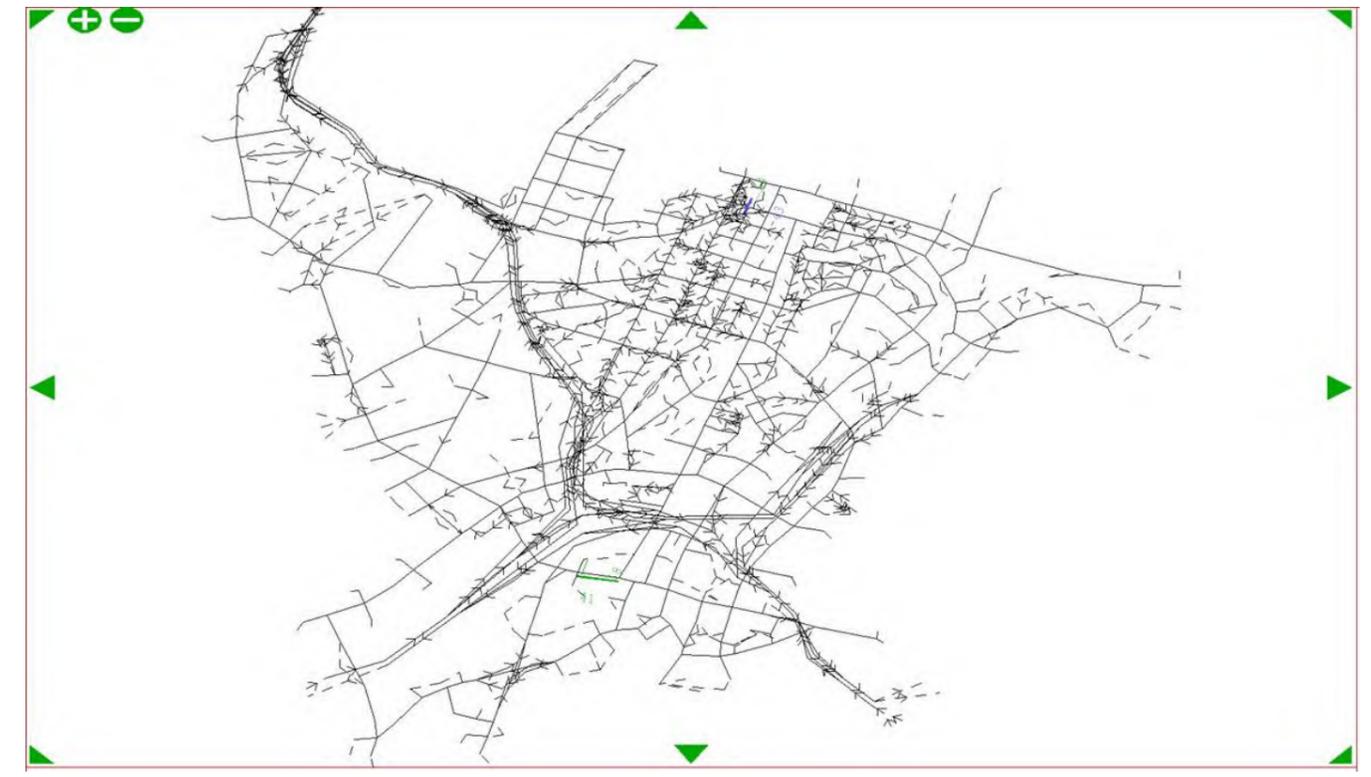
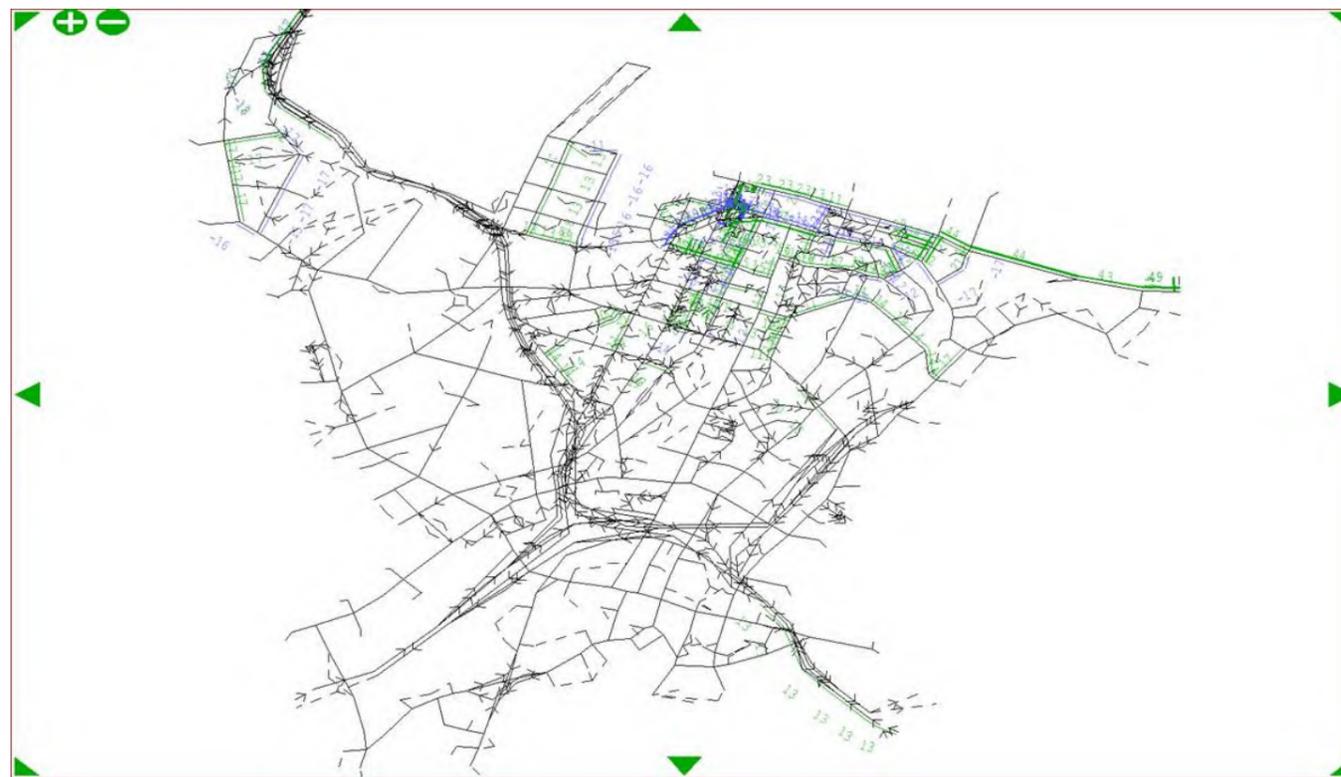
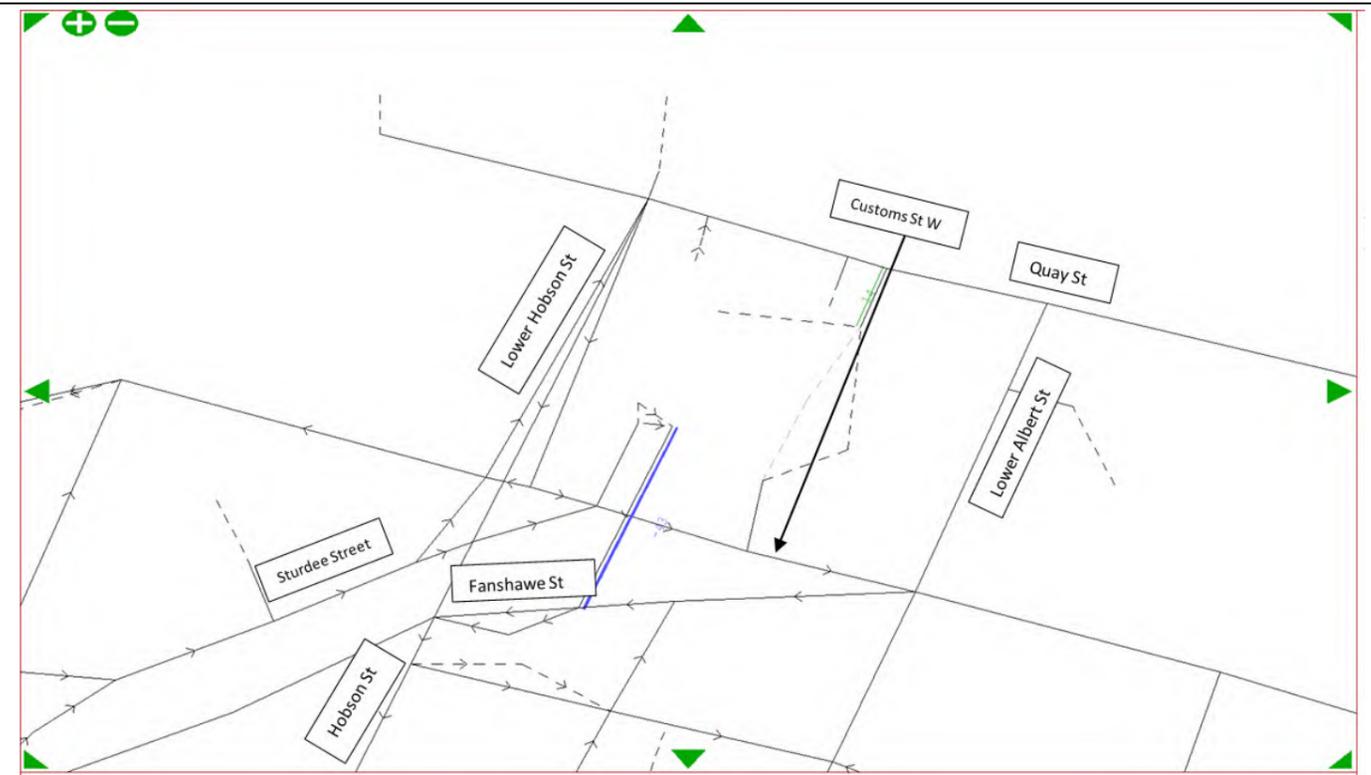


Table F1: Average travel time per vehicle per modelled scenario

Peak Period	Scenario 1	Scenario 2		
	Travel Time	Travel Time (Min:Sec)	Time Difference (Min:Sec)	Percentage Change
AM	06:28	06:28	00:00	0%
PM	06:43	06:45	00:02	0%

Table F2: Bus route travel times per modelled scenario, AM & PM peak period

AM peak period					PM peak period				
Bus Route	Scenario 1	Scenario 2			Bus Route	Scenario 1	Scenario 2		
	Travel Time (Min:Sec)	Travel Time (Min:Sec)	Time Difference (Min:Sec)	% Change		Travel Time (Min:Sec)	Travel Time (Min:Sec)	Time Difference (Min:Sec)	% Change
101i	17:38	17:41	00:03	0%	101i	17:31	17:25	-00:06	-1%
101o	15:37	15:37	00:00	0%	101o	16:13	16:16	00:03	0%
105i	20:41	20:40	-00:01	0%	105i	20:37	20:20	-00:17	-1%
105o	15:29	15:29	00:00	0%	105o	15:07	15:07	00:00	0%
106	29:35	29:32	-00:03	0%	106	29:50	29:40	-00:10	-1%
11Ti	19:39	19:38	-00:01	0%	11Ti	19:08	18:51	-00:17	-1%
11To	14:21	14:20	-00:01	0%	11To	14:01	14:00	-00:01	0%
11Wi	19:39	19:38	-00:01	0%	11Wi	19:08	18:51	-00:17	-1%
11Wo	14:21	14:20	-00:01	0%	11Wo	14:01	14:00	-00:01	0%
18i	19:39	19:38	-00:01	0%	18i	19:08	18:51	-00:17	-1%
18o	14:21	14:20	-00:01	0%	18o	14:01	14:00	-00:01	0%
195i	19:44	19:41	-00:03	0%	195i	19:38	19:21	-00:17	-1%
195o	14:17	14:17	00:00	0%	195o	13:57	13:57	00:00	0%
20i	14:19	14:23	00:04	0%	20i	15:13	15:09	-00:04	0%
20o	14:19	14:20	00:01	0%	20o	14:40	14:40	00:00	0%
209i	19:39	19:38	-00:01	0%	209i	19:08	18:51	-00:17	-1%
209o	14:21	14:20	-00:01	0%	209o	14:01	14:00	-00:01	0%
22Ni	14:08	14:07	-00:01	0%	22Ni	13:11	13:11	00:00	0%
22No	14:39	14:49	00:10	1%	22No	14:33	14:43	00:10	1%
22Ri	14:08	14:07	-00:01	0%	22Ri	13:11	13:11	00:00	0%
22Ro	14:39	14:49	00:10	1%	22Ro	14:33	14:43	00:10	1%
24Bi	14:14	14:14	00:00	0%	24Bi	13:20	13:20	00:00	0%
24Bo	14:16	14:26	00:10	1%	24Bo	14:02	14:11	00:09	1%
24Ri	14:14	14:14	00:00	0%	24Ri	13:20	13:20	00:00	0%
24Ro	14:16	14:26	00:10	1%	24Ro	14:02	14:11	00:09	1%
252i	17:23	17:24	00:01	0%	252i	17:23	17:23	00:00	0%
252o	09:16	09:17	00:01	0%	252o	09:16	09:17	00:01	0%
253i	17:23	17:24	00:01	0%	253i	17:23	17:23	00:00	0%
253o	09:16	09:17	00:01	0%	253o	09:16	09:17	00:01	0%
25Bi	09:14	09:14	00:00	0%	25Bi	10:20	10:23	00:03	0%
25Bo	07:37	07:38	00:01	0%	25Bo	07:28	07:28	00:00	0%

25Li	09:14	09:14	00:00	0%	25Li	10:20	10:23	00:03	0%
25Lo	07:37	07:38	00:01	0%	25Lo	07:28	07:28	00:00	0%
27Hi	12:27	12:26	-00:01	0%	27Hi	12:23	12:23	00:00	0%
27Ho	12:19	12:29	00:10	1%	27Ho	12:22	12:32	00:10	1%
27Ti	12:27	12:26	-00:01	0%	27Ti	12:23	12:23	00:00	0%
27To	12:19	12:29	00:10	1%	27To	12:22	12:32	00:10	1%
27Wi	12:27	12:26	-00:01	0%	27Wi	12:23	12:23	00:00	0%
27Wo	12:19	12:29	00:10	1%	27Wo	12:22	12:32	00:10	1%
295i	10:23	10:23	00:00	0%	295i	10:38	10:38	00:00	0%
295o	12:13	12:12	-00:01	0%	295o	12:05	12:07	00:02	0%
30i	10:23	10:23	00:00	0%	30i	10:38	10:38	00:00	0%
30o	12:13	12:12	-00:01	0%	30o	12:05	12:07	00:02	0%
309i	10:23	10:23	00:00	0%	309i	10:38	10:38	00:00	0%
309o	12:13	12:12	-00:01	0%	309o	12:05	12:07	00:02	0%
321i	10:11	10:13	00:02	0%	321i	08:59	08:59	00:00	0%
321o	09:20	09:29	00:09	2%	321o	09:31	09:41	00:10	2%
70i	19:09	19:11	00:02	0%	70i	19:13	19:17	00:04	0%
70o	10:51	10:53	00:02	0%	70o	09:52	09:47	-00:05	-1%
72Xi	18:56	18:59	00:03	0%	72Xi	19:04	19:07	00:03	0%
72Xo	11:34	11:37	00:03	0%	72Xo	10:52	10:52	00:00	0%
75i	15:41	15:43	00:02	0%	75i	15:23	15:22	-00:01	0%
75o	15:51	15:52	00:01	0%	75o	14:56	14:52	-00:04	0%
755i	08:42	08:40	-00:02	0%	755i	07:22	07:20	-00:02	0%
755o	07:55	08:03	00:08	2%	755o	07:38	07:48	00:10	2%
76i	06:22	06:20	-00:02	-1%	76i	06:08	06:05	-00:03	-1%
76o	06:34	06:44	00:10	3%	76o	07:14	07:24	00:10	2%
774i	06:22	06:20	-00:02	-1%	774i	06:08	06:05	-00:03	-1%
774o	06:34	06:44	00:10	3%	774o	07:14	07:24	00:10	2%
775i	06:22	06:20	-00:02	-1%	775i	06:08	06:05	-00:03	-1%
775o	06:34	06:44	00:10	3%	775o	07:14	07:24	00:10	2%
802i	12:53	12:56	00:03	0%	802i	13:49	13:44	-00:05	-1%
802o	11:49	11:50	00:01	0%	802o	11:35	11:32	-00:03	0%
82i	12:53	12:56	00:03	0%	82i	13:49	13:44	-00:05	-1%
82o	11:49	11:50	00:01	0%	82o	11:35	11:32	-00:03	0%
866i	15:57	15:58	00:01	0%	866i	17:58	17:57	-00:01	0%
866o	18:28	18:31	00:03	0%	866o	18:34	18:35	00:01	0%
923i	12:53	12:56	00:03	0%	923i	13:49	13:44	-00:05	-1%
923o	11:49	11:50	00:01	0%	923o	11:35	11:32	-00:03	0%
924i	12:53	12:56	00:03	0%	924i	13:49	13:44	-00:05	-1%
924o	11:49	11:50	00:01	0%	924o	11:35	11:32	-00:03	0%
931i	17:04	17:04	00:00	0%	931i	19:14	19:14	00:00	0%
931o	13:22	13:17	-00:05	-1%	931o	11:59	11:55	-00:04	-1%
933i	17:04	17:04	00:00	0%	933i	19:14	19:14	00:00	0%
933o	13:22	13:17	-00:05	-1%	933o	11:59	11:55	-00:04	-1%
939i	17:04	17:04	00:00	0%	939i	19:14	19:14	00:00	0%

939o	13:22	13:17	-00:05	-1%	939o	11:59	11:55	-00:04	-1%
95Bi	07:05	07:06	00:01	0%	95Bi	08:40	08:38	-00:02	0%
95Bo	08:06	08:05	-00:01	0%	95Bo	07:29	07:29	00:00	0%
95Ci	07:05	07:06	00:01	0%	95Ci	08:40	08:38	-00:02	0%
95Co	08:06	08:05	-00:01	0%	95Co	07:29	07:29	00:00	0%
966i	15:57	15:58	00:01	0%	966i	17:58	17:57	-00:01	0%
966o	18:28	18:31	00:03	0%	966o	18:34	18:35	00:01	0%
97Bi	07:05	07:06	00:01	0%	97Bi	08:40	08:38	-00:02	0%
97Bo	08:06	08:05	-00:01	0%	97Bo	07:29	07:29	00:00	0%
97Ri	07:05	07:06	00:01	0%	97Ri	08:40	08:38	-00:02	0%
97Ro	08:06	08:05	-00:01	0%	97Ro	07:29	07:29	00:00	0%
CTY	35:58	35:58	00:00	0%	CTY	36:01	36:02	00:01	0%
INNi	30:43	30:41	-00:02	0%	INNi	30:35	30:43	00:08	0%
INNo	33:28	33:32	00:04	0%	INNo	33:44	33:50	00:06	0%
NX1i	07:05	07:06	00:01	0%	NX1i	08:40	08:38	-00:02	0%
NX1o	08:06	08:05	-00:01	0%	NX1o	07:29	07:29	00:00	0%
NX2i	14:02	14:05	00:03	0%	NX2i	14:59	14:55	-00:04	0%
NX2o	13:04	13:03	-00:01	0%	NX2o	13:16	13:14	-00:02	0%
OUTi	22:43	22:13	-00:30	-2%	OUTi	21:12	21:07	-00:05	0%
OUTo	20:21	20:12	-00:09	-1%	OUTo	20:38	20:40	00:02	0%
TMKi	06:22	06:20	-00:02	-1%	TMKi	06:08	06:05	-00:03	-1%
TMKo	06:34	06:44	00:10	3%	TMKo	07:14	07:24	00:10	2%
WX1i	20:12	20:10	-00:02	0%	WX1i	19:13	18:56	-00:17	-1%
WX1o	14:23	14:23	00:00	0%	WX1o	14:55	14:52	-00:03	0%

APPENDIX G

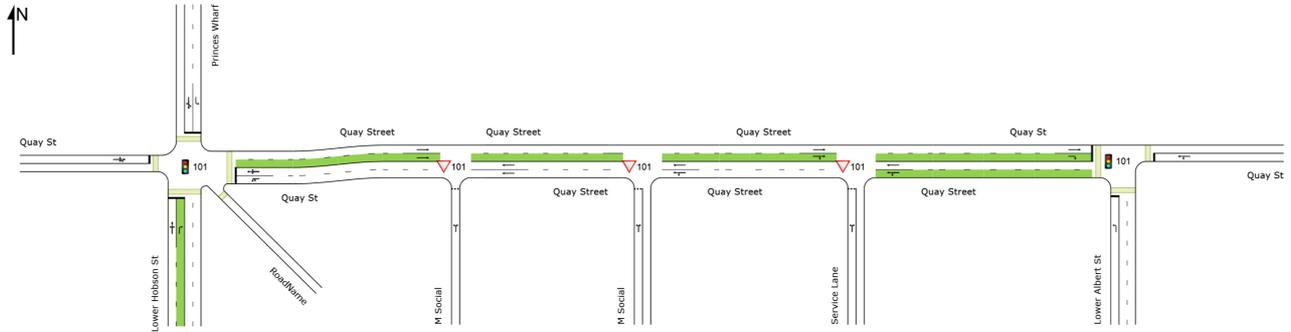
SIDRA model results

NETWORK LAYOUT

Network: N101 [Quay Street AM (Network Folder: Future Base Model)]

New Network
 Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	CCG ID	Site Name
▽101	NA	Quay Street Service lane Access - AM
▽101	NA	M - Social East - AM
▽101	NA	M - Social West - AM
🚦101	NA	Quay St / Lower Albert St - AM
🚦101	NA	Quay St / Lower Hobson St - AM

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NETWORK LAYOUT

Network: N101 [Customs Street AM (Network Folder: Future Base Model)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	CCG ID	Site Name
▽101	NA	Custom Street Access - AM
🚦101	NA	Customs / Albert / Lower Albert - AM
▽101	NA	Sturdee St/Slip Lane Lower Hobson St/Custom St W - AM

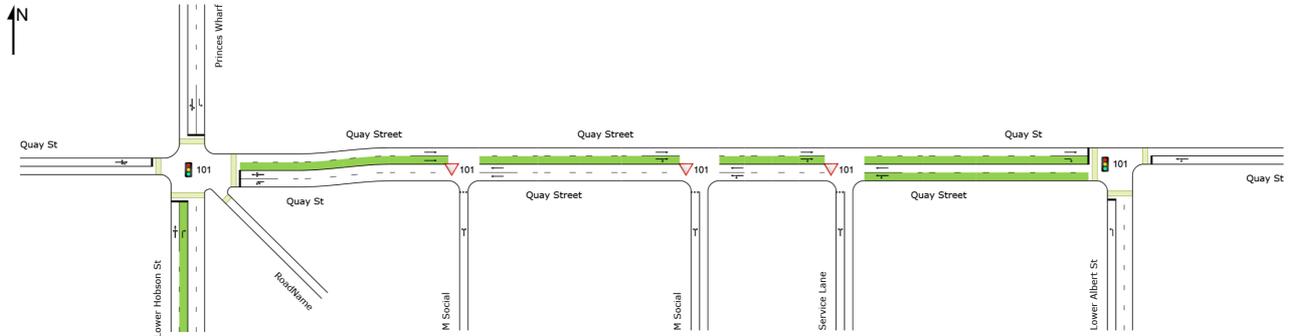
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NETWORK LAYOUT

Network: N101 [Quay Street AM (Network Folder: Future Development Model)]

New Network
 Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	CCG ID	Site Name
▽101	NA	Quay Street Service lane Access - AM
▽101	NA	M - Social East - AM
▽101	NA	M - Social West - AM
🚦101	NA	Quay St / Lower Albert St - AM
🚦101	NA	Quay St / Lower Hobson St - AM

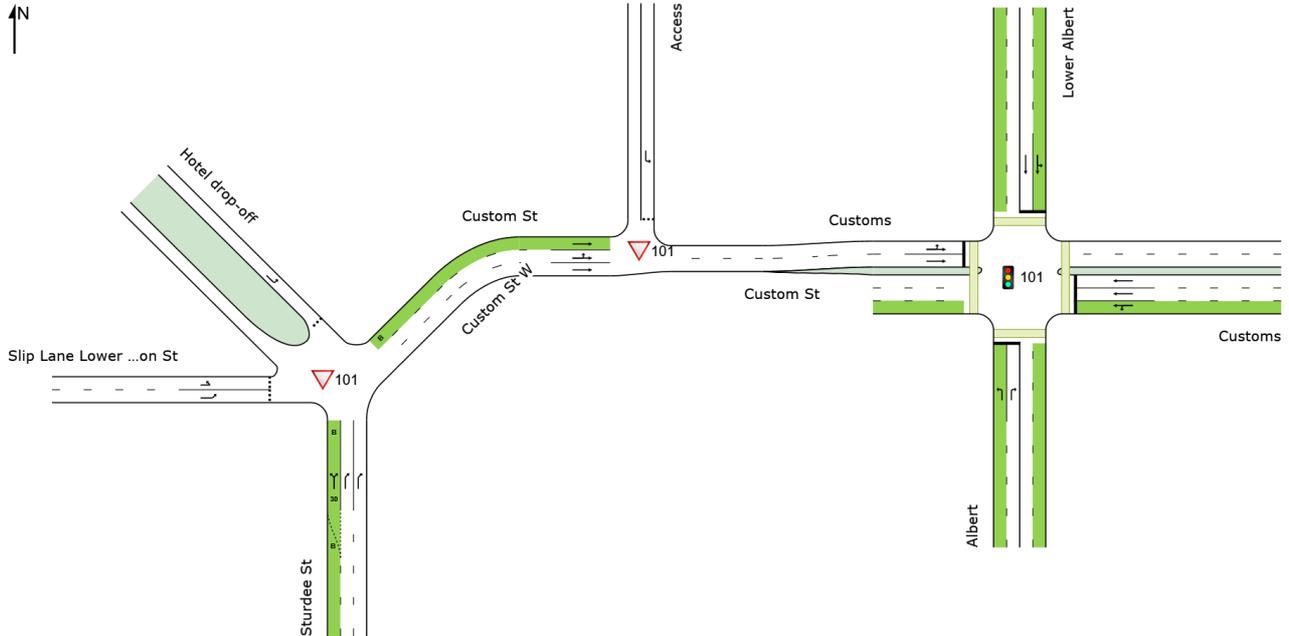
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NETWORK LAYOUT

Network: N101 [Customs Street AM (Network Folder: Future Development Model)]

New Network
 Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	CCG ID	Site Name
▽101	NA	Custom Street Access - AM
🚦101	NA	Customs / Albert / Lower Albert - AM
▽101	NA	Sturdee St/Slip Lane Lower Hobson St/Drop off area - AM

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MOVEMENT SUMMARY

Site: 101 [Quay Street Service lane Access - AM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street AM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Service Lane															
7	L2	All MCs	46	2.2	46	2.2	0.074	4.8	LOS A	0.3	2.2	0.20	0.49	0.20	42.1
9	R2	All MCs	13	7.7	13	7.7	0.074	14.7	LOS B	0.3	2.2	0.20	0.49	0.20	42.1
Approach			59	3.4	59	3.4	0.074	6.9	LOS A	0.3	2.2	0.20	0.49	0.20	42.1
East: Quay Street															
10	L2	All MCs	60	1.7	60	1.7	0.059	4.1	LOS A	0.0	0.0	0.00	0.35	0.00	45.0
11	T1	All MCs	608	15.8	608	15.8	0.318	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	48.4
Approach			668	14.5	668	14.5	0.318	0.4	NA	0.0	0.0	0.00	0.05	0.00	46.8
West: Quay Street															
5	T1	All MCs	226	46.0	226	46.0	0.118	0.0	LOS A	0.0	0.2	0.01	0.01	0.01	48.1
6	R2	All MCs	1	0.0	1	0.0	0.033	4.9	LOS A	0.0	0.2	0.03	0.04	0.03	47.1
Approach			227	45.8	227	45.8	0.118	0.0	NA	0.0	0.2	0.01	0.01	0.01	48.0
All Vehicles			954	21.3	954	21.3	0.318	0.7	NA	0.3	2.2	0.01	0.07	0.01	45.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [M - Social East - AM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street AM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: M Social															
1	L2	All MCs	1	0.0	1	0.0	0.004	5.6	LOS A	0.0	0.1	0.58	0.61	0.58	21.4
3	R2	All MCs	1	0.0	1	0.0	0.004	13.2	LOS B	0.0	0.1	0.58	0.61	0.58	19.3
Approach			2	0.0	2	0.0	0.004	9.4	LOS A	0.0	0.1	0.58	0.61	0.58	20.5
East: Quay Street															
4	L2	All MCs	4	0.0	4	0.0	0.184	2.1	LOS A	0.0	0.0	0.00	0.01	0.00	38.4
5	T1	All MCs	650	14.9	650	14.9	0.184	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
Approach			654	14.8	654	14.8	0.184	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.2
West: Quay Street															
11	T1	All MCs	227	45.8	227	45.8	0.119	0.1	LOS A	0.1	0.8	0.03	0.04	0.03	54.5
12	R2	All MCs	6	0.0	6	0.0	0.038	6.3	LOS A	0.1	0.8	0.16	0.21	0.16	35.8
Approach			233	44.6	233	44.6	0.119	0.3	NA	0.1	0.8	0.03	0.04	0.03	52.8
All Vehicles			889	22.6	889	22.6	0.184	0.1	NA	0.1	0.8	0.01	0.01	0.01	57.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [M - Social West - AM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street AM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: M Social															
1	L2	All MCs	7	0.0	7	0.0	0.029	4.5	LOS A	0.5	3.4	0.52	0.64	0.52	16.8
3	R2	All MCs	4	0.0	4	0.0	0.029	10.9	LOS B	0.5	3.4	0.52	0.64	0.52	20.0
Approach			11	0.0	11	0.0	0.029	6.8	LOS A	0.5	3.4	0.52	0.64	0.52	18.2
East: Quay Street															
5	T1	All MCs	650	14.9	650	14.9	0.183	0.0	LOS A	22.4	177.2	0.00	0.00	0.00	59.9
Approach			650	14.9	650	14.9	0.183	0.0	NA	22.4	177.2	0.00	0.00	0.00	59.9
West: Quay Street															
11	T1	All MCs	228	45.6	228	45.6	0.119	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			228	45.6	228	45.6	0.119	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles			889	22.6	889	22.6	0.183	0.1	NA	22.4	177.2	0.01	0.01	0.01	58.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Quay St / Lower Albert St - AM (Site Folder: Future Base Model)]

Network: N101 [Quay Street AM (Network Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 85 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Lower Albert St															
1	L2	All MCs	59	57.6	59	57.6	* 0.254	39.0	LOS D	2.2	23.1	0.90	0.75	0.90	10.7
Approach			59	57.6	59	57.6	0.254	39.0	LOS D	2.2	23.1	0.90	0.75	0.90	10.7
East: Quay St															
4	L2	All MCs	20	25.0	20	25.0	0.980	81.8	LOS F	43.6	333.9	1.00	1.55	1.77	12.2
5	T1	All MCs	609	10.3	609	10.3	* 0.980	77.0	LOS E	43.6	333.9	1.00	1.55	1.77	8.9
Approach			629	10.8	629	10.8	0.980	77.2	LOS E	43.6	333.9	1.00	1.55	1.77	9.1
West: Quay St															
11	T1	All MCs	200	33.0	200	33.0	0.212	8.8	LOS A	3.9	34.8	0.50	0.42	0.50	35.1
12	R2	All MCs	38	100.0	38	100.0	0.199	37.9	LOS D	1.4	18.4	0.89	0.73	0.89	13.0
Approach			238	43.7	238	43.7	0.212	13.4	LOS B	3.9	34.8	0.56	0.47	0.56	29.3
All Vehicles			926	22.2	926	22.2	0.980	58.4	LOS E	43.6	333.9	0.88	1.22	1.40	11.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Lower Albert St											
P1	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
East: Quay St											
P2	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
West: Quay St											
P4	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
All Pedestrians		150	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Quay St / Lower Hobson St - AM (Site Folder: Future Base Model)]

Network: N101 [Quay Street AM (Network Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 101 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h %	[Total HV] veh/h %	[Veh. veh]	[Dist] m									
South: Lower Hobson St															
1	L2	All MCs	21 23.8	21 23.8	0.817	51.4	LOS D	15.1	134.2	1.00	0.97	1.19	22.6		
2	T1	All MCs	96 22.9	96 22.9	0.817	46.7	LOS D	15.1	134.2	1.00	0.97	1.19	23.6		
3	R2	All MCs	209 48.3	209 48.3	0.817	49.4	LOS D	15.1	134.2	0.97	0.93	1.13	21.9		
Approach			326 39.3	326 39.3	0.817	48.7	LOS D	15.1	134.2	0.98	0.94	1.15	22.5		
East: Quay St															
4b	L3	All MCs	275 13.5	275 13.5	0.869	45.9	LOS D	5.2	40.8	1.00	0.98	1.20	22.6		
4	L2	All MCs	306 12.4	306 12.4	* 0.869	44.5	LOS D	5.2	40.8	1.00	1.00	1.25	21.7		
5	T1	All MCs	1 0.0	1 0.0	0.869	76.2	LOS E	4.9	40.8	1.00	1.05	1.47	6.1		
6	R2	All MCs	74 28.4	74 28.4	0.869	79.0	LOS E	4.9	40.8	1.00	1.05	1.47	6.7		
Approach			656 14.6	656 14.6	0.869	49.0	LOS D	5.2	40.8	1.00	1.00	1.25	20.6		
North: Princes Wharf															
7	L2	All MCs	18 16.7	18 16.7	0.052	39.4	LOS D	0.7	5.7	0.83	0.68	0.83	8.8		
7a	L1	All MCs	3 0.0	3 0.0	0.749	61.0	LOS E	3.7	28.2	1.00	0.89	1.28	21.5		
8	T1	All MCs	63 12.7	63 12.7	* 0.749	57.7	LOS E	3.7	28.2	1.00	0.89	1.28	21.7		
9	R2	All MCs	1 0.0	1 0.0	0.749	62.3	LOS E	3.7	28.2	1.00	0.89	1.28	9.6		
Approach			85 12.9	85 12.9	0.749	54.0	LOS D	3.7	28.2	0.96	0.84	1.18	20.2		
West: Quay St															
10	L2	All MCs	1 0.0	1 0.0	0.548	61.8	LOS E	2.0	15.6	1.00	0.76	1.08	9.1		
11	T1	All MCs	1 0.0	1 0.0	* 0.548	57.3	LOS E	2.0	15.6	1.00	0.76	1.08	5.0		
12a	R1	All MCs	7 14.3	7 14.3	0.548	60.4	LOS E	2.0	15.6	1.00	0.76	1.08	20.3		
12	R2	All MCs	28 14.3	28 14.3	0.548	61.9	LOS E	2.0	15.6	1.00	0.76	1.08	20.1		
Approach			37 13.5	37 13.5	0.548	61.5	LOS E	2.0	15.6	1.00	0.76	1.08	19.7		
All Vehicles			1104 21.7	1104 21.7	0.869	49.7	LOS D	15.1	134.2	0.99	0.96	1.21	21.1		

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped] ped	[Dist] m					
		ped/h	sec						sec	m	m/sec

South: Lower Hobson St											
P1	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
SouthEast: RoadName											
P5	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
East: Quay St											
P2	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
North: Princes Wharf											
P3	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
West: Quay St											
P4	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
All Pedestrians		250	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Quay Street Service Lane Access - PM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street PM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Service Lane															
7	L2	All MCs	79	1.3	79	1.3	0.368	4.8	LOS A	3.5	24.8	0.36	0.47	0.36	39.2
9	R2	All MCs	41	0.0	41	0.0	0.368	20.6	LOS C	3.5	24.8	0.36	0.47	0.36	39.2
Approach			120	0.8	120	0.8	0.368	10.2	LOS B	3.5	24.8	0.36	0.47	0.36	39.2
East: Quay Street															
10	L2	All MCs	28	3.6	28	3.6	0.042	4.1	LOS A	1.3	13.7	0.00	0.25	0.00	45.8
11	T1	All MCs	482	18.7	482	18.7	0.251	0.0	LOS A	1.3	13.7	0.00	0.02	0.00	48.6
Approach			510	17.8	510	17.8	0.251	0.2	NA	1.3	13.7	0.00	0.03	0.00	47.6
West: Quay Street															
5	T1	All MCs	507	16.4	507	16.4	0.256	0.0	LOS A	1.0	7.7	0.00	0.00	0.00	49.3
6	R2	All MCs	1	0.0	1	0.0	0.033	4.0	LOS A	0.0	0.1	0.03	0.03	0.03	47.2
Approach			508	16.3	508	16.3	0.256	0.0	NA	1.0	7.7	0.00	0.00	0.00	49.1
All Vehicles			1138	15.4	1138	15.4	0.368	1.2	NA	3.5	24.8	0.04	0.06	0.04	42.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [M - Social East - PM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street PM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: M Social															
1	L2	All MCs	6	0.0	6	0.0	0.038	5.5	LOS A	0.1	0.9	0.61	0.69	0.61	17.7
3	R2	All MCs	5	0.0	5	0.0	0.038	16.9	LOS C	0.1	0.9	0.61	0.69	0.61	17.7
Approach			11	0.0	11	0.0	0.038	10.7	LOS B	0.1	0.9	0.61	0.69	0.61	17.7
East: Quay Street															
4	L2	All MCs	4	0.0	4	0.0	0.161	2.1	LOS A	1.6	12.4	0.00	0.01	0.00	38.4
5	T1	All MCs	557	16.3	557	16.3	0.161	0.0	LOS A	1.6	12.4	0.00	0.00	0.00	58.8
Approach			561	16.2	561	16.2	0.161	0.0	NA	1.6	12.4	0.00	0.00	0.00	57.7
West: Quay Street															
11	T1	All MCs	503	16.5	503	16.5	0.461	0.1	LOS A	0.0	0.5	0.01	0.01	0.01	57.8
12	R2	All MCs	4	0.0	4	0.0	0.036	5.7	LOS A	0.0	0.5	0.10	0.14	0.10	37.9
Approach			507	16.4	507	16.4	0.461	0.1	NA	0.0	0.5	0.01	0.01	0.01	57.2
All Vehicles			1079	16.1	1079	16.1	0.461	0.2	NA	1.6	12.4	0.01	0.01	0.01	54.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [M - Social West - PM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street PM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: M Social															
1	L2	All MCs	5	0.0	5	0.0	0.023	4.2	LOS A	0.3	2.0	0.54	0.62	0.54	15.9
3	R2	All MCs	3	0.0	3	0.0	0.023	12.5	LOS B	0.3	2.0	0.54	0.62	0.54	15.9
Approach			8	0.0	8	0.0	0.023	7.3	LOS A	0.3	2.0	0.54	0.62	0.54	15.9
East: Quay Street															
5	T1	All MCs	563	16.2	563	16.2	0.160	0.0	LOS A	6.1	49.0	0.00	0.00	0.00	59.9
Approach			563	16.2	563	16.2	0.160	0.0	NA	6.1	49.0	0.00	0.00	0.00	59.9
West: Quay Street															
11	T1	All MCs	504	16.5	504	16.5	0.254	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			504	16.5	504	16.5	0.254	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles			1075	16.2	1075	16.2	0.254	0.1	NA	6.1	49.0	0.00	0.00	0.00	58.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Quay St / Lower Albert St - PM (Site Folder: Future Base Model)]

Network: N101 [Quay Street PM (Network Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 85 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Lower Albert St															
1	L2	All MCs	108	38.0	108	38.0	*0.426	39.2	LOS D	4.1	38.4	0.93	0.78	0.93	10.6
Approach			108	38.0	108	38.0	0.426	39.2	LOS D	4.1	38.4	0.93	0.78	0.93	10.6
East: Quay St															
4	L2	All MCs	5	20.0	5	20.0	0.737	35.1	LOS D	15.9	123.1	0.96	0.87	1.01	21.8
5	T1	All MCs	401	12.5	401	12.5	*0.737	30.4	LOS C	15.9	123.1	0.96	0.87	1.01	17.8
Approach			406	12.6	406	12.6	0.737	30.4	LOS C	15.9	123.1	0.96	0.87	1.01	17.8
West: Quay St															
11	T1	All MCs	510	8.8	510	8.8	0.500	12.6	LOS B	11.9	89.8	0.66	0.59	0.66	31.1
12	R2	All MCs	38	100.0	38	100.0	0.186	36.8	LOS D	1.4	18.1	0.88	0.73	0.88	13.2
Approach			548	15.1	548	15.1	0.500	14.3	LOS B	11.9	89.8	0.68	0.60	0.68	29.2
All Vehicles			1062	16.5	1062	16.5	0.737	23.0	LOS C	15.9	123.1	0.81	0.72	0.83	21.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Lower Albert St											
P1	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
East: Quay St											
P2	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
West: Quay St											
P4	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
All Pedestrians		150	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Quay St / Lower Hobson St - PM (Site Folder: Future Base Model)]

Network: N101 [Quay Street PM (Network Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 105 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h %	[Total HV] veh/h %	[Veh. veh	[Dist] m									
South: Lower Hobson St															
1	L2	All MCs	8	25.0	8	25.0	0.884	56.5	LOS E	24.8	190.0	1.00	1.03	1.27	21.2
2	T1	All MCs	50	16.0	50	16.0	* 0.884	51.7	LOS D	24.8	190.0	1.00	1.03	1.27	22.1
3	R2	All MCs	404	18.3	404	18.3	0.884	54.5	LOS D	24.8	190.0	0.98	1.00	1.22	20.4
Approach			462	18.2	462	18.2	0.884	54.2	LOS D	24.8	190.0	0.98	1.00	1.23	20.6
East: Quay St															
4b	L3	All MCs	151	15.2	151	15.2	0.606	30.6	LOS C	5.1	40.8	0.85	0.82	0.85	27.4
4	L2	All MCs	391	16.1	391	16.1	0.606	33.6	LOS C	5.1	40.8	0.90	0.82	0.90	25.1
5	T1	All MCs	1	0.0	1	0.0	* 0.606	90.7	LOS F	5.1	40.8	0.97	0.81	0.97	7.9
6	R2	All MCs	23	17.4	23	17.4	0.606	93.4	LOS F	5.1	40.8	0.97	0.81	0.97	8.5
Approach			566	15.9	566	15.9	0.606	35.4	LOS D	5.1	40.8	0.89	0.82	0.89	25.1
North: Princes Wharf															
7	L2	All MCs	99	9.1	99	9.1	0.298	44.6	LOS D	4.4	33.5	0.90	0.77	0.90	7.9
7a	L1	All MCs	3	0.0	3	0.0	0.682	61.0	LOS E	3.9	30.1	1.00	0.84	1.16	21.5
8	T1	All MCs	66	13.6	66	13.6	* 0.682	57.7	LOS E	3.9	30.1	1.00	0.84	1.16	21.7
9	R2	All MCs	1	0.0	1	0.0	0.682	62.2	LOS E	3.9	30.1	1.00	0.84	1.16	9.6
Approach			169	10.7	169	10.7	0.682	50.1	LOS D	4.4	33.5	0.94	0.80	1.01	15.8
West: Quay St															
10	L2	All MCs	1	0.0	1	0.0	0.438	65.4	LOS E	1.3	9.4	1.00	0.71	1.01	8.7
11	T1	All MCs	1	0.0	1	0.0	* 0.438	60.9	LOS E	1.3	9.4	1.00	0.71	1.01	4.8
12a	R1	All MCs	4	0.0	4	0.0	0.438	64.0	LOS E	1.3	9.4	1.00	0.71	1.01	19.7
12	R2	All MCs	16	12.5	16	12.5	0.438	65.5	LOS E	1.3	9.4	1.00	0.71	1.01	19.5
Approach			22	9.1	22	9.1	0.438	65.0	LOS E	1.3	9.4	1.00	0.71	1.01	18.7
All Vehicles			1219	15.9	1219	15.9	0.884	45.1	LOS D	24.8	190.0	0.93	0.88	1.03	21.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped] ped	[Dist] m					
		ped/h	sec						sec	m	m/sec

South: Lower Hobson St											
P1	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
SouthEast: RoadName											
P5	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
East: Quay St											
P2	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
North: Princes Wharf											
P3	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
West: Quay St											
P4	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
All Pedestrians		250	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Custom Street Access - AM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street AM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
North: Access															
7	L2	All MCs	20	0.0	20	0.0	0.025	5.5	LOS A	0.1	0.4	0.36	0.55	0.36	43.0
Approach			20	0.0	20	0.0	0.025	5.5	LOS A	0.1	0.4	0.36	0.55	0.36	43.0
West: Custom St															
10	L2	All MCs	88	3.4	88	3.4	0.249	2.8	LOS A	0.0	0.0	0.00	0.14	0.00	46.5
11	T1	All MCs	528	28.6	528	28.6	0.249	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	43.4
Approach			616	25.0	616	25.0	0.249	0.4	NA	0.0	0.0	0.00	0.07	0.00	45.6
All Vehicles			636	24.2	636	24.2	0.249	0.6	NA	0.1	0.4	0.01	0.09	0.01	45.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Customs / Albert / Lower Albert - AM (Site Folder: Future Base Model)]

Network: N101 [Customs Street AM (Network Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 85 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Albert															
1	L2	All MCs	41 92.7		41 92.7		0.195	38.1	LOS D	1.5	18.9	0.88	0.73	0.88	25.5
3	R2	All MCs	73 20.5		73 20.5		* 0.638	50.7	LOS D	3.3	26.9	1.00	0.83	1.14	29.2
Approach			114 46.5		114 46.5		0.638	46.2	LOS D	3.3	26.9	0.96	0.80	1.04	28.2
East: Customs															
4	L2	All MCs	24 29.2		24 29.2		0.098	21.9	LOS C	1.3	13.8	0.71	0.63	0.71	37.3
5	T1	All MCs	765 16.1		765 16.1		* 0.679	28.4	LOS C	13.8	108.1	0.93	0.81	0.94	29.7
Approach			789 16.5		789 16.5		0.679	28.2	LOS C	13.8	108.1	0.92	0.80	0.93	30.0
North: Lower Albert															
7	L2	All MCs	1 0.0		1 0.0		0.235	48.9	LOS D	0.9	11.0	0.98	0.70	0.98	25.1
8	T1	All MCs	39 97.4		39 97.4		* 0.235	44.3	LOS D	0.9	11.0	0.98	0.70	0.98	25.7
Approach			40 95.0		40 95.0		0.235	44.4	LOS D	0.9	11.0	0.98	0.70	0.98	25.7
West: Customs															
10	L2	All MCs	163 37.4		163 37.4		0.555	31.4	LOS C	9.3	82.9	0.89	0.79	0.89	15.8
11	T1	All MCs	386 23.6		386 23.6		0.555	27.1	LOS C	10.1	85.3	0.89	0.76	0.89	30.0
Approach			549 27.7		549 27.7		0.555	28.4	LOS C	10.1	85.3	0.89	0.77	0.89	26.8
All Vehicles			1492 25.0		1492 25.0		0.679	30.1	LOS C	13.8	108.1	0.91	0.79	0.92	28.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Albert											
P1	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
East: Customs											
P2	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
North: Lower Albert											
P3	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05

West: Customs											
P4 Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05	
All Pedestrians	200	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Sturdee St/Slip Lane Lower Hobson St/Custom St W - AM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street AM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Sturdee St															
1a	L1	All MCs	157	24.2	157	24.2	0.142	2.4	LOS A	0.0	0.0	0.00	0.44	0.00	45.5
3a	R1	All MCs	594	25.4	594	25.4	0.160	2.5	LOS A	0.0	0.0	0.00	0.47	0.00	29.5
Approach			751	25.2	751	25.2	0.160	2.5	NA	0.0	0.0	0.00	0.46	0.00	39.9
NorthWest: Downtown Car park															
27	L2	All MCs	22	13.6	22	13.6	0.010	6.0	LOS A	0.0	0.3	0.29	0.54	0.29	42.9
Approach			22	13.6	22	13.6	0.010	6.0	LOS A	0.0	0.3	0.29	0.54	0.29	42.9
West: Slip Lane Lower Hobson St															
10b	L3	All MCs	93	17.2	93	17.2	0.073	6.2	LOS A	0.3	2.4	0.28	0.55	0.28	44.7
10a	L1	All MCs	1	0.0	1	0.0	0.001	6.6	LOS A	0.0	0.0	0.57	0.54	0.57	42.4
Approach			94	17.0	94	17.0	0.073	6.2	LOS A	0.3	2.4	0.29	0.55	0.29	44.6
All Vehicles			867	24.0	867	24.0	0.160	3.0	NA	0.3	2.4	0.04	0.47	0.04	42.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Custom Street Access - PM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street PM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
North: Access															
7	L2	All MCs	21	0.0	21	0.0	0.029	5.4	LOS A	0.1	0.4	0.33	0.54	0.33	43.1
Approach			21	0.0	21	0.0	0.029	5.4	LOS A	0.1	0.4	0.33	0.54	0.33	43.1
West: Custom St															
10	L2	All MCs	55	1.8	55	1.8	0.240	2.8	LOS A	0.0	0.0	0.00	0.11	0.00	46.7
11	T1	All MCs	441	34.7	441	34.7	0.240	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	44.1
Approach			496	31.0	496	31.0	0.240	0.3	NA	0.0	0.0	0.00	0.06	0.00	45.7
All Vehicles			517	29.8	517	29.8	0.240	0.5	NA	0.1	0.4	0.01	0.08	0.01	45.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Customs / Albert / Lower Albert - PM (Site Folder: Future Base Model)]

Network: N101 [Customs Street PM (Network Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Albert															
1	L2	All MCs	45	86.7	45	86.7	0.135	33.9	LOS C	1.7	20.1	0.77	0.72	0.77	26.9
3	R2	All MCs	217	9.7	217	9.7	*0.694	48.3	LOS D	10.4	79.1	0.99	0.86	1.05	29.8
Approach			262	22.9	262	22.9	0.694	45.8	LOS D	10.4	79.1	0.95	0.83	1.00	29.4
East: Customs															
4	L2	All MCs	37	18.9	37	18.9	0.142	25.9	LOS C	2.1	21.2	0.78	0.68	0.78	34.1
5	T1	All MCs	616	19.5	616	19.5	*0.704	39.2	LOS D	13.8	110.2	0.97	0.85	1.00	25.9
Approach			653	19.4	653	19.4	0.704	38.4	LOS D	13.8	110.2	0.96	0.84	0.99	26.5
North: Lower Albert															
7	L2	All MCs	1	0.0	1	0.0	0.305	58.1	LOS E	1.1	14.5	0.99	0.71	0.99	22.9
8	T1	All MCs	45	86.7	45	86.7	*0.305	53.3	LOS D	1.2	14.5	0.99	0.71	0.99	23.4
Approach			46	84.8	46	84.8	0.305	53.4	LOS D	1.2	14.5	0.99	0.71	0.99	23.4
West: Customs															
10	L2	All MCs	47	72.3	47	72.3	0.607	41.6	LOS D	9.9	92.1	0.94	0.80	0.94	13.4
11	T1	All MCs	416	28.6	416	28.6	0.607	37.2	LOS D	10.6	92.6	0.94	0.80	0.94	26.3
Approach			463	33.0	463	33.0	0.607	37.7	LOS D	10.6	92.6	0.94	0.80	0.94	25.4
All Vehicles			1424	26.6	1424	26.6	0.704	40.0	LOS D	13.8	110.2	0.95	0.82	0.98	26.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Albert											
P1	Full	50	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
East: Customs											
P2	Full	50	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
North: Lower Albert											
P3	Full	50	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

West: Customs											
P4 Full	50	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01	
All Pedestrians	200	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Sturdee St/Slip Lane Lower Hobson St/Custom St W - PM (Site Folder: Future Base Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street PM (Network Folder: Future Base Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Sturdee St															
1a	L1	All MCs	112	20.5	112	20.5	0.113	2.4	LOS A	0.0	0.0	0.00	0.44	0.00	45.5
3a	R1	All MCs	406	35.7	406	35.7	0.113	2.5	LOS A	0.0	0.0	0.00	0.47	0.00	29.5
Approach			518	32.4	518	32.4	0.113	2.5	NA	0.0	0.0	0.00	0.46	0.00	40.1
NorthWest: Downtown Car park															
27	L2	All MCs	90	11.1	90	11.1	0.038	5.6	LOS A	0.2	1.2	0.29	0.55	0.29	43.3
Approach			90	11.1	90	11.1	0.038	5.6	LOS A	0.2	1.2	0.29	0.55	0.29	43.3
West: Slip Lane Lower Hobson St															
10b	L3	All MCs	52	17.3	52	17.3	0.039	6.0	LOS A	0.2	1.2	0.22	0.53	0.22	44.8
10a	L1	All MCs	1	0.0	1	0.0	0.001	5.4	LOS A	0.0	0.0	0.49	0.48	0.49	43.5
Approach			53	17.0	53	17.0	0.039	6.0	LOS A	0.2	1.2	0.23	0.53	0.23	44.8
All Vehicles			661	28.3	661	28.3	0.113	3.2	NA	0.2	1.2	0.06	0.48	0.06	42.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Quay Street Service Lane Access - AM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street AM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Service Lane															
7	L2	All MCs	93	2.2	93	2.2	0.233	4.8	LOS A	10.0	71.3	0.21	0.49	0.21	42.3
9	R2	All MCs	22	4.5	22	4.5	0.233	15.0	LOS B	10.0	71.3	0.21	0.49	0.21	42.3
Approach			115	2.6	115	2.6	0.233	6.7	LOS A	10.0	71.3	0.21	0.49	0.21	42.3
East: Quay Street															
10	L2	All MCs	109	2.8	109	2.8	0.086	4.1	LOS A	3.3	28.1	0.00	0.41	0.00	44.5
11	T1	All MCs	539	15.0	539	15.0	0.277	0.0	LOS A	3.3	28.1	0.00	0.02	0.00	48.0
Approach			648	13.0	648	13.0	0.277	0.7	NA	3.3	28.1	0.00	0.09	0.00	45.7
West: Quay Street															
5	T1	All MCs	228	45.6	228	45.6	0.119	0.0	LOS A	0.0	0.3	0.01	0.01	0.01	46.8
6	R2	All MCs	2	0.0	2	0.0	0.034	4.6	LOS A	0.0	0.3	0.06	0.07	0.06	46.9
Approach			230	45.2	230	45.2	0.119	0.1	NA	0.0	0.3	0.01	0.01	0.01	46.8
All Vehicles			993	19.2	993	19.2	0.277	1.3	NA	10.0	71.3	0.03	0.12	0.03	44.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [M - Social East - AM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street AM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: M Social															
1	L2	All MCs	1	0.0	1	0.0	0.006	5.6	LOS A	0.0	0.3	0.57	0.62	0.57	19.7
3	R2	All MCs	1	0.0	1	0.0	0.006	12.8	LOS B	0.0	0.3	0.57	0.62	0.57	19.7
Approach			2	0.0	2	0.0	0.006	9.2	LOS A	0.0	0.3	0.57	0.62	0.57	19.7
East: Quay Street															
4	L2	All MCs	4	0.0	4	0.0	0.176	2.1	LOS A	1.6	12.4	0.00	0.01	0.00	38.4
5	T1	All MCs	628	13.4	628	13.4	0.176	0.0	LOS A	1.6	12.4	0.00	0.00	0.00	58.9
Approach			632	13.3	632	13.3	0.176	0.0	NA	1.6	12.4	0.00	0.00	0.00	58.0
West: Quay Street															
11	T1	All MCs	230	45.2	230	45.2	0.120	0.1	LOS A	0.1	0.8	0.03	0.03	0.03	54.8
12	R2	All MCs	6	0.0	6	0.0	0.038	6.1	LOS A	0.1	0.8	0.16	0.20	0.16	36.0
Approach			236	44.1	236	44.1	0.120	0.3	NA	0.1	0.8	0.03	0.04	0.03	53.1
All Vehicles			870	21.6	870	21.6	0.176	0.1	NA	1.6	12.4	0.01	0.01	0.01	54.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [M - Social West - AM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street AM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: M Social															
1	L2	All MCs	7	0.0	7	0.0	0.028	4.4	LOS A	0.5	3.8	0.51	0.63	0.51	17.1
3	R2	All MCs	4	0.0	4	0.0	0.028	10.5	LOS B	0.5	3.8	0.51	0.63	0.51	17.1
Approach			11	0.0	11	0.0	0.028	6.6	LOS A	0.5	3.8	0.51	0.63	0.51	17.1
East: Quay Street															
5	T1	All MCs	628	13.4	628	13.4	0.175	0.0	LOS A	6.3	49.0	0.00	0.00	0.00	59.9
Approach			628	13.4	628	13.4	0.175	0.0	NA	6.3	49.0	0.00	0.00	0.00	59.9
West: Quay Street															
11	T1	All MCs	231	45.0	231	45.0	0.121	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			231	45.0	231	45.0	0.121	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles			870	21.6	870	21.6	0.175	0.1	NA	6.3	49.0	0.01	0.01	0.01	57.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Quay St / Lower Albert St - AM (Site Folder: Future Development Model)]

Network: N101 [Quay Street AM (Network Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 85 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Lower Albert St															
1	L2	All MCs	59	57.6	59	57.6	*0.330	40.1	LOS D	2.3	23.8	0.91	0.76	0.91	10.5
Approach			59	57.6	59	57.6	0.330	40.1	LOS D	2.3	23.8	0.91	0.76	0.91	10.5
East: Quay St															
4	L2	All MCs	20	25.0	20	25.0	0.939	58.5	LOS E	34.8	262.2	1.00	1.30	1.48	15.6
5	T1	All MCs	589	8.5	589	8.5	*0.939	53.7	LOS D	34.8	262.2	1.00	1.30	1.48	11.9
Approach			609	9.0	609	9.0	0.939	53.8	LOS D	34.8	262.2	1.00	1.30	1.48	12.0
West: Quay St															
11	T1	All MCs	212	31.6	212	31.6	0.223	8.9	LOS A	4.1	36.8	0.50	0.43	0.50	35.0
12	R2	All MCs	38	100.0	38	100.0	0.199	37.9	LOS D	1.4	18.4	0.89	0.73	0.89	13.0
Approach			250	42.0	250	42.0	0.223	13.3	LOS B	4.1	36.8	0.56	0.47	0.56	29.5
All Vehicles			918	21.1	918	21.1	0.939	41.9	LOS D	34.8	262.2	0.88	1.04	1.19	14.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Lower Albert St											
P1	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
East: Quay St											
P2	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
West: Quay St											
P4	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
All Pedestrians		150	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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4:55:34 pm

Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Quay St / Lower Hobson St - AM (Site Folder: Future Development Model)]

Network: N101 [Quay Street AM (Network Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 101 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Lower Hobson St															
1	L2	All MCs	21	23.8	21	23.8	0.859	56.2	LOS E	16.1	142.8	1.00	1.04	1.29	21.5
2	T1	All MCs	96	22.9	96	22.9	* 0.859	51.4	LOS D	16.1	142.8	1.00	1.04	1.29	22.5
3	R2	All MCs	211	47.9	211	47.9	0.859	53.5	LOS D	16.1	142.8	0.97	0.98	1.21	20.9
Approach			328	39.0	328	39.0	0.859	53.1	LOS D	16.1	142.8	0.98	1.00	1.24	21.4
East: Quay St															
4b	L3	All MCs	201	10.9	201	10.9	0.767	34.9	LOS C	5.3	40.8	0.94	0.88	0.98	25.9
4	L2	All MCs	359	11.1	359	11.1	0.767	34.6	LOS C	5.3	40.8	0.95	0.89	1.03	24.5
5	T1	All MCs	1	0.0	1	0.0	* 0.767	69.3	LOS E	5.0	40.8	1.00	0.92	1.20	6.9
6	R2	All MCs	74	28.4	74	28.4	0.767	72.1	LOS E	5.0	40.8	1.00	0.92	1.20	7.5
Approach			635	13.1	635	13.1	0.767	39.1	LOS D	5.3	40.8	0.95	0.89	1.03	23.2
North: Princes Wharf															
7	L2	All MCs	19	15.8	19	15.8	0.050	37.6	LOS D	0.7	5.8	0.81	0.68	0.81	9.1
7a	L1	All MCs	3	0.0	3	0.0	0.749	61.0	LOS E	3.7	28.2	1.00	0.89	1.28	21.5
8	T1	All MCs	63	12.7	63	12.7	* 0.749	57.7	LOS E	3.7	28.2	1.00	0.89	1.28	21.7
9	R2	All MCs	1	0.0	1	0.0	0.749	62.3	LOS E	3.7	28.2	1.00	0.89	1.28	9.6
Approach			86	12.8	86	12.8	0.749	53.4	LOS D	3.7	28.2	0.96	0.84	1.18	20.2
West: Quay St															
10	L2	All MCs	1	0.0	1	0.0	0.683	64.9	LOS E	2.0	15.1	1.00	0.82	1.26	8.7
11	T1	All MCs	1	0.0	1	0.0	* 0.683	60.3	LOS E	2.0	15.1	1.00	0.82	1.26	4.8
12a	R1	All MCs	5	0.0	5	0.0	0.683	63.4	LOS E	2.0	15.1	1.00	0.82	1.26	19.8
12	R2	All MCs	28	14.3	28	14.3	0.683	65.0	LOS E	2.0	15.1	1.00	0.82	1.26	19.5
Approach			35	11.4	35	11.4	0.683	64.6	LOS E	2.0	15.1	1.00	0.82	1.26	19.1
All Vehicles			1084	20.8	1084	20.8	0.859	45.3	LOS D	16.1	142.8	0.96	0.92	1.11	22.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec						sec	m	m/sec

South: Lower Hobson St											
P1	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
SouthEast: RoadName											
P5	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
East: Quay St											
P2	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
North: Princes Wharf											
P3	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
West: Quay St											
P4	Full	50	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01
All Pedestrians		250	44.8	LOS E	0.1	0.1	0.94	0.94	198.6	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Quay Street Service Lane Access - PM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street PM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Service Lane															
7	L2	All MCs	143	0.7	143	0.7	0.590	8.7	LOS A	5.2	36.3	0.48	0.51	0.62	35.2
9	R2	All MCs	63	0.0	63	0.0	0.590	31.2	LOS D	5.2	36.3	0.48	0.51	0.62	35.2
Approach			206	0.5	206	0.5	0.590	15.6	LOS C	5.2	36.3	0.48	0.51	0.62	35.2
East: Quay Street															
10	L2	All MCs	48	2.1	48	2.1	0.052	4.1	LOS A	0.9	8.9	0.00	0.32	0.00	45.2
11	T1	All MCs	434	18.9	434	18.9	0.224	0.0	LOS A	0.9	8.9	0.00	0.02	0.00	48.1
Approach			482	17.2	482	17.2	0.224	0.4	NA	0.9	8.9	0.00	0.05	0.00	46.6
West: Quay Street															
5	T1	All MCs	507	18.1	507	18.1	0.259	0.0	LOS A	1.1	8.2	0.00	0.00	0.00	48.8
6	R2	All MCs	2	0.0	2	0.0	0.034	3.8	LOS A	0.0	0.3	0.05	0.06	0.05	47.1
Approach			509	18.1	509	18.1	0.259	0.0	NA	1.1	8.2	0.00	0.00	0.00	48.6
All Vehicles			1197	14.7	1197	14.7	0.590	2.9	NA	5.2	36.3	0.08	0.11	0.11	38.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [M - Social East - PM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street PM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: M Social															
1	L2	All MCs	6	0.0	6	0.0	0.039	5.5	LOS A	0.1	1.0	0.62	0.69	0.62	17.5
3	R2	All MCs	5	0.0	5	0.0	0.039	17.3	LOS C	0.1	1.0	0.62	0.69	0.62	17.5
Approach			11	0.0	11	0.0	0.039	10.9	LOS B	0.1	1.0	0.62	0.69	0.62	17.5
East: Quay Street															
4	L2	All MCs	4	0.0	4	0.0	0.166	2.1	LOS A	1.6	12.4	0.00	0.01	0.00	38.4
5	T1	All MCs	573	14.5	573	14.5	0.166	0.0	LOS A	1.6	12.4	0.00	0.00	0.00	58.8
Approach			577	14.4	577	14.4	0.166	0.0	NA	1.6	12.4	0.00	0.00	0.00	57.8
West: Quay Street															
11	T1	All MCs	504	18.3	504	18.3	0.257	0.0	LOS A	1.2	9.4	0.01	0.01	0.01	58.2
12	R2	All MCs	4	0.0	4	0.0	0.036	5.7	LOS A	0.0	0.5	0.10	0.14	0.10	37.8
Approach			508	18.1	508	18.1	0.257	0.1	NA	1.2	9.4	0.01	0.01	0.01	57.6
All Vehicles			1096	16.0	1096	16.0	0.257	0.2	NA	1.6	12.4	0.01	0.01	0.01	54.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [M - Social West - PM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Quay Street PM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: M Social															
1	L2	All MCs	5	0.0	5	0.0	0.023	4.3	LOS A	0.3	2.0	0.54	0.63	0.54	15.7
3	R2	All MCs	3	0.0	3	0.0	0.023	12.8	LOS B	0.3	2.0	0.54	0.63	0.54	15.7
Approach			8	0.0	8	0.0	0.023	7.4	LOS A	0.3	2.0	0.54	0.63	0.54	15.7
East: Quay Street															
5	T1	All MCs	579	14.3	579	14.3	0.162	0.0	LOS A	6.2	49.0	0.00	0.00	0.00	59.9
Approach			579	14.3	579	14.3	0.162	0.0	NA	6.2	49.0	0.00	0.00	0.00	59.9
West: Quay Street															
11	T1	All MCs	504	18.3	504	18.3	0.346	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			504	18.3	504	18.3	0.346	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.7
All Vehicles			1091	16.0	1091	16.0	0.346	0.1	NA	6.2	49.0	0.00	0.00	0.00	58.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Quay St / Lower Albert St - PM (Site Folder: Future Development Model)]

Network: N101 [Quay Street PM (Network Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 85 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Lower Albert St															
1	L2	All MCs	109	37.6	109	37.6	* 0.428	39.2	LOS D	4.2	38.7	0.93	0.78	0.93	10.6
Approach			109	37.6	109	37.6	0.428	39.2	LOS D	4.2	38.7	0.93	0.78	0.93	10.6
East: Quay St															
4	L2	All MCs	5	20.0	5	20.0	0.679	33.2	LOS C	14.0	107.5	0.93	0.81	0.94	22.5
5	T1	All MCs	372	11.3	372	11.3	* 0.679	28.5	LOS C	14.0	107.5	0.93	0.81	0.94	18.5
Approach			377	11.4	377	11.4	0.679	28.5	LOS C	14.0	107.5	0.93	0.81	0.94	18.6
West: Quay St															
11	T1	All MCs	532	10.2	532	10.2	0.526	12.8	LOS B	11.8	89.8	0.68	0.60	0.68	30.9
12	R2	All MCs	38	100.0	38	100.0	0.186	36.8	LOS D	1.4	18.1	0.88	0.73	0.88	13.2
Approach			570	16.1	570	16.1	0.526	14.4	LOS B	11.8	89.8	0.69	0.61	0.69	29.1
All Vehicles			1056	16.7	1056	16.7	0.679	22.0	LOS C	14.0	107.5	0.80	0.70	0.80	22.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Lower Albert St											
P1	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
East: Quay St											
P2	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
West: Quay St											
P4	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
All Pedestrians		150	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Quay St / Lower Hobson St - PM (Site Folder: Future Development Model)]

Network: N101 [Quay Street PM (Network Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 105 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h %	[Total HV] veh/h %	[Veh. veh	[Dist] m									
South: Lower Hobson St															
1	L2	All MCs	8	25.0	8	25.0	0.897	59.0	LOS E	25.6	198.9	1.00	1.05	1.31	20.6
2	T1	All MCs	50	16.0	50	16.0	* 0.897	54.2	LOS D	25.6	198.9	1.00	1.05	1.31	21.6
3	R2	All MCs	404	20.5	404	20.5	0.897	56.8	LOS E	25.6	198.9	0.98	1.02	1.26	19.9
Approach			462	20.1	462	20.1	0.897	56.6	LOS E	25.6	198.9	0.98	1.02	1.26	20.1
East: Quay St															
4b	L3	All MCs	111	13.5	111	13.5	0.610	30.6	LOS C	5.2	40.8	0.85	0.82	0.85	27.5
4	L2	All MCs	449	14.3	449	14.3	0.610	33.1	LOS C	5.2	40.8	0.89	0.82	0.89	25.4
5	T1	All MCs	1	0.0	1	0.0	* 0.610	89.6	LOS F	5.2	40.8	0.97	0.82	0.97	8.0
6	R2	All MCs	23	17.4	23	17.4	0.610	92.4	LOS F	5.2	40.8	0.97	0.82	0.97	8.6
Approach			584	14.2	584	14.2	0.610	35.1	LOS D	5.2	40.8	0.89	0.82	0.89	25.2
North: Princes Wharf															
7	L2	All MCs	99	9.1	99	9.1	0.298	44.6	LOS D	4.4	33.5	0.90	0.77	0.90	7.9
7a	L1	All MCs	3	0.0	3	0.0	0.682	61.0	LOS E	3.9	30.1	1.00	0.84	1.16	21.5
8	T1	All MCs	66	13.6	66	13.6	* 0.682	57.7	LOS E	3.9	30.1	1.00	0.84	1.16	21.7
9	R2	All MCs	1	0.0	1	0.0	0.682	62.2	LOS E	3.9	30.1	1.00	0.84	1.16	9.6
Approach			169	10.7	169	10.7	0.682	50.1	LOS D	4.4	33.5	0.94	0.80	1.01	15.8
West: Quay St															
10	L2	All MCs	1	0.0	1	0.0	0.420	65.4	LOS E	1.2	9.0	1.00	0.70	1.00	8.7
11	T1	All MCs	1	0.0	1	0.0	* 0.420	60.8	LOS E	1.2	9.0	1.00	0.70	1.00	4.8
12a	R1	All MCs	3	0.0	3	0.0	0.420	63.9	LOS E	1.2	9.0	1.00	0.70	1.00	19.7
12	R2	All MCs	16	12.5	16	12.5	0.420	65.5	LOS E	1.2	9.0	1.00	0.70	1.00	19.5
Approach			21	9.5	21	9.5	0.420	65.0	LOS E	1.2	9.0	1.00	0.70	1.00	18.6
All Vehicles			1236	15.9	1236	15.9	0.897	45.7	LOS D	25.6	198.9	0.93	0.89	1.05	21.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec		ped	m			sec	m	m/sec

South: Lower Hobson St											
P1	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
SouthEast: RoadName											
P5	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
East: Quay St											
P2	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
North: Princes Wharf											
P3	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
West: Quay St											
P4	Full	50	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00
All Pedestrians		250	46.8	LOS E	0.1	0.1	0.94	0.94	200.6	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Custom Street Access - AM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street AM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
North: Access															
7	L2	All MCs	36	2.8	36	2.8	0.045	5.5	LOS A	0.1	0.8	0.35	0.55	0.35	43.1
Approach			36	2.8	36	2.8	0.045	5.5	LOS A	0.1	0.8	0.35	0.55	0.35	43.1
West: Custom St															
10	L2	All MCs	174	3.4	174	3.4	0.276	2.8	LOS A	0.0	0.0	0.00	0.24	0.00	45.9
11	T1	All MCs	524	29.0	524	29.0	0.276	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	41.2
Approach			698	22.6	698	22.6	0.276	0.7	NA	0.0	0.0	0.00	0.13	0.00	45.0
All Vehicles			734	21.7	734	21.7	0.276	0.9	NA	0.1	0.8	0.02	0.15	0.02	44.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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9:33:29 am

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MOVEMENT SUMMARY

Site: 101 [Customs / Albert / Lower Albert - AM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street AM (Network Folder: Future Development Model)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 85 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Albert															
1	L2	All MCs	41 92.7		41 92.7		0.195	38.1	LOS D	1.5	18.9	0.88	0.73	0.88	25.5
3	R2	All MCs	75 20.0		75 20.0		* 0.654	50.9	LOS D	3.4	27.6	1.00	0.84	1.15	29.1
Approach			116 45.7		116 45.7		0.654	46.3	LOS D	3.4	27.6	0.96	0.80	1.06	28.2
East: Customs															
4	L2	All MCs	21 33.3		21 33.3		0.094	21.7	LOS C	1.2	13.2	0.71	0.62	0.71	37.4
5	T1	All MCs	763 16.6		763 16.6		* 0.680	28.4	LOS C	13.8	108.4	0.93	0.81	0.94	29.7
Approach			784 17.1		784 17.1		0.680	28.2	LOS C	13.8	108.4	0.92	0.80	0.93	30.0
North: Lower Albert															
7	L2	All MCs	1 0.0		1 0.0		0.235	48.9	LOS D	0.9	11.0	0.98	0.70	0.98	25.1
8	T1	All MCs	39 97.4		39 97.4		* 0.235	44.3	LOS D	0.9	11.0	0.98	0.70	0.98	25.7
Approach			40 95.0		40 95.0		0.235	44.4	LOS D	0.9	11.0	0.98	0.70	0.98	25.7
West: Customs															
10	L2	All MCs	164 37.2		164 37.2		0.565	31.5	LOS C	9.5	84.7	0.89	0.79	0.89	15.8
11	T1	All MCs	396 23.2		396 23.2		0.565	27.2	LOS C	10.4	87.0	0.89	0.77	0.89	29.9
Approach			560 27.3		560 27.3		0.565	28.4	LOS C	10.4	87.0	0.89	0.78	0.89	26.9
All Vehicles			1500 25.2		1500 25.2		0.680	30.1	LOS C	13.8	108.4	0.92	0.79	0.93	28.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Albert											
P1	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
East: Customs											
P2	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05
North: Lower Albert											
P3	Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05

West: Customs											
P4 Full	50	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05	
All Pedestrians	200	36.8	LOS D	0.1	0.1	0.93	0.93	190.6	200.0	1.05	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Sturdee St/Slip Lane Lower Hobson St/Drop off area - AM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street AM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Sturdee St															
1a	L1	All MCs	8	0.0	8	0.0	0.050	2.3	LOS A	0.0	0.0	0.00	0.46	0.00	45.8
3a	R1	All MCs	683	23.0	683	23.0	0.184	2.5	LOS A	0.0	0.0	0.00	0.47	0.00	29.4
Approach			691	22.7	691	22.7	0.184	2.5	NA	0.0	0.0	0.00	0.47	0.00	30.7
NorthWest: Hotel drop-off															
27	L2	All MCs	14	0.0	14	0.0	0.009	4.8	LOS A	0.0	0.3	0.16	0.49	0.16	43.8
Approach			14	0.0	14	0.0	0.009	4.8	LOS A	0.0	0.3	0.16	0.49	0.16	43.8
West: Slip Lane Lower Hobson St															
10b	L3	All MCs	6	0.0	6	0.0	0.004	5.4	LOS A	0.0	0.1	0.04	0.55	0.04	45.4
10a	L1	All MCs	1	0.0	1	0.0	0.001	6.2	LOS A	0.0	0.0	0.55	0.52	0.55	42.8
Approach			7	0.0	7	0.0	0.004	5.5	LOS A	0.0	0.1	0.11	0.55	0.11	45.2
All Vehicles			712	22.1	712	22.1	0.184	2.6	NA	0.0	0.3	0.00	0.47	0.00	33.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Custom Street Access - PM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street PM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
North: Access															
7	L2	All MCs	42	0.0	42	0.0	0.047	5.2	LOS A	0.1	0.9	0.29	0.53	0.29	43.3
Approach			42	0.0	42	0.0	0.047	5.2	LOS A	0.1	0.9	0.29	0.53	0.29	43.3
West: Custom St															
10	L2	All MCs	107	1.9	107	1.9	0.190	2.8	LOS A	0.0	0.0	0.00	0.22	0.00	46.0
11	T1	All MCs	372	37.6	372	37.6	0.190	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	41.3
Approach			479	29.6	479	29.6	0.190	0.6	NA	0.0	0.0	0.00	0.11	0.00	45.0
All Vehicles			521	27.3	521	27.3	0.190	1.0	NA	0.1	0.9	0.02	0.15	0.02	44.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Customs / Albert / Lower Albert - PM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street PM (Network Folder: Future Development Model)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Albert															
1	L2	All MCs	47	83.0	47	83.0	0.134	33.1	LOS C	1.7	20.3	0.76	0.71	0.76	27.2
3	R2	All MCs	240	9.2	240	9.2	*0.725	48.3	LOS D	11.7	88.0	0.99	0.87	1.08	29.7
Approach			287	21.3	287	21.3	0.725	45.8	LOS D	11.7	88.0	0.96	0.85	1.02	29.5
East: Customs															
4	L2	All MCs	34	20.6	34	20.6	0.143	25.9	LOS C	2.1	20.7	0.79	0.68	0.79	33.9
5	T1	All MCs	655	20.6	655	20.6	*0.789	43.5	LOS D	15.8	127.7	0.99	0.95	1.12	24.5
Approach			689	20.6	689	20.6	0.789	42.6	LOS D	15.8	127.7	0.98	0.93	1.10	25.1
North: Lower Albert															
7	L2	All MCs	1	0.0	1	0.0	0.305	58.1	LOS E	1.1	14.5	0.99	0.71	0.99	22.9
8	T1	All MCs	45	86.7	45	86.7	*0.305	53.3	LOS D	1.2	14.5	0.99	0.71	0.99	23.4
Approach			46	84.8	46	84.8	0.305	53.4	LOS D	1.2	14.5	0.99	0.71	0.99	23.4
West: Customs															
10	L2	All MCs	47	72.3	47	72.3	0.569	42.0	LOS D	8.8	82.6	0.94	0.79	0.94	13.3
11	T1	All MCs	367	28.9	367	28.9	0.569	37.6	LOS D	9.5	83.0	0.94	0.79	0.94	26.2
Approach			414	33.8	414	33.8	0.569	38.1	LOS D	9.5	83.0	0.94	0.79	0.94	25.1
All Vehicles			1436	26.6	1436	26.6	0.789	42.3	LOS D	15.8	127.7	0.97	0.87	1.04	26.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Albert											
P1	Full	50	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
East: Customs											
P2	Full	50	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
North: Lower Albert											
P3	Full	50	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

West: Customs											
P4 Full	50	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01	
All Pedestrians	200	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

MOVEMENT SUMMARY

Site: 101 [Sturdee St/Slip Lane Lower Hobson St/Drop off area - PM (Site Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Customs Street PM (Network Folder: Future Development Model)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Sturdee St															
1a	L1	All MCs	7	0.0	7	0.0	0.050	2.3	LOS A	0.0	0.0	0.00	0.46	0.00	45.8
3a	R1	All MCs	468	30.3	468	30.3	0.125	2.5	LOS A	0.0	0.0	0.00	0.47	0.00	29.5
Approach			475	29.9	475	29.9	0.125	2.5	NA	0.0	0.0	0.00	0.47	0.00	31.0
NorthWest: Hotel drop-off															
27	L2	All MCs	11	0.0	11	0.0	0.007	4.8	LOS A	0.0	0.2	0.16	0.49	0.16	43.8
Approach			11	0.0	11	0.0	0.007	4.8	LOS A	0.0	0.2	0.16	0.49	0.16	43.8
West: Slip Lane Lower Hobson St															
10b	L3	All MCs	4	0.0	4	0.0	0.002	5.4	LOS A	0.0	0.1	0.04	0.55	0.04	45.4
10a	L1	All MCs	1	0.0	1	0.0	0.001	5.1	LOS A	0.0	0.0	0.47	0.47	0.47	43.6
Approach			5	0.0	5	0.0	0.002	5.3	LOS A	0.0	0.1	0.12	0.53	0.12	45.2
All Vehicles			491	28.9	491	28.9	0.125	2.6	NA	0.0	0.2	0.00	0.47	0.00	33.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: P:\PREP\002 Downtown Carpark redevelopment\Modelling\SIDRA\Development FTA\Downtown Carpark model_FTA 251028.sip9

NETWORK SIGNAL PHASE TIMINGS

Network: N101 [Quay Street AM (Network Folder: Future Base Model)]

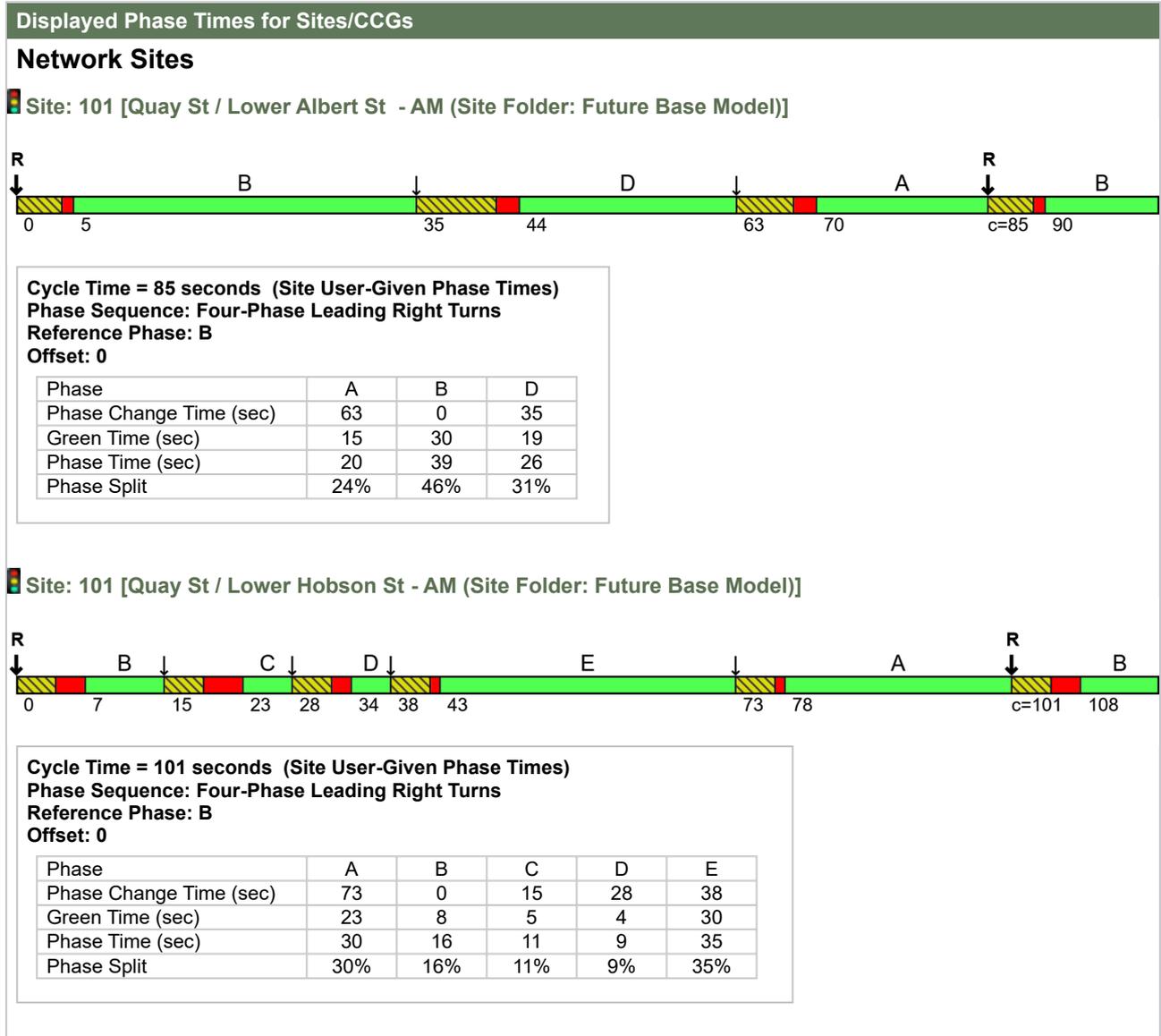
Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)

Offset Definition: Green Start

Reference Site / CCG: 101 [Quay St / Lower Albert St - AM]¹

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.



- Green Interval
- Red Interval
- Intergreen
- Reduced Intergreen
- ↓ Phase Change
- ↓ Reference Phase Change

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

NETWORK SIGNAL PHASE TIMINGS

Network: N101 [Quay Street PM (Network Folder: Future Base Model)]

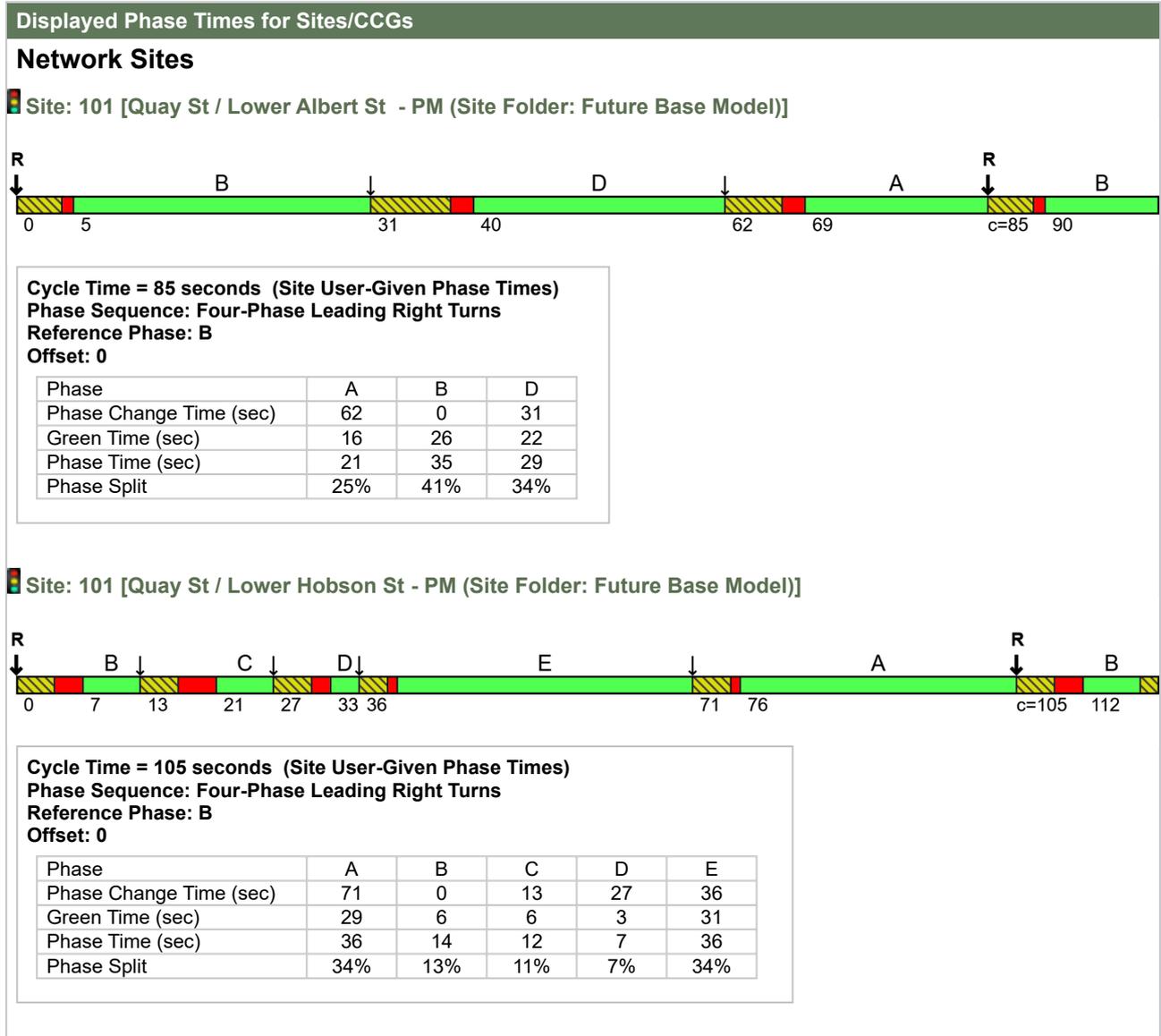
Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)

Offset Definition: Green Start

Reference Site / CCG: 101 [Quay St / Lower Albert St - PM]¹

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.



- Green Interval
- Red Interval
- Intergreen
- Reduced Intergreen
- Phase Change
- Reference Phase Change

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

NETWORK SIGNAL PHASE TIMINGS

Network: N101 [Customs Street AM (Network Folder: Future Base Model)]

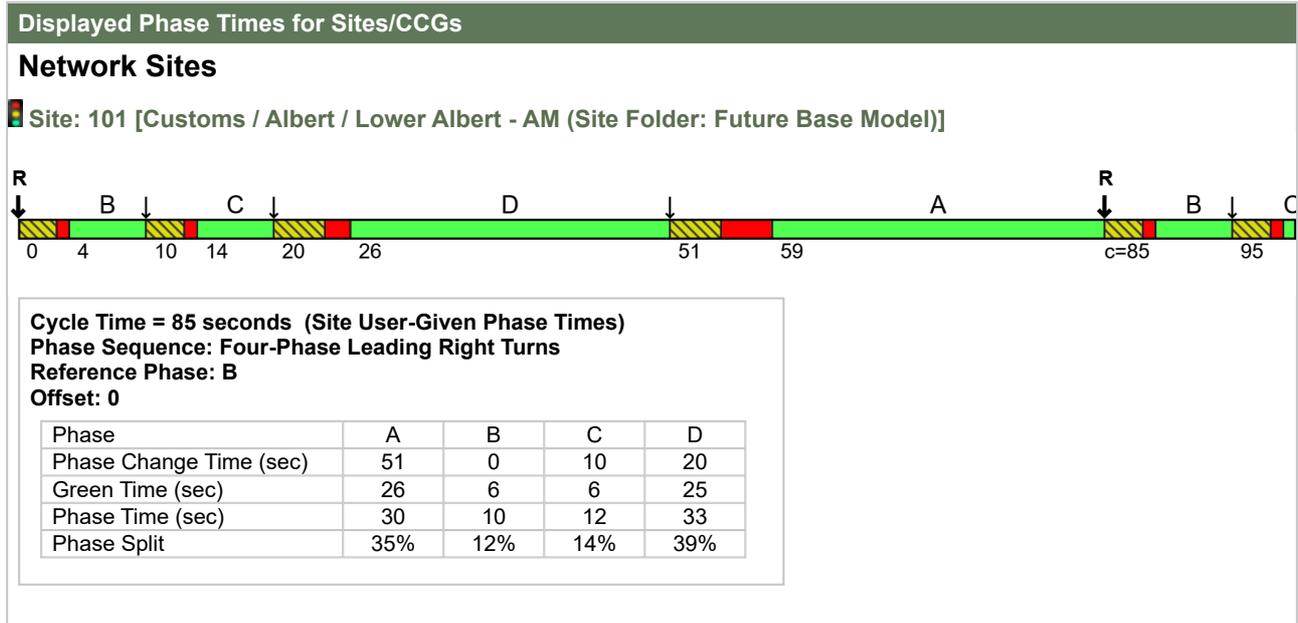
Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)

Offset Definition: Green Start

Reference Site / CCG: 101 [Customs / Albert / Lower Albert - AM]¹

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.



- Green Interval
- Red Interval
- Intergreen
- Reduced Intergreen
- Phase Change
- Reference Phase Change

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

NETWORK SIGNAL PHASE TIMINGS

Network: N101 [Customs Street PM (Network Folder: Future Base Model)]

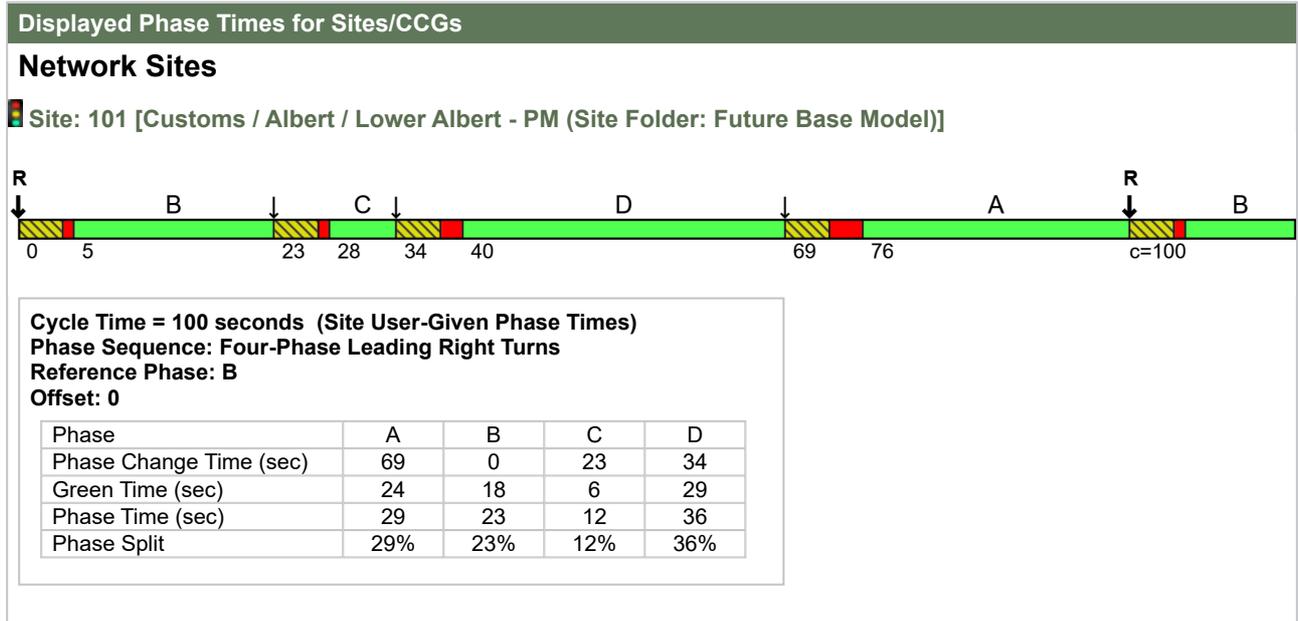
Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
 Network Category: (None)

Offset Definition: Green Start

Reference Site / CCG: 101 [Customs / Albert / Lower Albert - PM]¹

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.



- Green Interval
- Red Interval
- Intergreen
- Reduced Intergreen
- ↓ Phase Change
- ↓ Reference Phase Change

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

NETWORK SIGNAL PHASE TIMINGS

Network: N101 [Quay Street AM (Network Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)

Offset Definition: Green Start

Reference Site / CCG: 101 [Quay St / Lower Albert St - AM]¹

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.



- Green Interval
- Red Interval
- Intergreen
- Reduced Intergreen
- ↓ Phase Change
- ⇓ Reference Phase Change

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

NETWORK SIGNAL PHASE TIMINGS

Network: N101 [Quay Street PM (Network Folder: Future Development Model)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)

Offset Definition: Green Start

Reference Site / CCG: 101 [Quay St / Lower Albert St - PM]¹

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.



- Green Interval
- Red Interval
- Intergreen
- Reduced Intergreen
- Phase Change
- Reference Phase Change

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

NETWORK SIGNAL PHASE TIMINGS

Network: N101 [Customs Street AM (Network Folder: Future Development Model)]

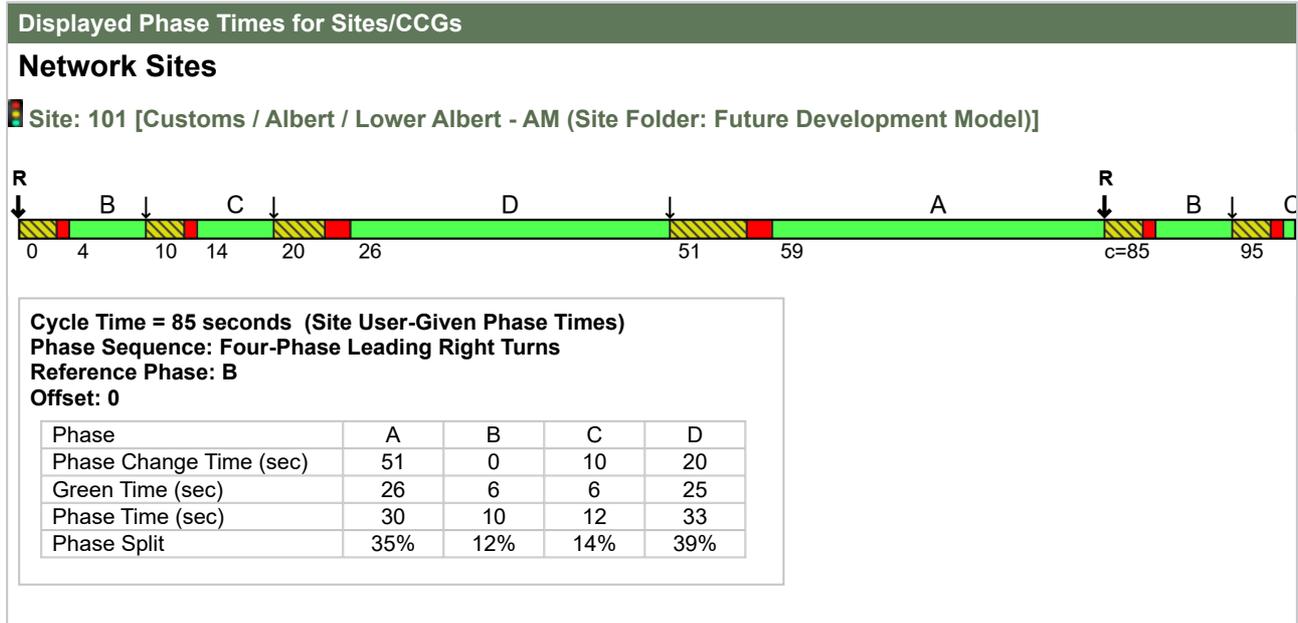
Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
 Network Category: (None)

Offset Definition: Green Start

Reference Site / CCG: 101 [Customs / Albert / Lower Albert - AM]¹

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.



- Green Interval
- Red Interval
- Intergreen
- Reduced Intergreen
- Phase Change
- Reference Phase Change

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

NETWORK SIGNAL PHASE TIMINGS

Network: N101 [Customs Street PM (Network Folder: Future Development Model)]

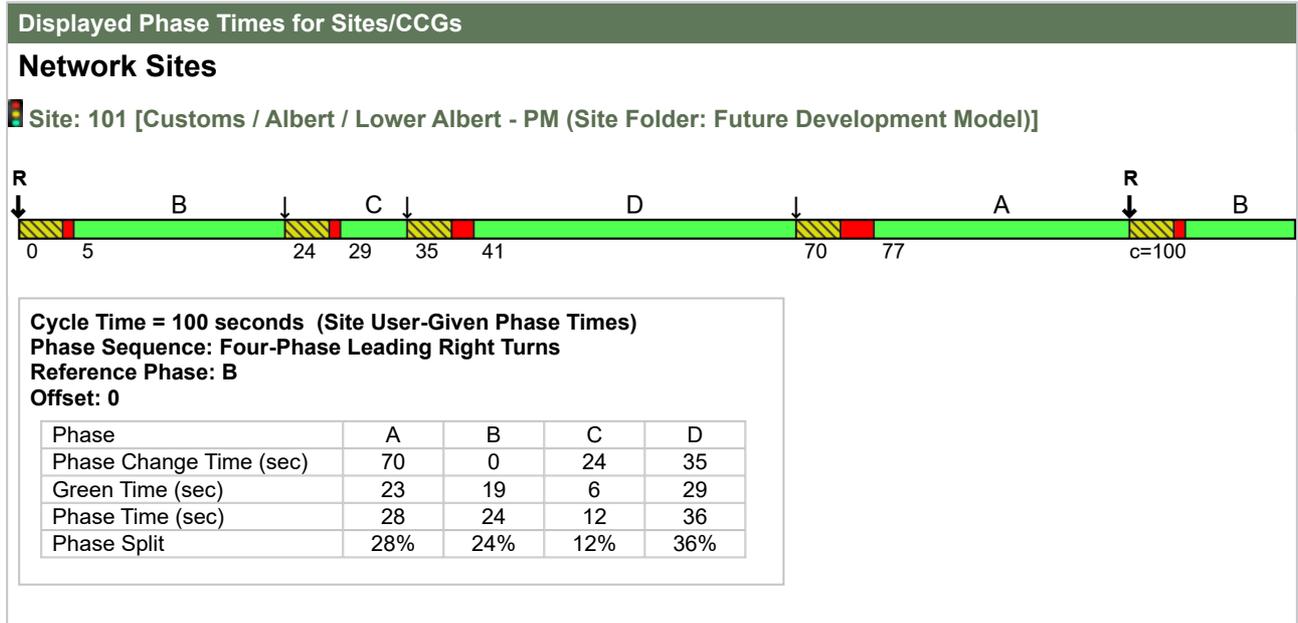
Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)

Offset Definition: Green Start

Reference Site / CCG: 101 [Customs / Albert / Lower Albert - PM]¹

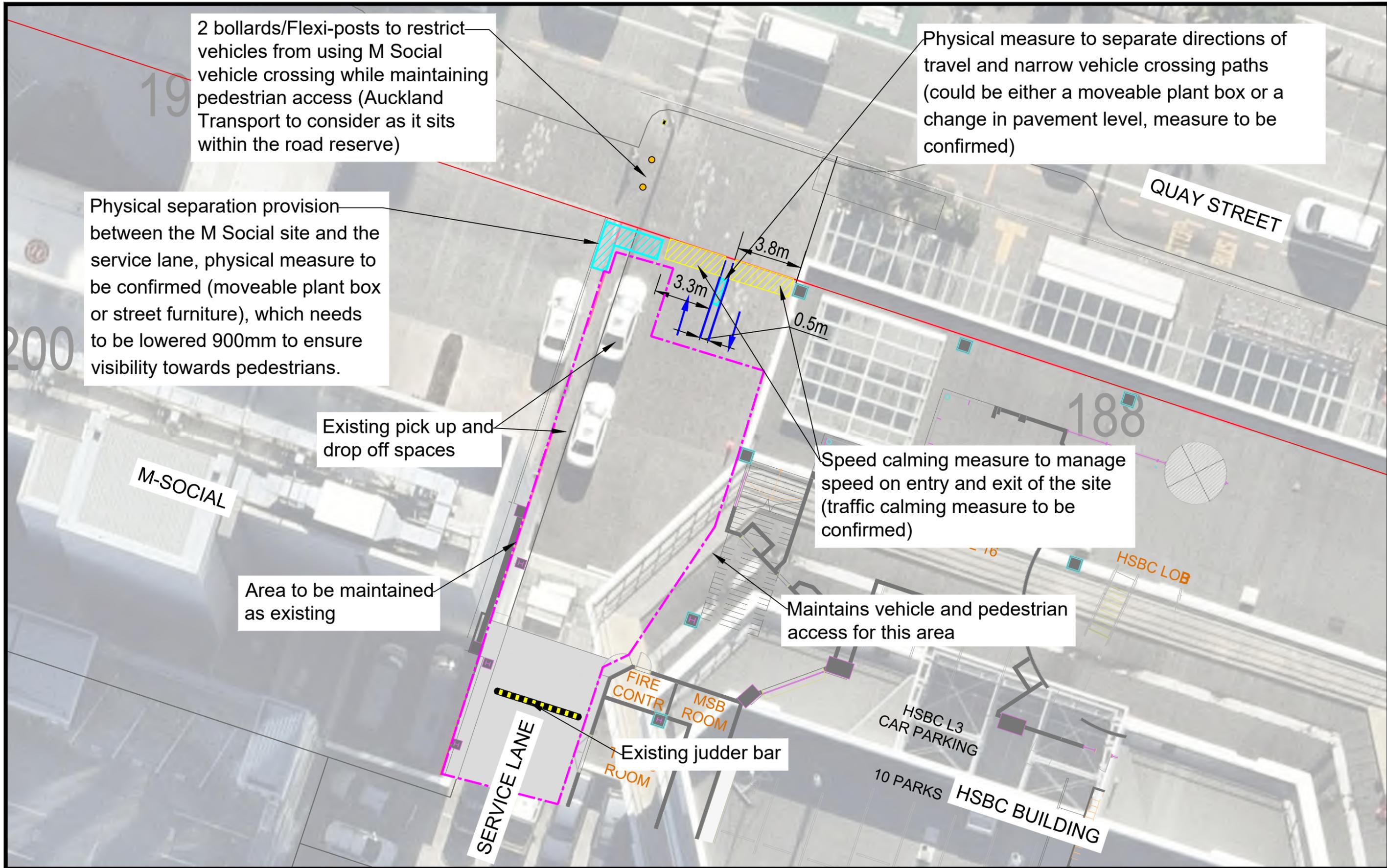
CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.



- Green Interval
- Red Interval
- Intergreen
- Reduced Intergreen
- Phase Change
- Reference Phase Change

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

APPENDIX H **Quay Street service lane access design**



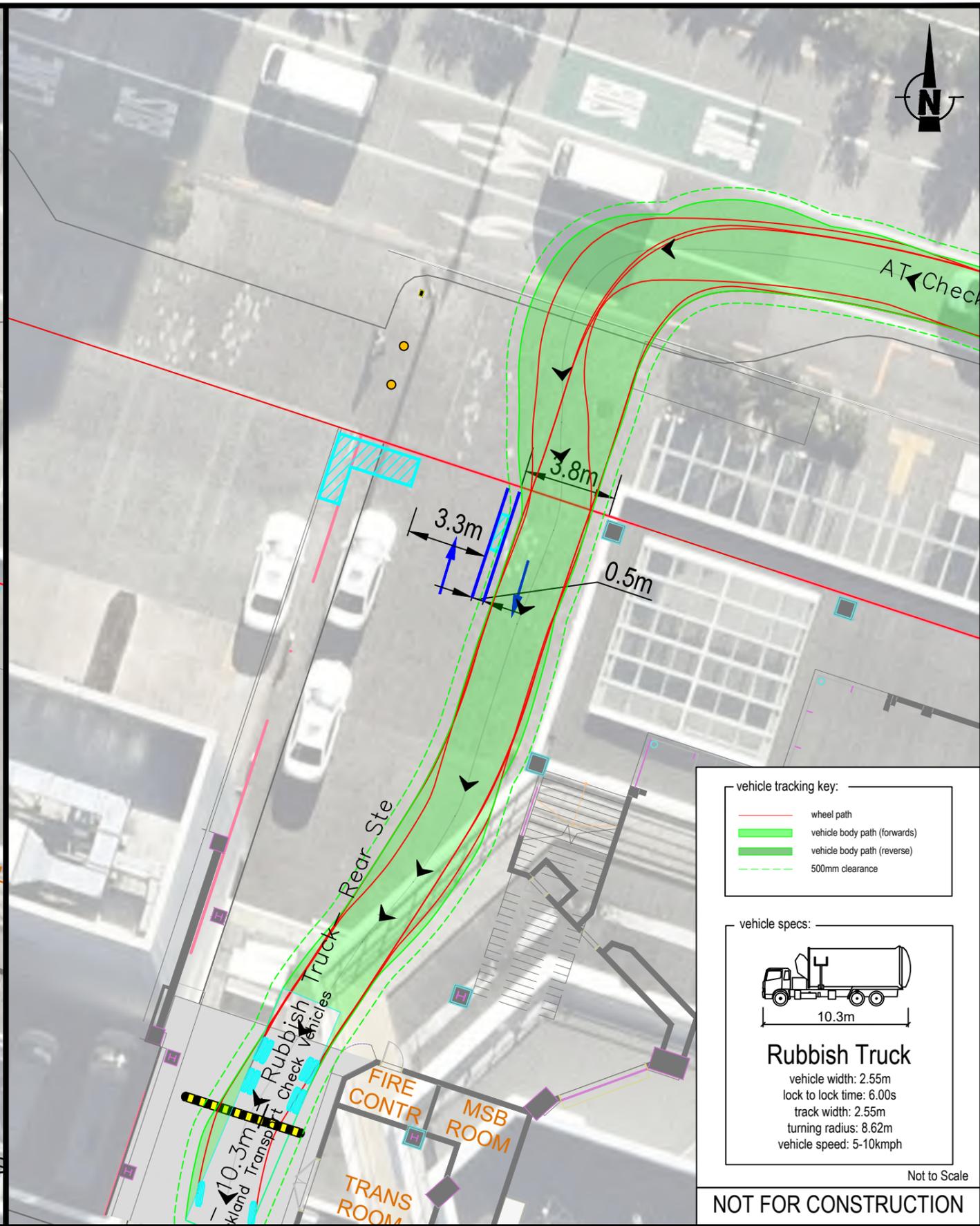
REV	AMENDMENT	DATE OF ISSUE	DESIGN: KC	DRAWN: KC
A	First Issue	30/09/2025	CHECKED: HS	DATE: 04/11/2025
B	Second Issue	03/10/2025	SCALE: 0 8m 1:200 @ A3	
C	Third Issue	04/11/2025		

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CAR PARK FAST TRACK
 LOCATION: QUAY STREET, AUCKLAND CBD
CONCEPT DESIGN

SHEET TITLE: **SERVICE LANE HSBC QUAY STREET ACCESS GENERAL OVERVIEW**
 DRAWING NUMBER: PREP002-QS-DW01

SHEET: 01 of 02
 REV: C

flow
 TRANSPORTATION SPECIALISTS
 Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- - - 500mm clearance

vehicle specs:

Rubbish Truck
 vehicle width: 2.55m
 lock to lock time: 6.00s
 track width: 2.55m
 turning radius: 8.62m
 vehicle speed: 5-10kmph

Not to Scale

NOT FOR CONSTRUCTION

REV	AMENDMENT	DATE OF ISSUE	DESIGN: KC	DRAWN: KC
A	First Issue	30/09/2025	CHECKED: HS	DATE: 04/11/2025
B	Second Issue	03/10/2025		
C	Third Issue	04/11/2025		

SCALE: 0 8m

1:200 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CAR PARK FAST TRACK
 LOCATION: QUAY STREET, AUCKLAND CBD

CONCEPT DESIGN

SHEET TITLE: **SERVICE LANE HSBC QUAY STREET ACCESS**
10.3m RUBBISH TRUCK TRACKING

DRAWING NUMBER: PREP002-QS-DW01

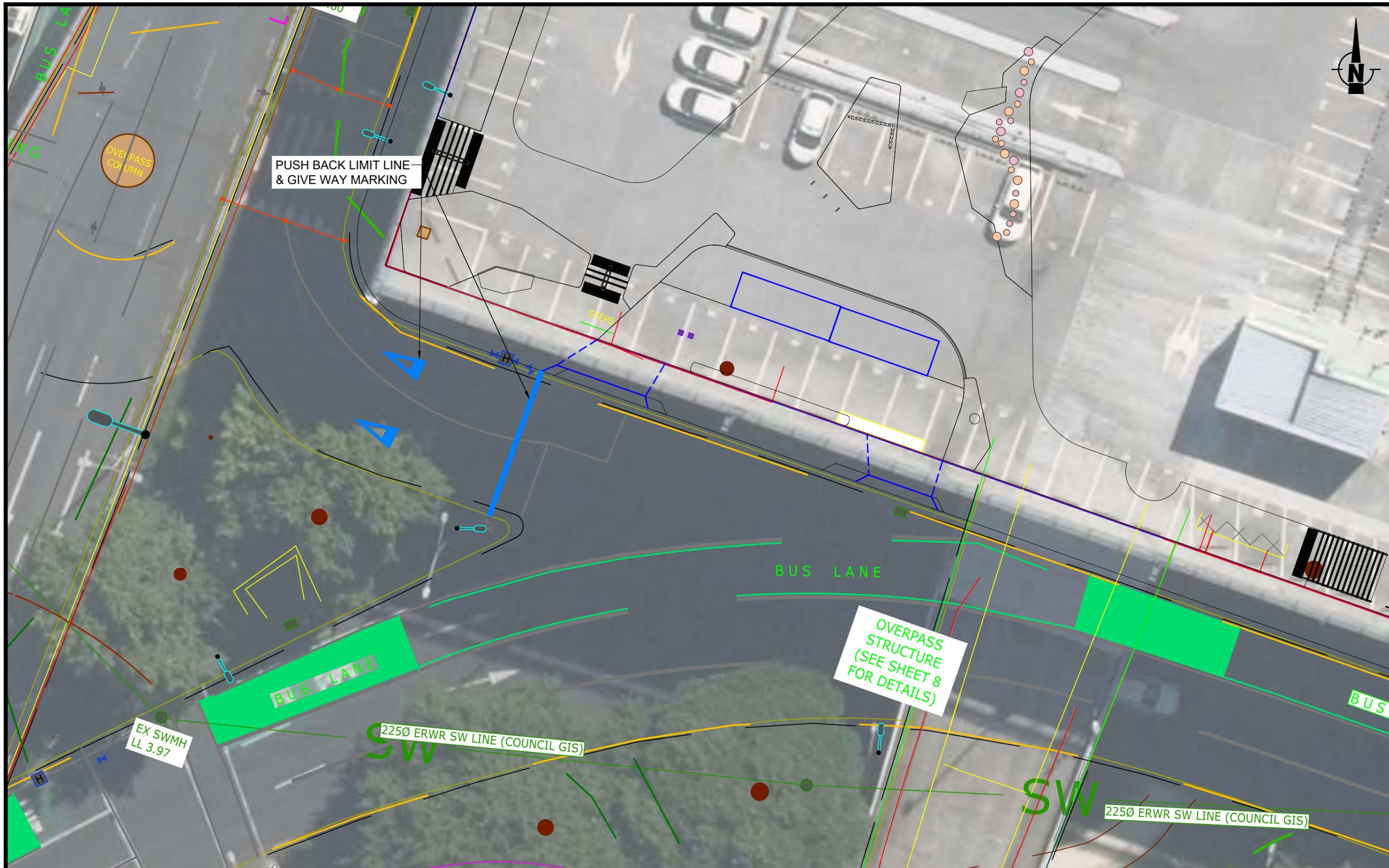
SHEET: **02 of 02**

REV: **C**

flow
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APPENDIX I Hotel drop-off vehicle tracking



REV	AMENDMENT	DATE OF ISSUE
A	First Issue	24/09/25
B	Second Issue	29/10/25
C	Third Issue	06/11/25

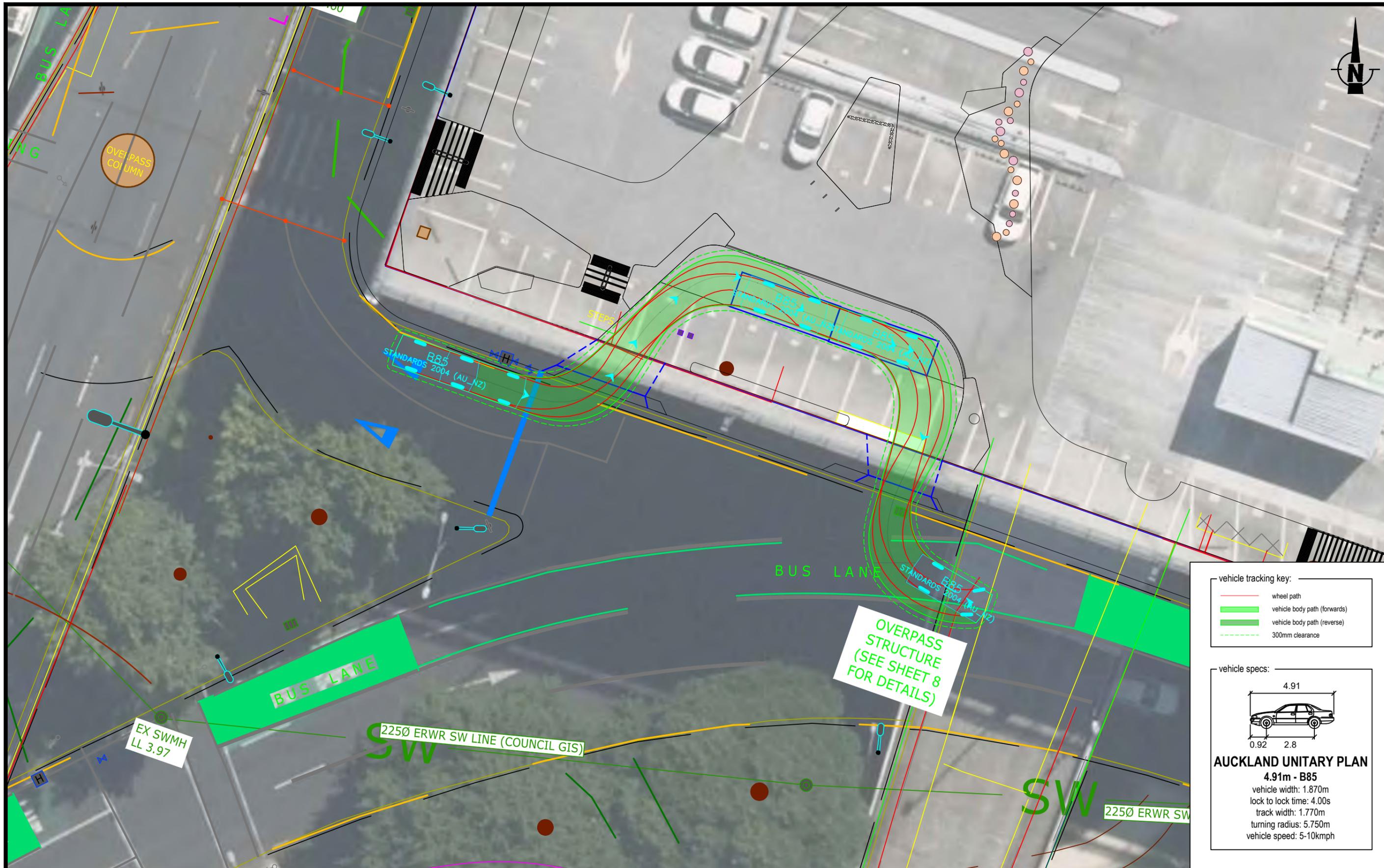
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CHECKED: HS	DATE: 24/09/25
SCALE: 0 20m	
1:500 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: 2 LOWER HOBSON STREET, CBD
FOR RESOURCE CONSENT

SHEET TITLE: ROAD MARKING ADJUSTMENT
 CUSTOM STREET WEST LAYOUT
 DRAWING NUMBER: PREP002-DC-DW01

SHEET: 01 of 07
 REV: C

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vehicle tracking key:

	wheel path
	vehicle body path (forwards)
	vehicle body path (reverse)
	300mm clearance

vehicle specs:

AUCKLAND UNITARY PLAN
4.91m - B85
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE
A	First Issue	24/09/25
B	Second Issue	29/10/25
C	Third Issue	06/11/25

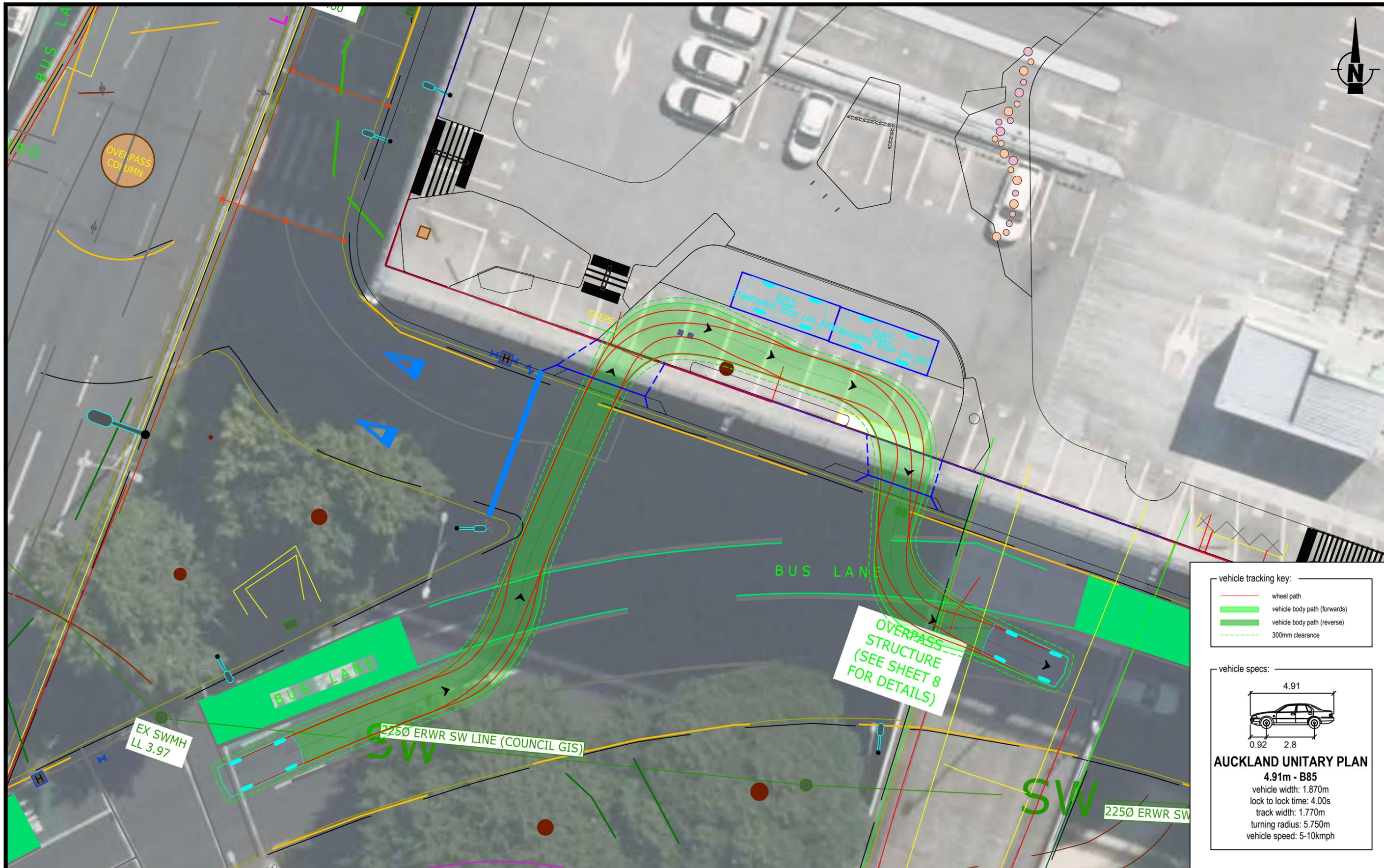
DESIGN: KC	DRAWN: KC
CHECKED: HS	DATE: 24/09/25
SCALE: 0 20m	
1:500 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: 2 LOWER HOBSON STREET, CBD
FOR RESOURCE CONSENT

SHEET TITLE: **PORTE COCHERE VEHICLE TRACKING B85 CAR**
 DRAWING NUMBER: PREP002-DC-DW01

SHEET: **02 of 07**
 REV: **C**

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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- vehicle body path (reverse)
- - - 300mm clearance

vehicle specs:

AUCKLAND UNITARY PLAN
4.91m - B85
 vehicle width: 1.870m
 lock to lock time: 4.00s
 track width: 1.770m
 turning radius: 5.750m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE	DESIGN: KC	DRAWN: KC
A	First Issue	24/09/25	CHECKED: HS	DATE: 24/09/25
B	Second Issue	29/10/25		
C	Third Issue	06/11/25		

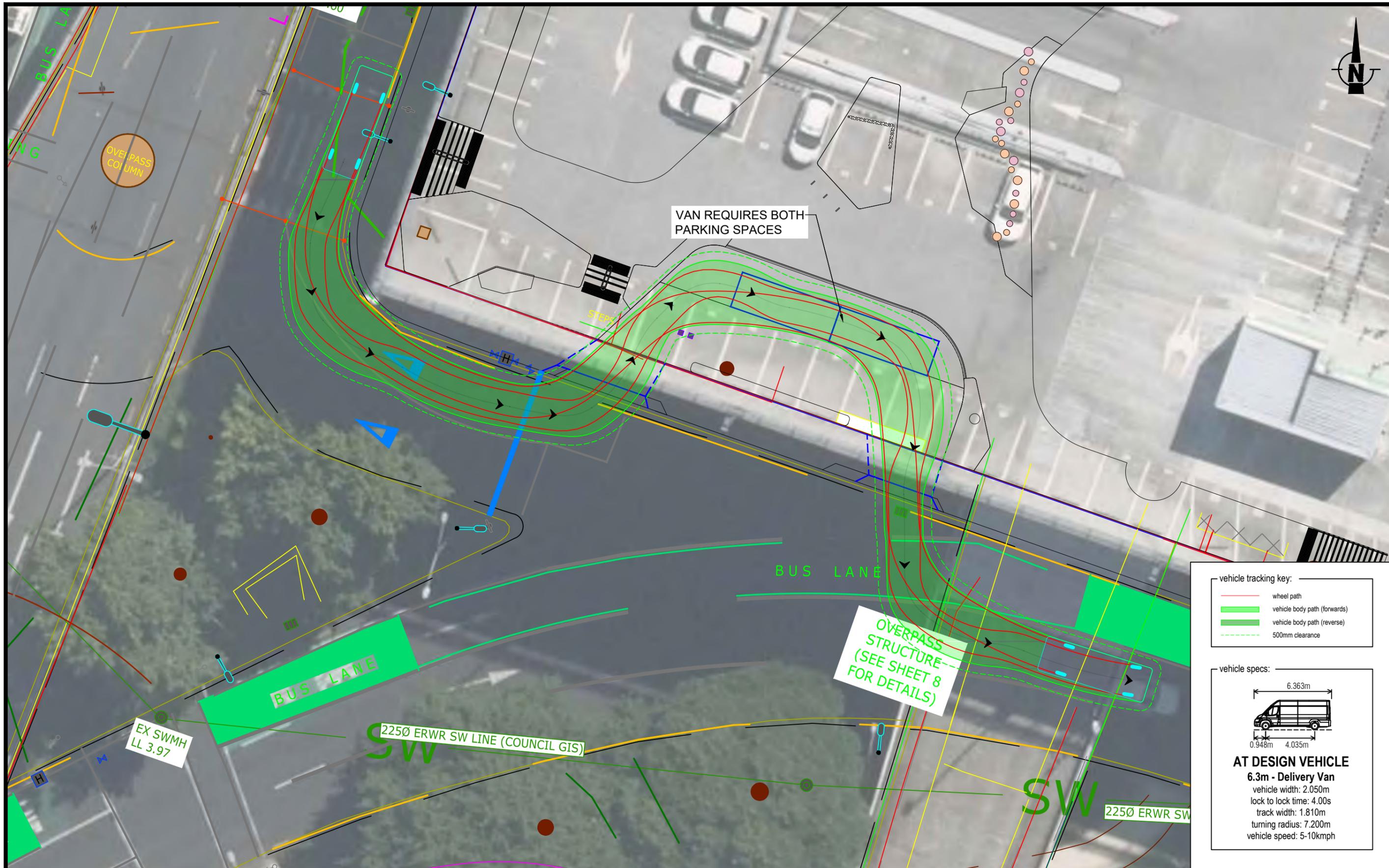
SCALE: 0 20m
 1:500 @ A3

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: 2 LOWER HOBSON STREET, CBD
FOR RESOURCE CONSENT

SHEET TITLE: **PORTE COCHERE VEHICLE TRACKING B85 CAR**
 DRAWING NUMBER: PREP002-DC-DW01

SHEET: **03 of 07**
 REV: **C**

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vehicle tracking key:

- wheel path
- vehicle body path (forwards)
- - - vehicle body path (reverse)
- - - 500mm clearance

vehicle specs:

AT DESIGN VEHICLE
6.3m - Delivery Van
 vehicle width: 2.050m
 lock to lock time: 4.00s
 track width: 1.810m
 turning radius: 7.200m
 vehicle speed: 5-10kmph

REV	AMENDMENT	DATE OF ISSUE
A	First Issue	24/09/25
B	Second Issue	29/10/25
C	Third Issue	06/11/25

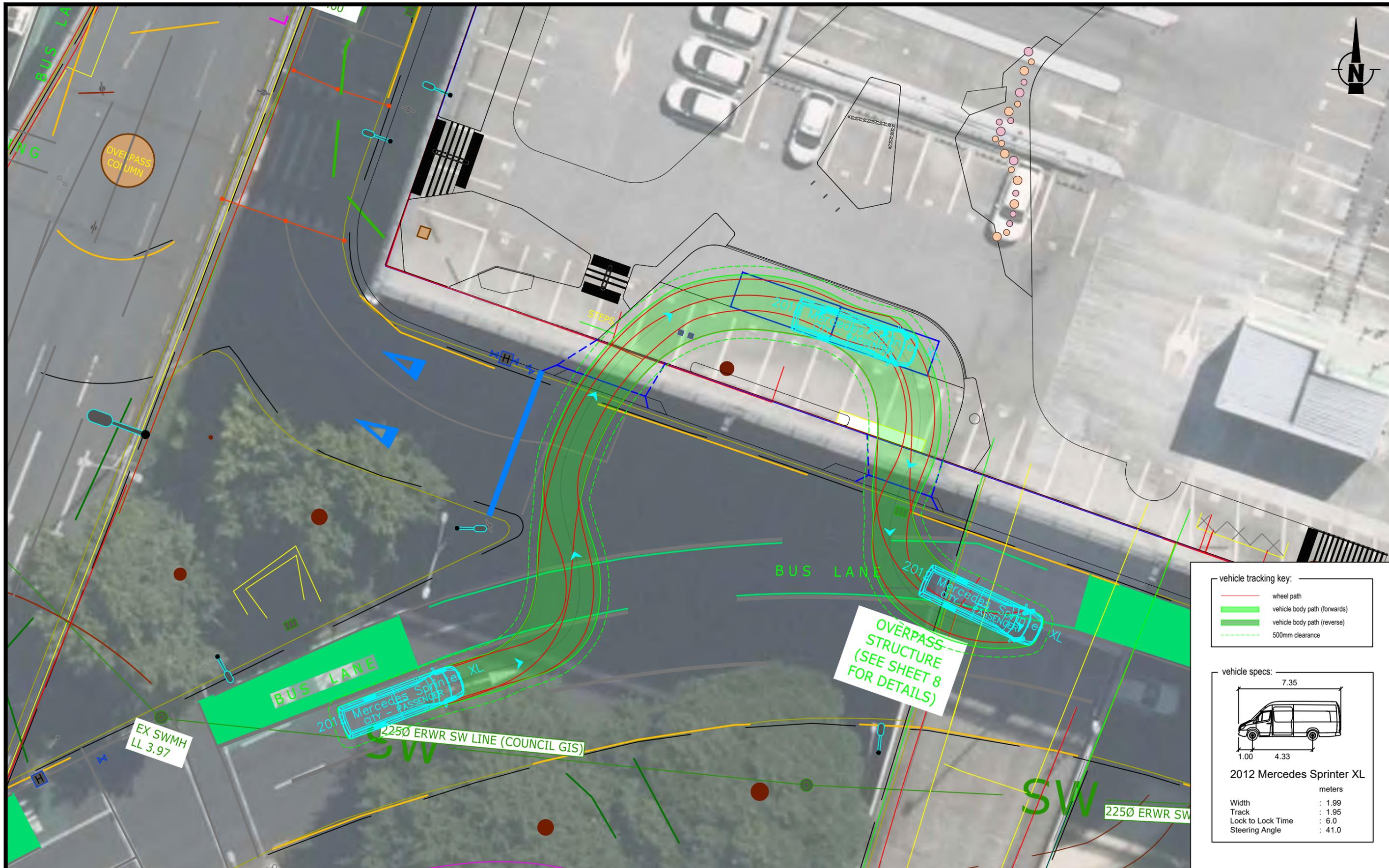
DESIGN: KC	DRAWN: KC
CHECKED: HS	DATE: 24/09/25
SCALE: 0 20m	
1:500 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: 2 LOWER HOBSON STREET, CBD
FOR RESOURCE CONSENT

SHEET TITLE: **PORTE COCHERE VEHICLE TRACKING**
6.4m DELIVERY VAN
 DRAWING NUMBER: PREP002-DC-DW01

SHEET: **04** of 07
 REV: **C**

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vehicle tracking key:

	wheel path
	vehicle body path (forwards)
	vehicle body path (reverse)
	500mm clearance

vehicle specs:

2012 Mercedes Sprinter XL
units: meters
Width : 1.99
Track : 1.95
Lock to Lock Time : 6.0
Steering Angle : 41.0

REV	AMENDMENT	DATE OF ISSUE
A	First Issue	24/09/25
B	Second Issue	29/10/25
C	Third Issue	06/11/25

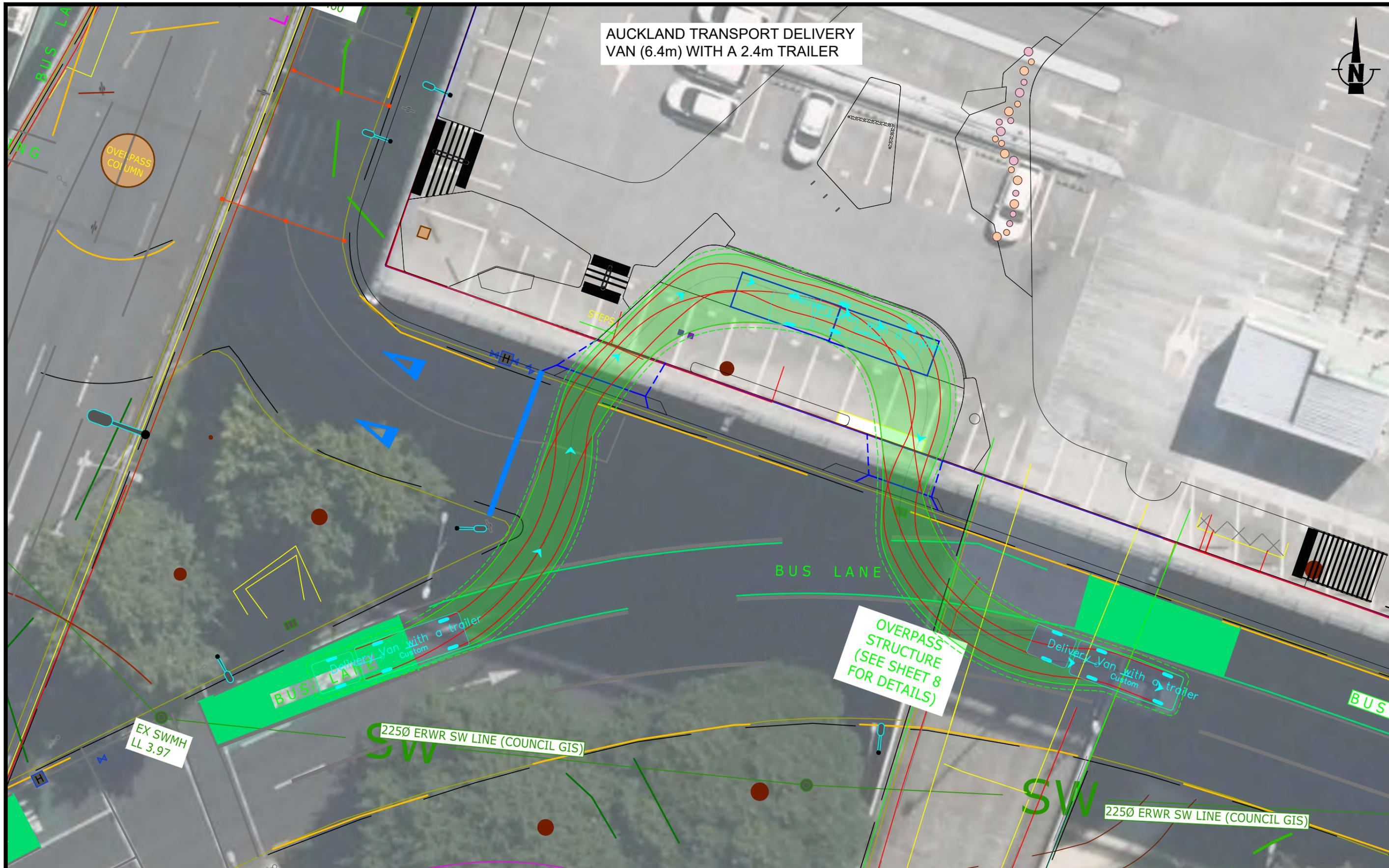
DESIGN: KC	DRAWN: KC
CHECKED: HS	DATE: 24/09/25
SCALE: 0 20m	
1:500 @ A3	

CLIENT: PRECINCT PROPERTIES
 PROJECT: DOWNTOWN CARPARK DEVELOPMENT
 LOCATION: 2 LOWER HOBSON STREET, CBD
FOR RESOURCE CONSENT

SHEET TITLE: **PORTE COCHERE VEHICLE TRACKING
 7.35m MERCEDES SPRINTER XL**
 DRAWING NUMBER: PREP002-DC-DW01

SHEET: **05 of 07**
 REV: C

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REV	AMENDMENT	DATE OF ISSUE	DESIGN: KC	DRAWN: KC	CLIENT: PRECINCT PROPERTIES	SHEET TITLE: PORTE COCHERE VEHICLE TRACKING DELIVERY VAN WITH A TRAILER	SHEET: 06 of 07	
A	First Issue	24/09/25	CHECKED: HS	DATE: 24/09/25	PROJECT: DOWNTOWN CARPARK DEVELOPMENT			
B	Second Issue	29/10/25			LOCATION: 2 LOWER HOBSON STREET, CBD			
C	Third Issue	06/11/25	SCALE: 0 20m		FOR RESOURCE CONSENT	DRAWING NUMBER: PREP002-DC-DW01	REV: C	
			<p>1:500 @ A3</p>					<p>Level 1, 11 Blake Street, Ponsonby, Auckland PO Box 47497 Ponsonby p 09 970 3820 f 09 970 3890 www.flownz.com</p>

