Akaroa Main Wharf Replacement

Integrated Transport Assessment

Prepared for:
Christchurch City Council

31 July 2025

Prepared by:
Stantec NZ

Project/File:
310203418 (240.2406)

Stantec New Zealand

Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date
A	Draft ITA	S Jiang	10/12/24	A Metherell	10/12/24	A Metherell	10/12/24
B	Draft ITA	S Jiang	03/06/25	A Metherell	03/06/25	A Metherell	03/06/25
C	Draft ITA	S Jiang	27/06/25	A Metherell	27/06/25	A Metherell	27/06/25
D	Draft ITA	S Jiang	25/07/25	A Metherell	25/07/25	A Metherell	25/07/25
E	Final ITA	S Jiang	31/07/25	A Metherell	31/07/25	A Metherell	31/07/25

The conclusions in the Report titled Akaroa Main Wharf Replacement are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Christchurch City Council (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Prepared by 

Signature

Steven Jiang

Printed Name

Reviewed by 

Signature

Andrew Metherell

Printed Name

Approved by 

Signature

Alix Newman

Printed Name

Table of Contents

List of Tables

List of Figures

List of Appendices

Executive Summary

The Akaroa Main Wharf has reached the end of its design life, and it is no longer economically viable to maintain the existing structure. Christchurch City Council are seeking to rebuild a new wharf in the existing wharf's location, with an option to shift the structure 1.5-2.5m to the north. The duration of works is expected to last between 11-14 months with 1-2 months for site set-up, 2-3 months for demolition, 5-6 months for piling and decking, 3-4 months for deck furniture, services and pontoons, and 1-2 months for site disestablishment.

The project transport requirements will have a degree of uncertainty as the appointed Contractor are still understanding construction requirements, particularly during the 3rd quarter of the programme, and this Integrated Transport Assessment recommends a Construction Traffic Management Plan is produced by the contractor. The Construction Traffic Management Plan will enable the details of project programme, use of laydown and operational areas, transport routes and vehicle types for delivery of materials to site, and staff parking and travel management to be certified by Council ahead of works commencing. In order to determine if there are specific transport related constraints and effects that also need to be addressed, this assessment has carried out feasibility investigations based on a likely set of construction assumptions.

In completing the rebuild works, two construction laydown areas and operational areas have been identified through Akaroa. The construction laydown areas are located at the Recreation Ground (Laydown 1) and the Main Wharf (Laydown 2), whilst the operational areas are located at the Akaroa Boat Ramp and the Bruce Slipway. The intention for the construction laydown areas is to enable the storage and transport of materials to and from the Main Wharf (Laydown 2) construction site. Similarly, the operational areas will assist with the rebuild works by facilitating activities such as vehicle staging and material delivery.

- The function of the Akaroa Boat Ramp operational area will be to transport materials to and from the construction site. To support this, a temporary loading ramp will be constructed adjacent to the existing boat ramp to allow a barge to dock.
- The Recreation Ground (Laydown 1) construction laydown area will allow for the processing of materials before being transported to the construction site, as well as being a material storage area.
- The Main Wharf (Laydown 2) construction laydown area will enable some material storage but will primarily house the plant necessary for the construction itself.
- The Bruce Slipway operational area to the south will be a vehicle staging area of concrete trucks during pouring.

Whilst the majority of materials, particularly large materials, will be barged to the site, there will be some material transfer via the Akaroa local transport network. This will require large construction vehicles to utilise the Akaroa transport network.

The local roads that may need to accommodate construction traffic are Rue Lavaud, Rue Brittan, Rue Jolie, Beach Road, Church Street and Bruce Terrace along with any associated side road intersections to and from the proposed construction laydown and operational areas.

Construction Traffic Management Plan measures have been identified, as recommended in this assessment, to enable the transport of materials between laydown and operational areas to enable the safe and efficient function of the local road network throughout construction. Both generic and site-specific measures have been identified for which the generic measures are as follows:

- If the laydown or operational area extends beyond what has been indicatively marked, then review and ensure the area does not impact the safe functioning of the road network;
- Coordination with relevant users of nearby facilities carried out by CCC (or through their contractor) to notify of restricted or temporary closure of facilities and inform of any alternative arrangements;
- Ensure construction vehicles have sufficient clear space to manoeuvre to and from the laydown and operational areas.

The Akaroa Main Wharf area is currently accessed by tour coaches, which are long rigid vehicles comparable in dimension to many of the construction vehicles that would likely access the construction site. Vehicle tracking analysis demonstrates that a vehicle as large as a 19m semi-trailer can physically manoeuvre to and from the Main Wharf (Laydown 2) construction laydown area with the implementation of parking restrictions and potentially some location specific traffic management. It has been noted that structural elements such as steel casing could be as long as 13m. It is expected that these larger materials would be barged to the site from a laydown area, but where not possible, this could be transported via the road network.

The current traffic volumes along the local roads are low and can comfortably accommodate any small increase in traffic volumes generated by the construction activities. There will be some low-level disruption to town centre parking availability near retail businesses where temporary parking restrictions are required to facilitate construction vehicle manoeuvring. The parking occupancy survey demonstrates there is adequate nearby parking capacity at typical times, and the temporary restrictions will have only a minor impact on people's access to the town centre activities. To minimise disruptions to the town centre, larger materials, which would typically be transported to the Site via large construction vehicles, could alternatively be barged to the construction site to remove the need to utilise the local road network. Whilst it is acknowledged that the construction period may last up to 14 months, the disruptions are assessed as low level and of a temporary nature.

Along the commercial one-way section of Beach Road, construction vehicles are recommended to not be any larger than the standard 8m Medium Rigid Vehicle commonly used for foodstuffs deliveries.

Stantec have assessed the effects of the proposal based on a conservative approach in estimating the quantum and level of construction impacts expected to be generated by the development project. Subject to the recommendations and conditions, it is considered that from a transport perspective, the transport related effects can be appropriately managed and will have a temporary minor impact on the safe and efficient operation of the local road network and adjacent businesses.

Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
ADT	Average Daily Traffic
CAS	Crash Analysis System
CCC	Christchurch City Council
CTMP	Construction Traffic Management Plan
HCV	Heavy commercial vehicle
ITA	Integrated Transport Assessment
LCV	Light commercial vehicle
MBCM	Monetised Benefits and Costs Manual
NZTA	New Zealand Transport Agency
PC	Passenger car
SH75	Stage Highway 75
TAR	Transport Assessment Report
TMS	Traffic Monitoring System
TTMP	Temporary Traffic Management Plan
vpd	Vehicles per day
vph	Vehicles per hour

1 Introduction

The existing Akaroa Main Wharf (Main Wharf) has reached the end of its design life and is no longer economically viable to maintain the existing structure. As such, Christchurch City Council (CCC) are proposing to undertake the replacement of the existing wharf with the construction of a new wharf, supported by the preferred Contractor, HEB Construction, to meet modern commercial and recreational use. The location of the Main Wharf within the context of Akaroa is shown in Figure 1-1.

Figure 1-1. Main wharf in context of local transport network (CCC GIS Maps)

The Main Wharf is located in the southern business area of Akaroa, with pedestrian and vehicle access from Beach Road. The Drummonds Jetty, Daly's Wharf and Akaroa Boat Ramps are located to the north along the bay.

The Main Wharf replacement structure will be offset approximately 1.5-2.5m from the existing location with the new structure being 185m long and 8m wide, with the overall level being slightly higher than existing. Construction is expected to begin in Q2 of 2026 and a 11–14-month construction window is anticipated. Over that period, it will be necessary to clearly establish nearby working areas for material and equipment laydown.

Construction laydown and operational areas located away from the Main Wharf will enable efficiency in movement of material to and from work sites by supporting barging material which in turn minimises larger heavy vehicle movements through Akaroa business areas heading towards the Main Wharf.

Due to space constraints within Akaroa, these construction laydown and operational areas will be located within road reserves, car park areas, and a recreation reserve. This will involve some disruption to the existing transport infrastructure. These laydown and operational areas are planned to be near the Akaroa Boat Ramp carpark, at the Akaroa Recreation Ground, at the Main Wharf, and the Bruce Slipway. It is possible that not all will be utilised as construction laydown areas, however all have been assessed for their feasibility. These will allow for construction activities to take place as well as enabling the storage of bulk equipment, providing for temporary project offices, vehicle staging for concrete pouring, and barging of material to and from the Akaroa Boat Ramp.

This Integrated Transport Assessment report considers the potential disruption construction traffic will have on the safe and efficient operation of the surrounding road network, along with necessary traffic management measures.to maintain public and worker safety. The report covers the following:

- Road hierarchy and environment
- Road safety and traffic patterns
- Construction traffic disruptions and traffic management
- Recommendations and conclusion

It is noted at the outset that the construction methodology will be refined by the contractor who will be responsible for obtaining approval of Temporary Traffic Management Plans and obtaining the necessary “Corridor Access Request” approvals for working within the road corridor, where relevant. Those processes sit outside the resource consent process and there are established protocols to obtain approvals, which rely on demonstrating public and worker safety is suitably provided for, and impacts of traffic management are suitably managed.

2 Transport Environment

2.1 Strategic Road Network

Akaroa is accessed via State Highway 75 (SH75) from Christchurch. The highway between Little River and Akaroa is characterised by a winding and hilly alignment. Occasional slow vehicle bays are available on the road over Hilltop supporting heavy vehicle movement, which includes a mixture of large passenger transport such as tour coaches, as well as heavy vehicles servicing Akaroa. SH75 terminates at Old Coach Road on the northern entry to Akaroa.

2.2 Local Transport Network

The road hierarchy and land use classifications of the surrounding transport environment is shown in Figure 2-1.

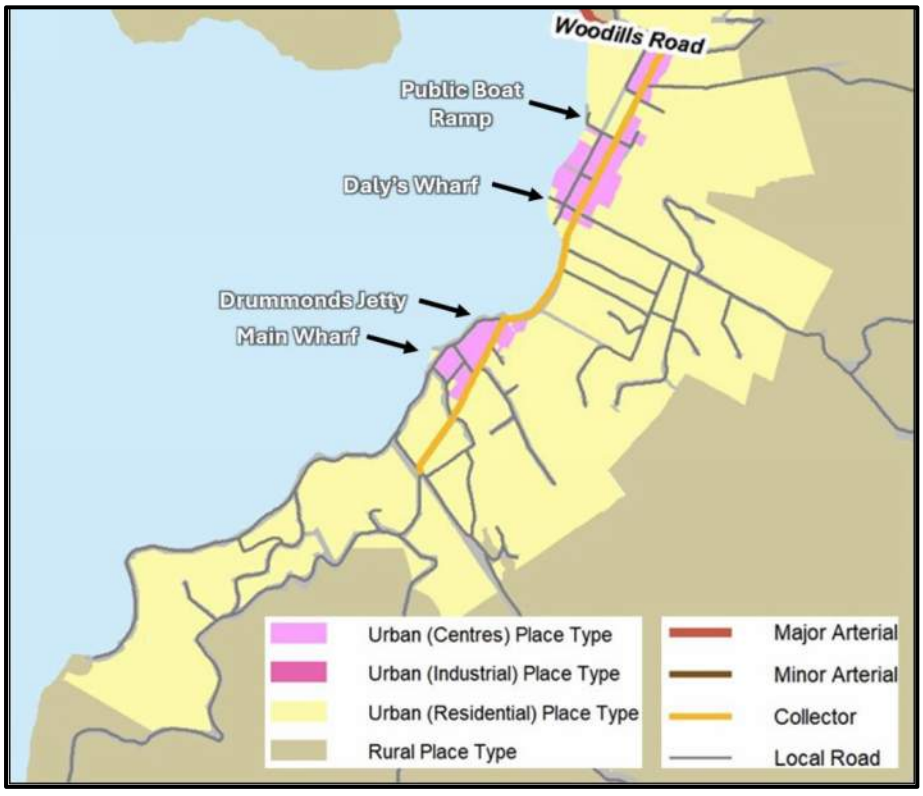


Figure 2-1. Road hierarchy classification (CCC District Plan)

The primary route within Akaroa from the north is Rue Lavaud – Beach Road – Rue Jolie, which are each classified as a “Collector Road”.

With respect to road classification the surrounding land use is primarily classified as ‘Urban (Centre)’ and ‘Urban (Residential)’.

The Main Wharf in Akaroa is accessed from Rue Jolie via either Church Street or Bruce Terrace, both of which are classified as 'Local' roads. Beach Road within the urban centre adjacent to the harbour provides the final local road connection to the wharf, and there is also a one-way road through the main centre area. The local road network has been formed to be able to accommodate a range of traffic including heavy vehicles and tour coaches that currently service the Akaroa Wharf area and adjacent town centre.

2.3 Roads within Akaroa

2.3.1 Rue Lavaud

Rue Lavaud is formed as a two-way road with an approximately 9.0m wide carriageway. Marked centrelines and edge lines are typically present near side road intersections. Kerbside parking has largely been restricted on the east side with some intermittent angled parking provided. To the west, kerbside parking is largely unrestricted and is readily available. The typical formation of Rue Lavaud can be seen in Photograph 2-1.

Photograph 2-1. Typical formation of Rue Lavaud outside 28 Rue Lavaud (left) and Little Bistro (right)

Footpaths are located on both sides of the road. Nearer to the businesses further south, the kerbside parking to the west is typically sign-posted with parking restrictions (i.e., P30, P60) The posted speed limit is 40km/h.

2.3.2 Rue Brittan

Rue Brittan is formed as a two-way road with an approximately 7.7m wide carriageway. There is no marked centreline or edge lines except for at the intersection with Rue Lavaud and at the entry curve to the boat ramp. 90° parking is available to the north adjacent to the Akaroa Recreation Ground with some kerbside parking available to the east of Rue Jolie adjacent to the small businesses. The typical formation of Rue Brittan can be seen in Photograph 2-2.

Photograph 2-2. Typical formation of Rue Brittan at Akaroa Boat Ramp entrance (left) and Akaroa Recreation Ground access (right)

A single footpath is located on the south side between Rue Jolie and Rue Lavaud. The posted speed limit is 40km/h with a 20km/h threshold on entry to the boat ramp.

2.3.3 Rue Jolie (South)

Rue Jolie south of Beach Road is formed as a two-way road with an approximately 7.4m wide carriageway. There is typically no marked centreline with a no-stopping yellow edge line marked on the eastern side of the road. A centreline and edge line on the eastern side of the road is marked at the Beach Road intersection. Parallel kerbside parking is available on the western side of the road from the property at 110 Rue Jolie to the south. The typical formation of Rue Jolie can be seen in Photograph 2-3.

Photograph 2-3. View of Rue Jolie looking south (left) and north (right) near Church Street

Footpaths are located on both sides of the road, with a formal pedestrian crossing located adjacent to The Gaiety Hall. The posted speed limit is 40km/h.

2.3.4 Beach Road

Beach Road to the south of Church Street is formed as a two-way road with an approximately 8m wide carriageway. There is no marked centreline but there is a marked edge line on the western side at the boundary between the carriageway and the Main Wharf. Parallel kerbside parking is available on both sides of the road. The typical formation of Beach Road to the south of Church Street can be seen in Photograph 2-4.

Photograph 2-4. View of Beach Road looking north (left) and south (right) near Akaroa Village Inn

Adjacent to the Main Wharf a footpath is located on the eastern side of Beach Road, with another path located on the opposite side of the Britomart Reserve along the harbour side. The posted speed limit is 40km/h.

To the north of Church Street, Beach Road is formed as a one-way road with an approximately 4.2m wide carriageway. Yellow no-stopping lines is provided at locations where parking is not provided. Parking is provided by a mixture of both angled and parallel parking spaces. The typical formation of Beach Road to the north of Church Street can be seen in Photograph 2-5.

Photograph 2-5. View of Beach Road looking north (left) and south (right) near Akaroa Fish & Chips

A sealed footpath is provided on the eastern side of Beach Road, with the western side formed as a gravelled path. The posted speed limit is 40km/h.

2.3.5 Church Street

Church Street is formed as a two-way road with an approximately 7.9m wide carriageway. There is no centreline marking but there is a marked edge line on the northern side of the road by way of no-stopping yellow lines. Unrestricted kerbside parking is available on the southern side with the entire west side restricted by no-stopping yellow lines. The typical formation of Church Street can be seen in Photograph 2-6.

Photograph 2-6. View on Church Street looking south (left) and north (right) near The Studio

Footpaths are located on both sides of the road and run continuously between Rue Jolie and Beach Road. The posted speed limit is 40km/h.

2.3.6 Bruce Terrace

Bruce Terrace is formed as a two-way road with an approximately 7.4m wide carriageway. There is typically no centreline or edge line marking except near the Beach Road intersection. Parallel kerbside parking is provided along both sides of Bruce Terrace with localised restrictions, by way of no-stopping yellow lines, near the Beach Road and Aubrey Street intersections. The typical formation of Bruce Terrace can be seen in Photograph 2-7.

Photograph 2-7. View on Bruce Terrace looking south (left) and north (right) near Aubrey Street

A footpath is provided on the eastern side of the road and runs continuously between Rue Jolie and Beach Road. The posted speed limit is 40km/h.

2.4 Intersections within Akaroa

2.4.1 Rue Brittan / Woodills Road

Woodills Road meets Rue Brittan at a priority-controlled T-intersection with Woodills Road forming the priority route. Rue Brittan provides the primary access into the Akaroa Boat Ramp. There are no formal turning provisions provided on Woodills Road. The posted speed limit at the intersection is 40km/h. The formation of the intersection can be seen in Photograph 2-8.

Photograph 2-8. View from Rue Brittan along Woodills Road looking west (left) and east (right)

Available sightlines to the west are clear, with no obstructions. To the east, sightlines are relatively clear with an advertisement sign slightly obstructing sightlines. Just beyond the intersection to the south there is a short-one way bridge as shown in Photograph 2-9.

Photograph 2-9. Grehan Stream bridge along Rue Brittan near Woodills Road

The bridge is not listed within CCC's 'Schedule of heavy vehicle weight and speed limits on under strength road bridges (2024/2025)' database and is therefore understood to be designed to a 100%

Class 1 standard or greater, meaning the bridge can accommodate a standard heavy vehicle with overall weight of 44 tonnes.

2.4.2 Rue Lavaud / Rue Brittan

Rue Brittan meets Rue Lavaud at a give-way controlled crossroads intersection with Rue Lavaud forming the primary route. The Rue Brittan approach is marked and signed with give-way controls. There are no formal turning provisions on Rue Lavaud. Rue Brittan provides one of the primary accesses into the Akaroa Recreation Ground and Akaroa Boat Ramp. The formation of the intersection can be seen in Photograph 2-10.

Photograph 2-10. View of Rue Lavaud / Rue Brittan intersection

2.4.3 Rue Jolie / Beach Road

Beach Road meets Rue Jolie at a give-way controlled T-intersection with Rue Jolie forming the priority route. The Beach Road approach has been formed more similar to a vehicle crossing with a slight cutdown and brick pavers as the surfacing. Entry into Beach Road from Rue Jolie is restricted as Beach Road is formed as a 'No Entry' road, as such, there are no turning provisions on Rue Jolie. The formation of the intersection can be seen in Photograph 2-11.

Photograph 2-11. Rue Jolie / Beach Road intersection

The available sightlines from Beach Road looking along Rue Jolie are shown in Photograph 2-12. To the north, sightlines are unrestricted with a clear view of southbound traffic along Rue Jolie. To the south, sightlines are restricted by roadside vegetation. The height of the tree shown in the photograph may coincide with the cab height of a truck.

Photograph 2-12. View along Rue Jolie from Beach Road looking north (left) and south (right)

2.4.4 Rue Jolie / Church Street

Church Street meets Rue Jolie at a give-way controlled T-intersection with Rue Jolie forming the priority route. The Church Street approach is signed and marked with give-way controls. There are no formal turning provisions on Rue Jolie. Church Street provides the primary access into the harbour side activity areas along Beach Road. The formation of the intersection can be seen in Photograph 2-13.

Photograph 2-13. Rue Jolie / Church Street intersection

Available sightlines from Church Street along Rue Jolie are shown in Photograph 2-14. To the north, sightlines are slightly restricted by the fencing. To the south, sightlines may be restricted by kerbside parking. The posted speed limit at the intersection is 40km/h.

Photograph 2-14. View along Rue Jolie from Church Street looking north (left) and south (right)

2.4.5 Rue Jolie / Bruce Terrace

Bruce Terrace meets Rue Jolie at a stop-controlled crossroads intersection with Rue Jolie forming the priority route. The Bruce Terrace approach is marked and signed with stop controls. There are no formal turning provisions on Rue Jolie. Bruce Terrace provides a secondary access to the harbour side activity centre along Beach Road and across the Aylmers Stream bridge towards the Bruce Slipway and other amenities. The posted speed limit at the intersection is 40km/h. The formation of the intersection can be seen in Photograph 2-15.

Photograph 2-15. Rue Jolie / Bruce Terrace intersection

The available sightlines from Bruce Terrace looking along Rue Jolie are shown in Photograph 2-16. To the north, sightlines may be restricted by kerbside parking on Rue Jolie. To the south, sightlines are restricted by a fencing and roadside vegetation near the road reserve.

Photograph 2-16. View along Rue Jolie from Bruce Terrace looking north (left) and south (right)

2.4.6 Beach Road / Bruce Terrace

Bruce Terrace meets Beach Road at a stop-controlled T-intersection with Beach Road forming the priority route. The Bruce Terrace approach is marked and signed with stop-controls. Beach Roads provides access across the Aylmers Stream bridge to the Bruce Slipway and other amenities as well as the harbour side activity centres to the north. The Britomart Reserve is located opposite Bruce Terrace. The posted speed limit at the intersection is 40km/h. The formation of the intersection can be seen in Photograph 2-17.

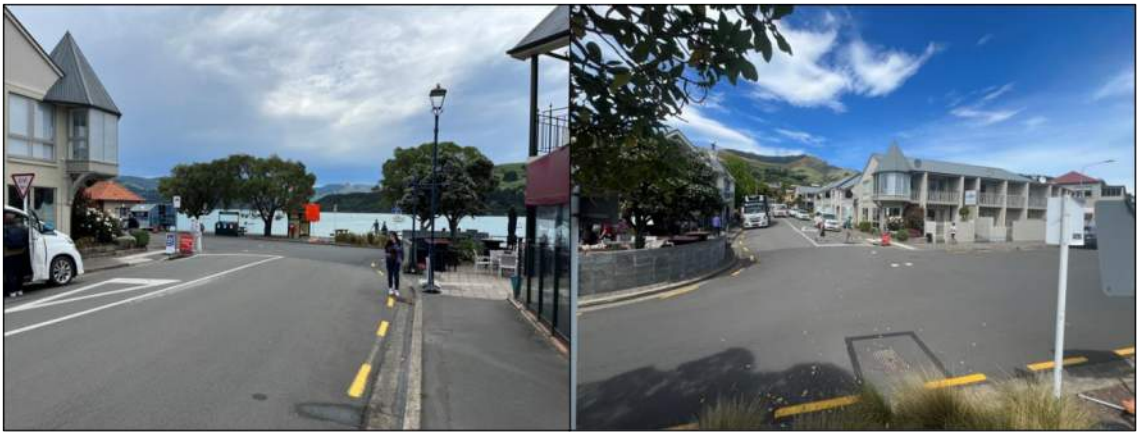
Photograph 2-17. Beach Road / Bruce Terrace intersection

The available sightlines along Beach Road from Bruce Terrace are shown in Photograph 2-18. To the south, sightlines are slightly obstructed by the vegetation near the bridge. To the north, sightlines are relatively unobstructed, with some potential obstructions from kerbside parked vehicles along Beach Road.

Photograph 2-18. View along Beach Road from Bruce Terrace looking south (left) and north (right)

2.4.7 Beach Road / Church Street

Church Street meets Beach Road at a give-way controlled T-intersection with Beach Road forming the priority route. The Church Street approach is marked and signed with give-way controls. The northern Beach Road leg is formed as a one-way road and provides entry only into the harbour side activity centre. The formation of the intersection is shown in Photograph 2-19.



Photograph 2-19. Beach Road / Church Street intersection

3 Traffic Environment

3.1 Mid-Block Traffic Volumes

Automatic tube traffic counters and intersection video movement surveys were undertaken at various locations within the Akaroa local road network to gain a better understanding of the existing traffic volumes, pedestrian activity and vehicle classification types. The tube counters recorded traffic volume data for the one-week period between 24th October 2024 to 30th October 2024, which included the Labour Day public holiday (Monday 28th October). The locations of the automatic tube counters (yellow stars) and intersection video surveys (blue stars) are shown in Figure 3-1 and Figure 3-2.

Figure 3-1. Location of Rue Lavaud automatic tube counter

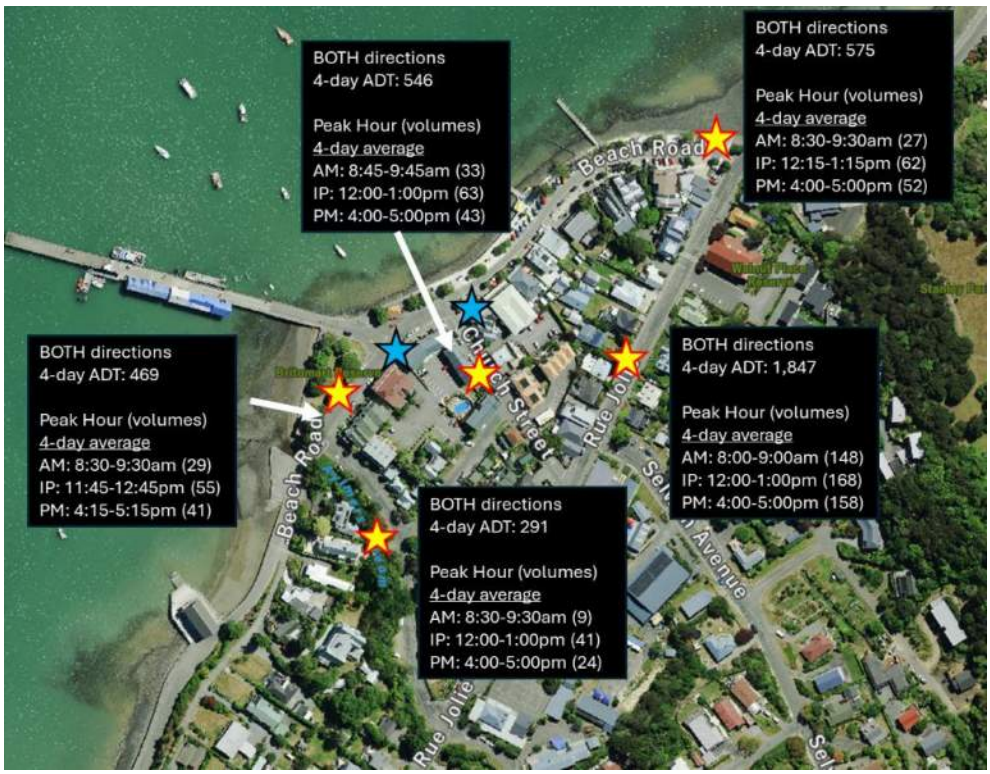


Figure 3-2. Locations of automatic tube counters (yellow/red star) and intersection video cameras (blue/black stars)

The 4-day Average Daily Traffic (ADT) along with peak hour volumes and periods are also shown for each count location.

The volume on the Collector Road network of Rue Lavaud – Beach Road – Rue Jolie is in the order of 1,900-2,600vpd. The local roads in the centre connecting to the Main Wharf are in the order of 300-650vpd.

3.2 Vehicle Classification Summary

The vehicle classification types are described in Table A45 in the NZTA 'Monetised Benefit and Cost Manual' (MBCM) as shown in Figure 3-3.

Table A45: Vehicle classes

Vehicle classes	Vehicle class composition
Passenger cars	Cars and station wagons, with a wheelbase of less than 3.2 metres
Light commercial vehicles (LCV)	Vans, utilities and light trucks up to 3.5 tonnes gross laden weight. LCVs mainly have single rear tyres but include some small trucks with dual rear tyres
Medium commercial vehicle (MCV)	Two axle heavy trucks without a trailer, over 3.5 tonnes gross laden weight
Heavy commercial vehicle I (HCVI)	Rigid trucks with or without a trailer, or articulated vehicle with three or four axles in total
Heavy commercial vehicle II (HCVII)	Trucks and trailers and articulated vehicles with or without trailers with five or more axles in total
Buses	Buses, excluding minibuses

Figure 3-3. Vehicle classification descriptions as per the MBCM (NZTA MBCM)

A summary of the vehicle classification types recorded at each of the automatic tube count locations over the full one-week period is provided in Table 3-1.

Table 3-1. Summary of vehicle classification types from 7-day total automatic tube count data

Location	Vehicle Classification					
	PC & LCV	Bus & MCV	Bus & HCV1	HCV1	HCV2	Other
Rue Lavaud between Rue Balguerie to Rue Benoit	17861	1171	165	121	29	183
	89.7%	5.9%	0.8%	0.6%	0.1%	0.9%
Rue Jolie between Walnut Pl to Selwyn Ave	12949	785	66	54	5	20
	91.6%	5.6%	0.5%	0.4%	0.0%	0.1%
Bruce Terrace between Beach Rd to Aubrey St	2383	107	109	12	5	9
	89.1%	4.0%	4.1%	0.4%	0.2%	0.3%
Beach Rd between Church St to Bruce Terrace	3877	262	52	4	5	9
	90.6%	6.1%	1.2%	0.1%	0.1%	0.2%
Church St between Aubrey St to Beach Rd	4071	376	41	11	5	3
	87.8%	8.1%	0.9%	0.2%	0.1%	0.1%
Beach Rd between Rue Jolie to Church St	4404	437	109	8	6	13
	86.0%	8.5%	2.1%	0.2%	0.1%	0.3%

As shown, passenger cars (PC) & LCVs represent the highest proportion of recorded traffic at all count sites. All count sites recorded an HCV2 class vehicle except for Rue Jolie between Walnut Place to Selwyn Avenue. HCV2 classed vehicles have been observed to utilise the road network close to the Main Wharf.

3.3 Hourly Patterns

3.3.1 Rue Lavaud

A traffic count was completed along Rue Lavaud between Rue Balguerie and Rue Benoit. The hourly volumes for the surveyed week, as shown in Figure 3-4, shows that traffic volumes are lower during

the middle days of the week between Tuesday to Thursday with a peak hourly volume of approximately 225 vehicles per hour (vph) at 12-1pm. Friday and Saturday exhibit traffic volumes of about 330vph. There is a noticeable increase in traffic volumes on Sunday, up to about 480vph. There is no discernible difference in directionality and appears relatively evenly distributed. This is due to Rue Lavaud being a key route for drivers heading towards the key activity centre along Beach Road, further south. The 4-day (Tuesday to Friday) heavy vehicle percentage is 8.9%.

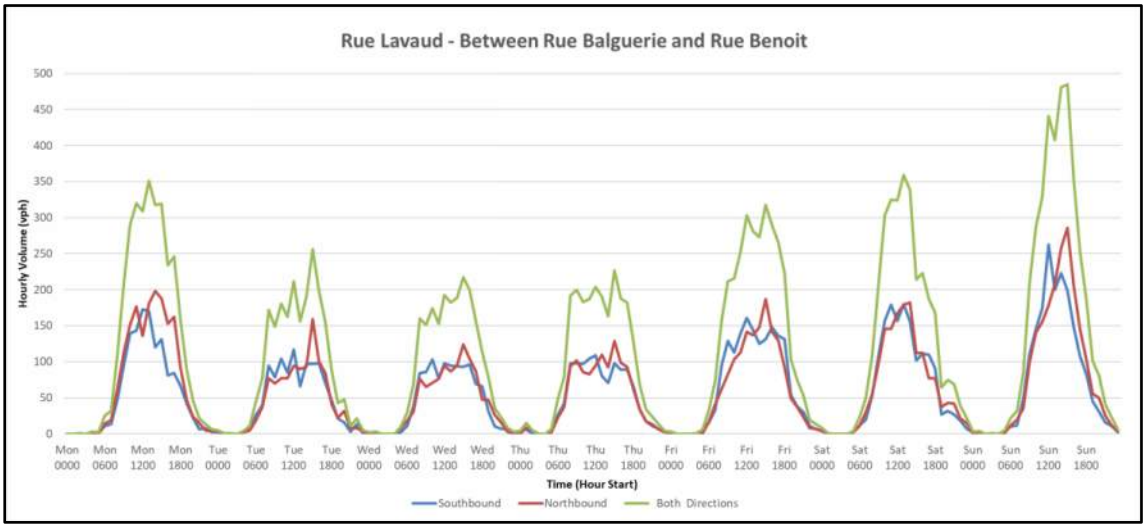


Figure 3-4. Traffic count on Rue Lavaud between Rue Balguerie and Rue Benoit

3.3.2 Rue Jolie South

A traffic count was completed along Rue Jolie South between Walnut Place and Selwyn Avenue. The hourly volumes for the surveyed week, as shown in Figure 3-5, shows that traffic volumes are lower during the middle days of the week between Tuesday to Thursday with a peak hourly volume of approximately 175vph. Friday and Saturday exhibit traffic volumes of about 225vph. There is a noticeable increase in traffic volumes on Sunday, up to about 340vph. Southbound traffic appears to be the dominant direction of travel. This is likely due to drivers heading towards the activity areas along Beach Road from Church Street, which then requires the drivers to exit northbound along the one-way section of Beach Road. The 4-day heavy vehicle percentage is 7.8%.

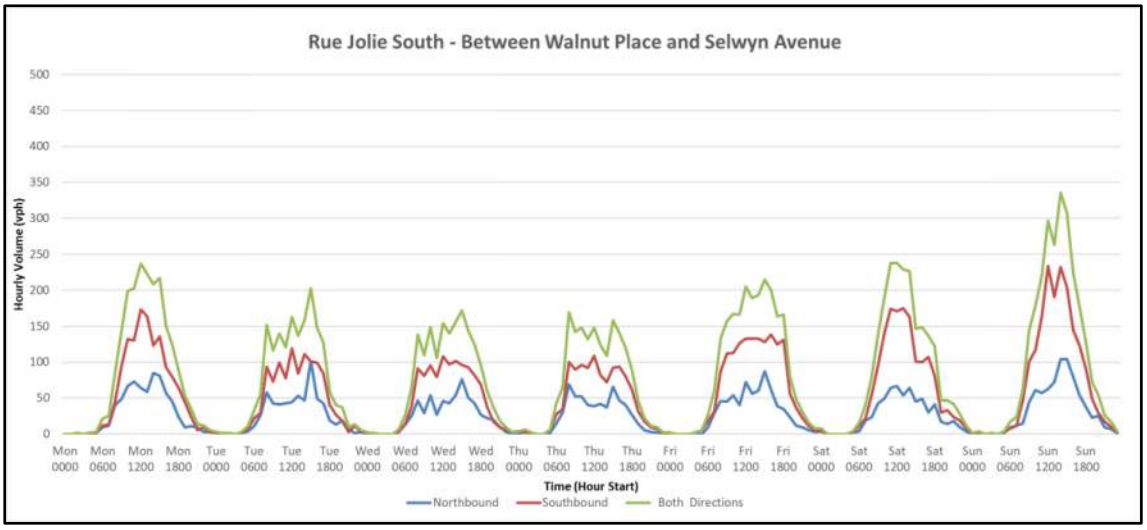


Figure 3-5. Traffic count on Rue Jolie South between Walnut Place and Selwyn Avenue

3.3.3 Church Street

A traffic count was completed along Church Street between Aubrey Street and Beach Road. The hourly volumes for the surveyed week, as shown in Figure 3-6, shows that traffic volumes are lower during the middle days of the week between Tuesday to Thursday, with a peak hourly volume of approximately 60vph. Friday and Saturday exhibit similar traffic volumes of about 80vph. There is a noticeable increase in traffic volumes on Sunday, up to about 125vph. There is a heavy reliance on the northbound direction of travel and is likely due to drivers accessing the activity areas along Beach Road through the one-way section of road. The 4-day heavy vehicle percentage is 10%.

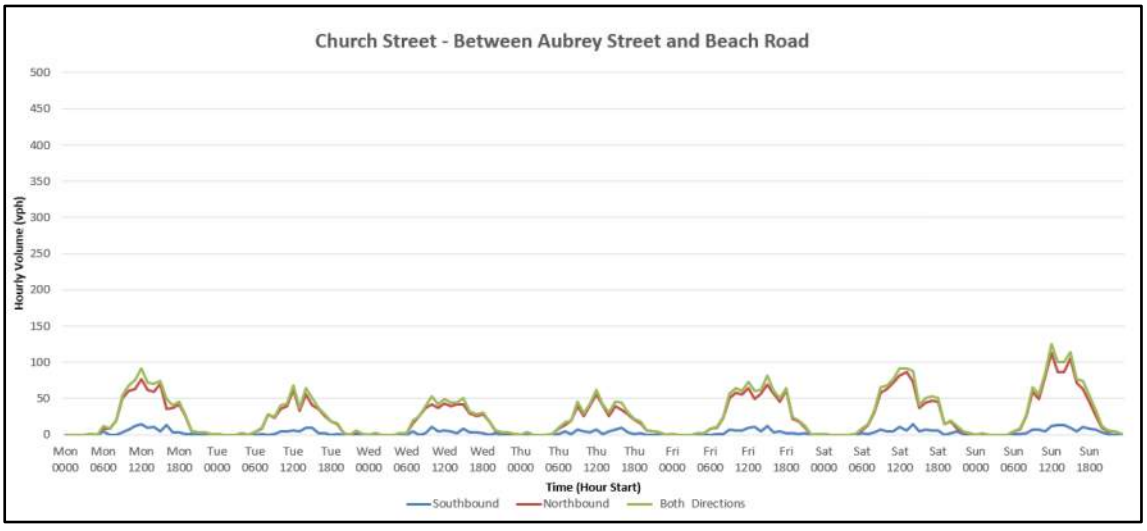


Figure 3-6. Traffic count on Church Street between Aubrey Street and Beach Road

3.3.4 Bruce Terrace

A traffic count was completed along Bruce Terrace between Beach Road and Aubrey Street. The hourly volumes for the surveyed week, as shown in Figure 3-7, shows that traffic volumes are relatively similar for Tuesday to Saturday, with a peak hourly volume of about 40vph. There is a significant increase in traffic volumes on the Sunday, up to about 160vph. Northbound traffic appears to be the dominant direction of travel which is likely due to drivers primarily heading towards the activity areas on Beach Road. The heavy vehicle percentage is 10.5%

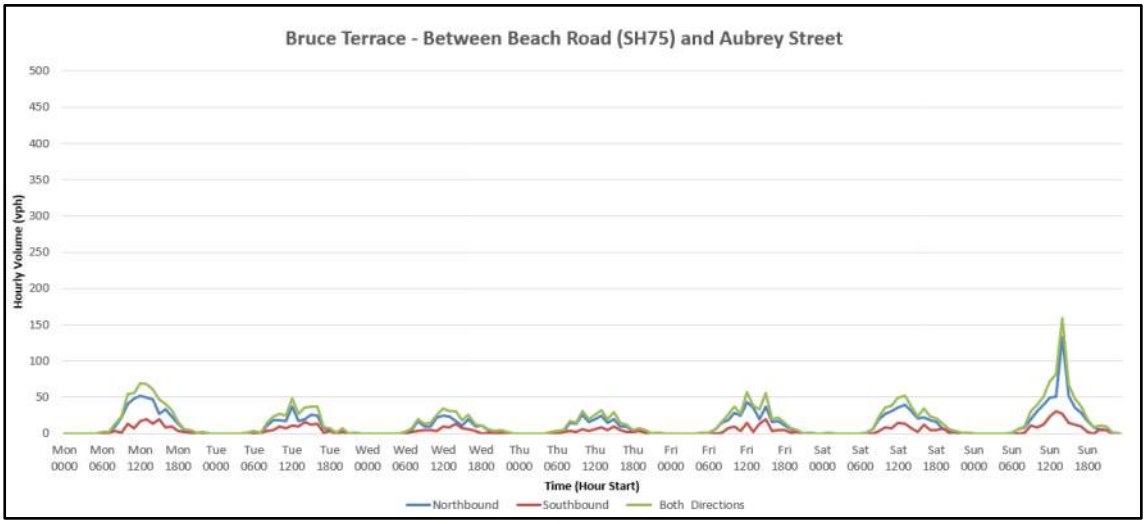


Figure 3-7. Traffic count on Bruce Terrace between Beach Road (SH75) and Aubrey Street

3.3.5 Beach Road (between Bruce Terrace and Church Street)

A traffic count was completed along Beach Road between Church Street and Bruce Terrace. The hourly volumes for the surveyed week, as shown in Figure 3-8, shows that traffic volumes are lower during the middle days of the week between Tuesday and Thursday, with a peak hourly volume of about 55vph. Friday and Saturday exhibit similar hourly peaks of about 80vph. There is a significant increase in traffic volumes on Sunday, up to about 155vph. This is likely due to drivers primarily heading towards the activity areas further north along Beach Road. The 4-day heavy vehicle percentage is 9.5%.

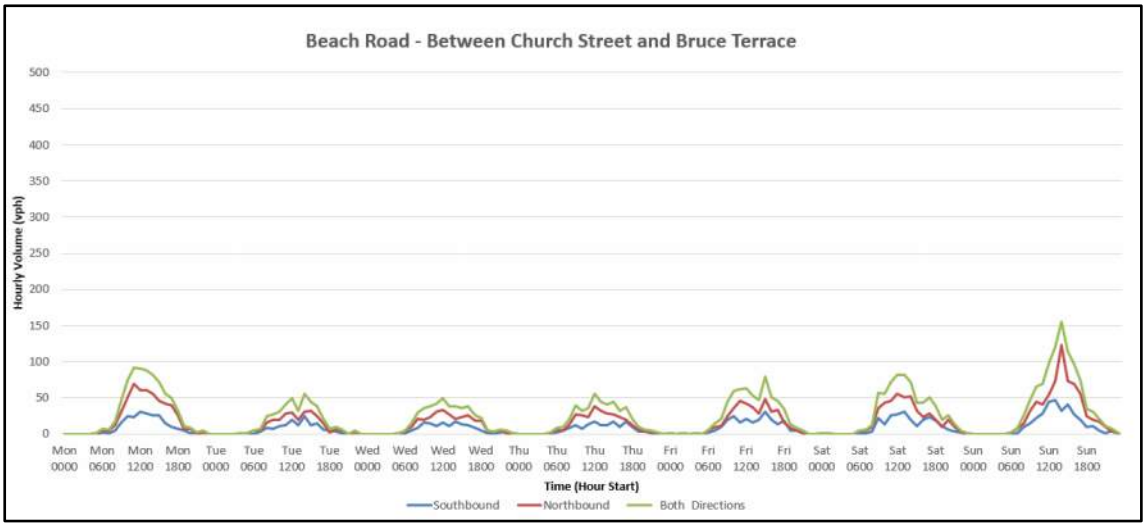


Figure 3-8. Traffic counts on Beach Road between Church Street and Bruce Terrace

3.3.6 Beach Road (between Church Street and Rue Jolie)

A traffic count was completed along Beach Road between Rue Jolie South and Church Street. The hourly volumes for the surveyed week, as shown in Figure 3-9, shows that traffic volumes are lower for the middle days of the week between Tuesday to Thursday, with a peak hourly average of about 60vph. Monday, Friday and Saturday exhibit similar traffic volumes of about 90vph on average. There is a significant increase in traffic volumes on Sunday, up to about 170vph. The directionality is solely eastbound as Beach Road at this location is a one-way road heading out towards Rue Jolie. The heavy vehicle percentage is 12.4%

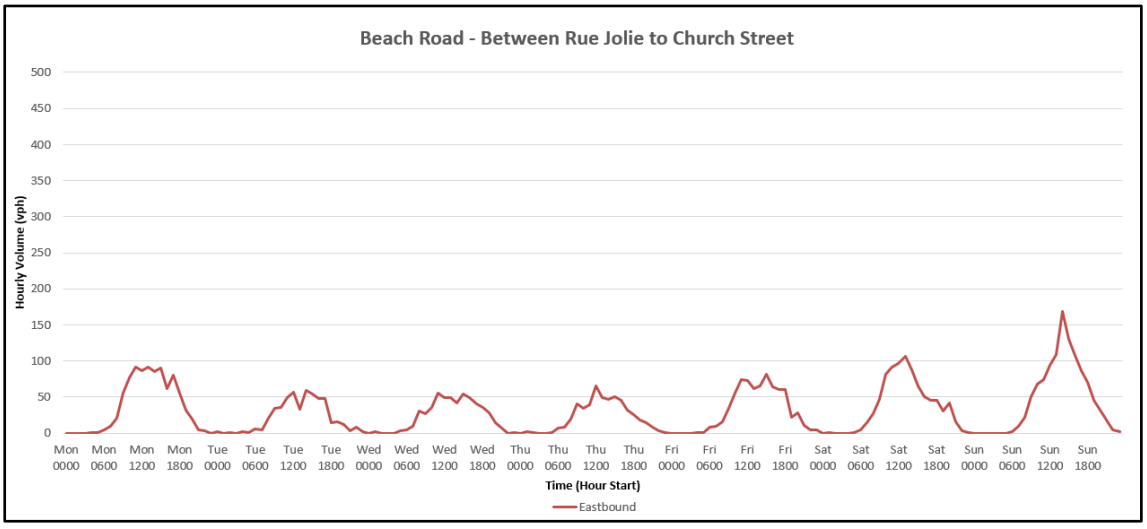


Figure 3-9. Traffic count on Beach Road between Rue Jolie South and Church Street

3.4 Beach Road Turning Movements

Intersection turning patterns at Beach Road in the vicinity of the Main Wharf and Church Street were identified from video-based surveys at peak periods. The surveys covered the midday period 11:30am to 1:30pm on 24th October 2024 (Thursday) and 26th October 2024 (Saturday). This included the Labour Day public holiday weekend.

The intersection turning movements near the wharf are shown in Figure 3-10. These show the dominance of movement westbound on Church Street and northbound on Beach Road. The wet weather on the weekend (Labour Day weekend) shows a reduced pedestrian movement activity around the wharf.

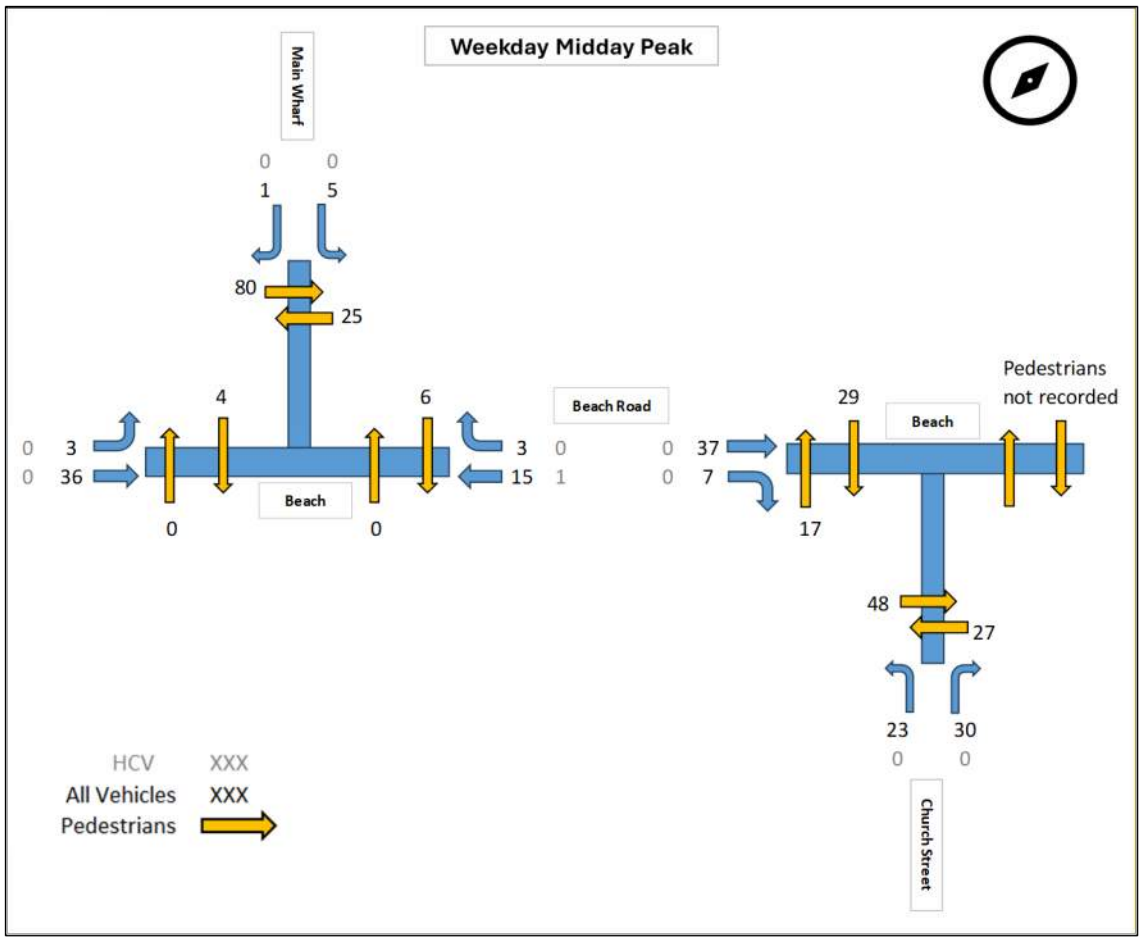


Figure 3-10. Weekday midday peak (12:00pm to 1:00pm) on Thursday 24th October

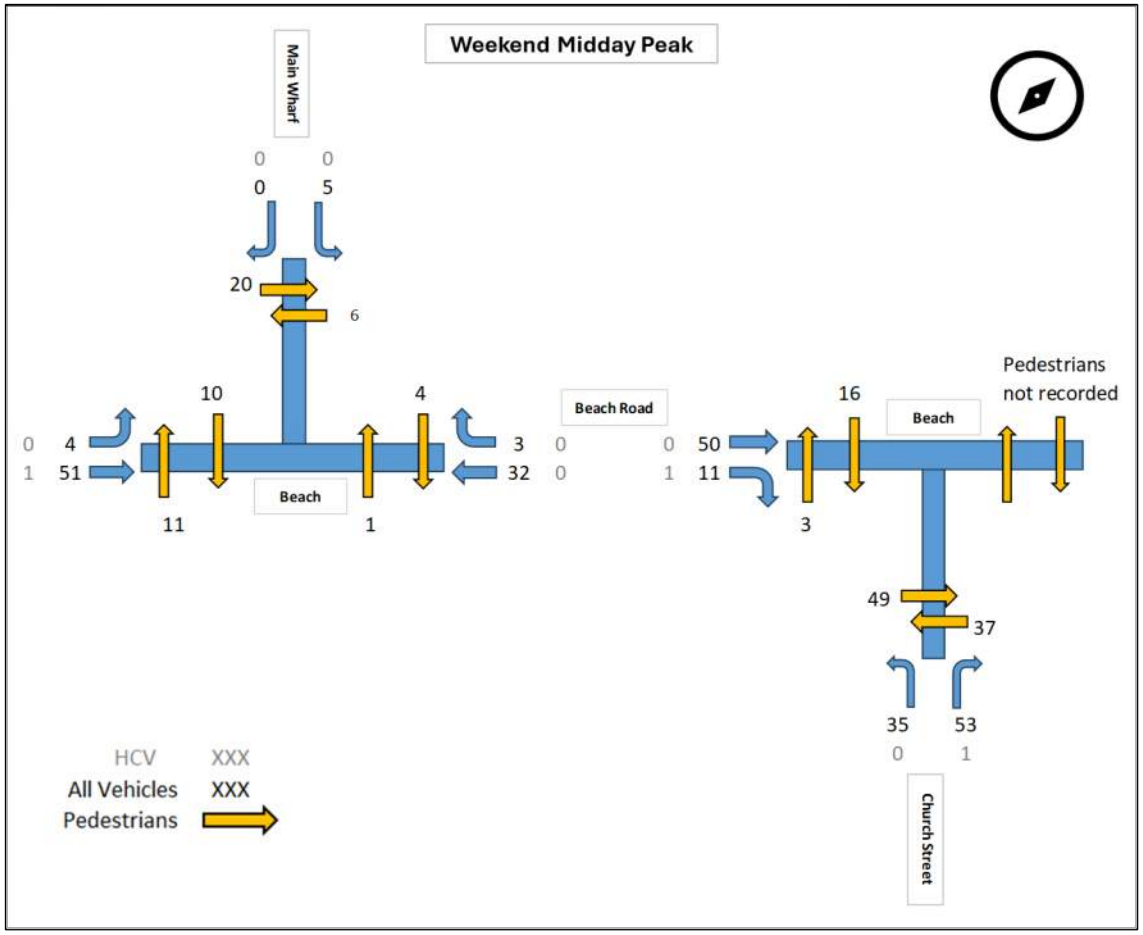


Figure 3-11. Weekend midday peak (11:30am to 12:30pm) on Saturday 26th October

3.5 State Highway 75 Access

Average daily traffic volumes across several historic years were obtained from NZTA's 'Traffic Monitoring System' to understand the seasonal variations of traffic travelling towards Akaroa. The daily traffic volumes across the years 2021-2024 are shown in Figure 3-12.

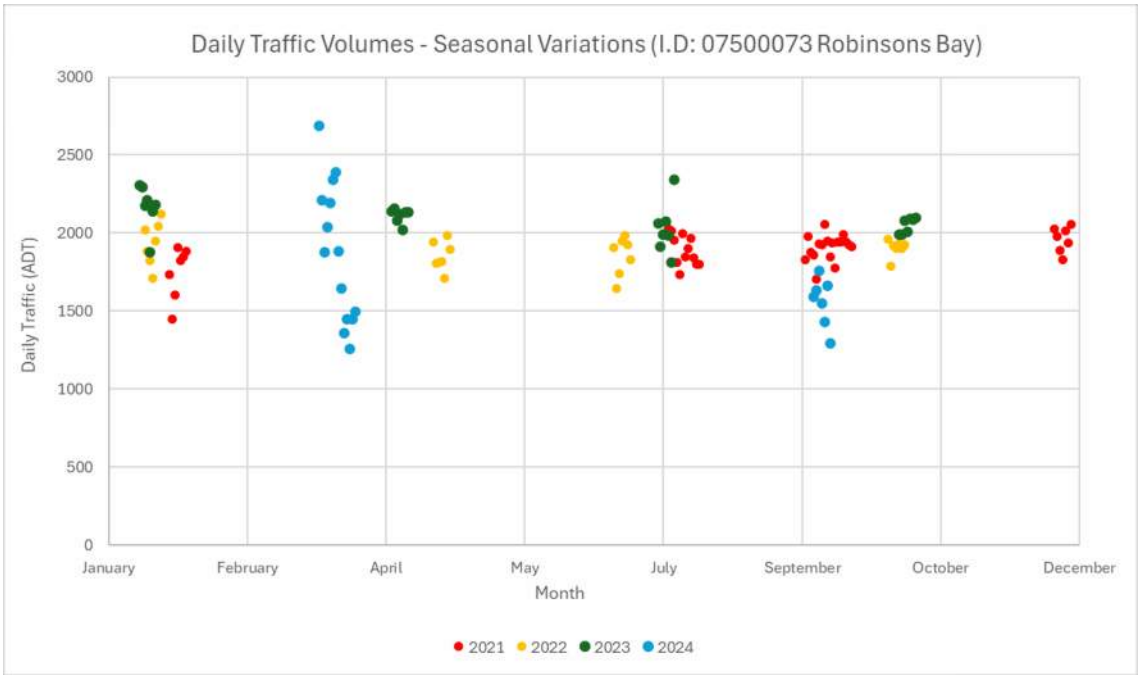


Figure 3-12. Daily traffic volumes at TMS count site ID: 07500073 Robinsons Bay

The traffic recordings are carried out infrequently, and it is difficult to draw any conclusions about seasonal variations. The data does appear to be quite steady across the entire year, not showing any significant variance which may indicate that traffic volumes are not significantly seasonal travelling between Christchurch and Akaroa.

The week of 16th March to 22nd March 2024 was selected as the representative week for hourly volumes along SH75. The hourly two-way traffic volumes are shown in Figure 3-13.

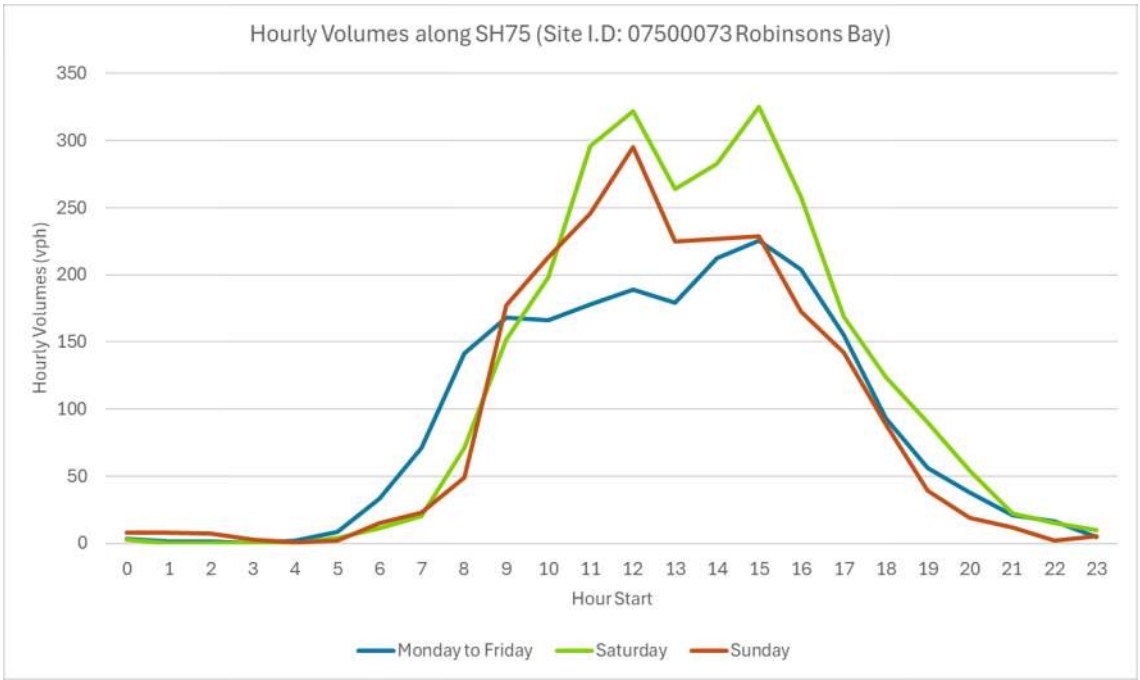


Figure 3-13. Hourly traffic volumes at TMS count site ID: 07500073 Robinsons Bay

The Monday to Friday 5-day period exhibits noticeably lower traffic volumes than the weekends, peaking at about 225vph at about 3-4pm. Both Saturday and Sunday exhibit a similar afternoon peak of about 300vph at 12-1pm. The Saturday shows another peak at about 3-4pm of about 325vph.

4 Road Safety

A search has been undertaken of the NZTA 'Crash Analysis System' (CAS) to assess the road safety records of the roads within the vicinity of the Site. The search has been conducted for the period of 2019 – 2024 and includes Bruce Terrace, Church Street, Beach Road, Rue Lavaud, Rue Balguerie and Rue Jolie. The search area and crashes are shown in Figure 4-1.

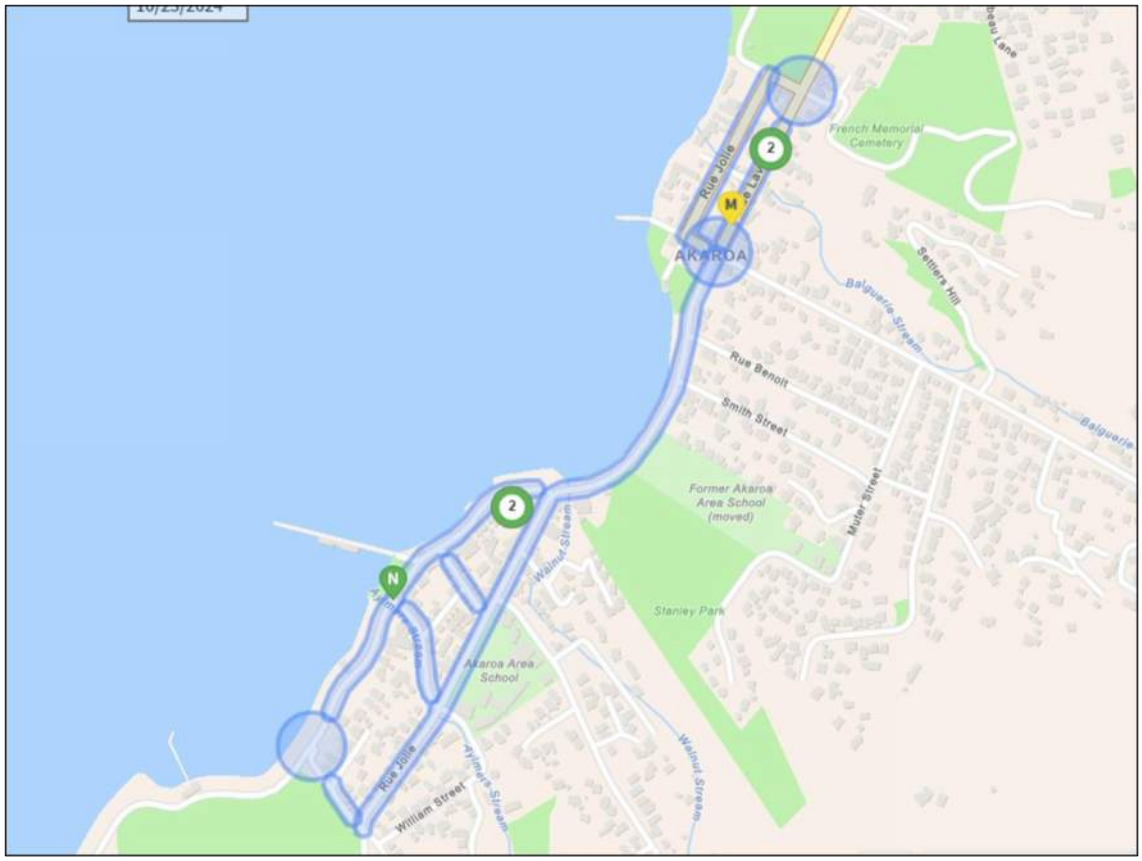


Figure 4-1. Crash locations map (NZTA CAS)

Six crashes have been reported within the search area with five being non-injury (i.e., damage only) and one minor injury over the surveyed five-year period.

Table 4-1. Summary of CAS reported crashes

Location	Type	Severity	Descriptions
Bruce Terrace / Beach Road	Right-turn in	1x Non-Injury	Driver NB on Bruce Terrace failed to stop for EB driver on Beach Road
Beach Road (between Rue Jolie and Church Street)	Other manoeuvre	1x Non-Injury	Driver EB on Beach Road turned into vacant parking spot, failed to see cyclist
Beach Road / Rue Jolie	Off roadway to left	1x Non-Injury	Driver WB on Beach Road suffered a medical event and fainted

Location	Type	Severity	Descriptions
Rue Lavaud (between Rue Brittan and Rue Balguerie)	Collision with parked vehicle	1x Non-Injury	Driver NB on Rue Lavaud hit parked vehicle
	Other manoeuvre	1x Non-Injury	Driver got wheel caught in gutter, applied accelerator heavily and crashed into fence.
	Other pedestrian	1x Minor	Driver parked in carpark reversed and failed to see pedestrians standing behind and knocked them over

5 Parking Occupancy

An informal parking occupancy survey was conducted during the site visit on the 8th November 2024 (Friday) for the period of 11:30am to 12:00pm. A parking occupancy diagram (Appendix A) has been developed and demonstrates the parking usage across Akaroa at the time of the survey.

The survey demonstrates that the parking near the retail businesses and other busy activity areas are well used, particularly along Beach Road. The adjacent side streets to the east of the Rue Lavaud, Beach Road and Rue Jolie main spine road have plenty of capacity to accommodate any surplus parking requirements.

6 Project Construction Activity

The proposed Akaroa Main Wharf design plans are set out in reports accompanying the Assessment of Environmental Effects. The primary transport related matter relates to changes in layout and traffic management during construction.

Based on the anticipated construction methodology, the construction phase comprises of the primary stages as detailed below:

- Site setup and establishment (1-2 months)
- Demolition (2-3 months)
- Piling and deck construction (5-6 months)
- Deck furniture, services and pontoons (3-4 months)
- Disestablish site and laydown/operational areas (1-2 months)

As each stage will result in different levels of activity and change to the transport network, it is proposed a key element from a transport perspective will be management of such changes through a Construction Traffic Management Plan (CTMP). The CTMP is a flexible plan, to be certified by Council, in accordance with an overarching framework, at least in part guided by outcomes of this ITA. It provides for detailed planning of movements, work areas, and informs stakeholders of the changes anticipated. The content of the CTMP is considered throughout this report, and summarised later at Section 10.

7 Construction Traffic Generation

A ‘Material Delivery & Logistics’ schedule, developed by the CCC preferred contractor for the project, HEB Construction, has been provided for a 12-month construction period which gives insight into the indicative quantum, timing and purpose of heavy vehicle loads per week associated with the wharf construction. This helps provides a broad understanding on the expected level of construction traffic on the Akaroa local road network. The schedule provided has been reformatted into the graph as shown in Figure 7-1. A load represents a heavy vehicle delivery, so with the return movement the number of vehicle movements on the road network will be two times the number of loads.

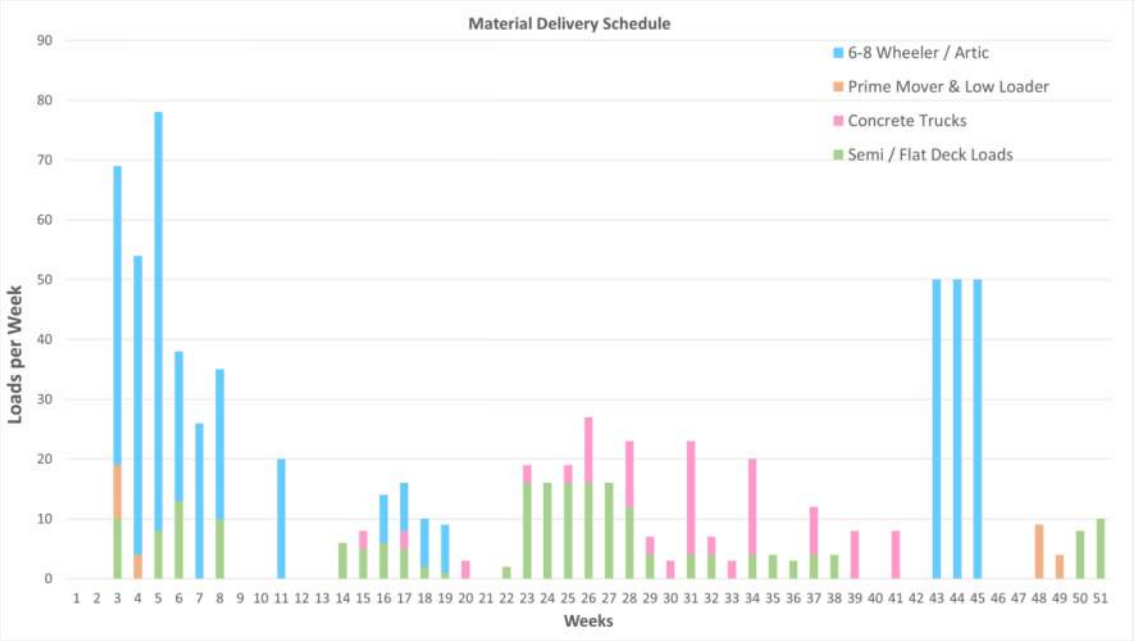


Figure 7-1. Indicative materials delivery schedule (HEB)

As detailed in the above figure, the heavy vehicle loads are split into four vehicle types:

- 6-8-Wheeler & articulated trucks
- Prime movers & low loaders
- Concrete trucks
- Semi-trailers & flat deck loaders

The delivery schedule displays high variability, with distinct peaks observed in the construction traffic volumes, particularly during the first eight weeks and between weeks 43 to 45. These are associated with the ‘6-8-wheeler & articulated trucks’ vehicle type and are for the purposes of constructing the temporary loading ramp at the Akaroa Boat Ramps and decommissioning the site laydown and operational areas and temporary offices.

Throughout the central period of construction, the loads are at much lower concentrations, with no significant peak periods expected. All concrete truck loads occur between weeks 15 to 41, with a clear

peak between week 26 to 34. The quantum of concrete truck loads tapers lower towards the start and ends of the occurrence period.

To broadly understand the impact of construction traffic on the local road network, an assessment has been undertaken, converting the construction traffic loads into an hourly traffic volume. The following assumptions have been made to provide this estimate:

- As concrete pouring activities typically occur during a shorter period, a peak factor of 4 hours will be used which assumes that during concrete pouring, all vehicle movements will occur within a 4-hour period
- Concrete truck activities will be assumed to occur over 2-3 days during the week.
- With the remainder of the vehicle types, these are expected to occur over a longer assumed 8-hour period.
    - All other construction traffic will be assumed to occur over a 5-day work period.
- All **loads** are converted to vehicle **movements** per hour, which includes the return trip.

These assumptions provide a general estimate for the average hourly vehicle movements. The hourly traffic volume estimates are detailed in Figure 7-2.

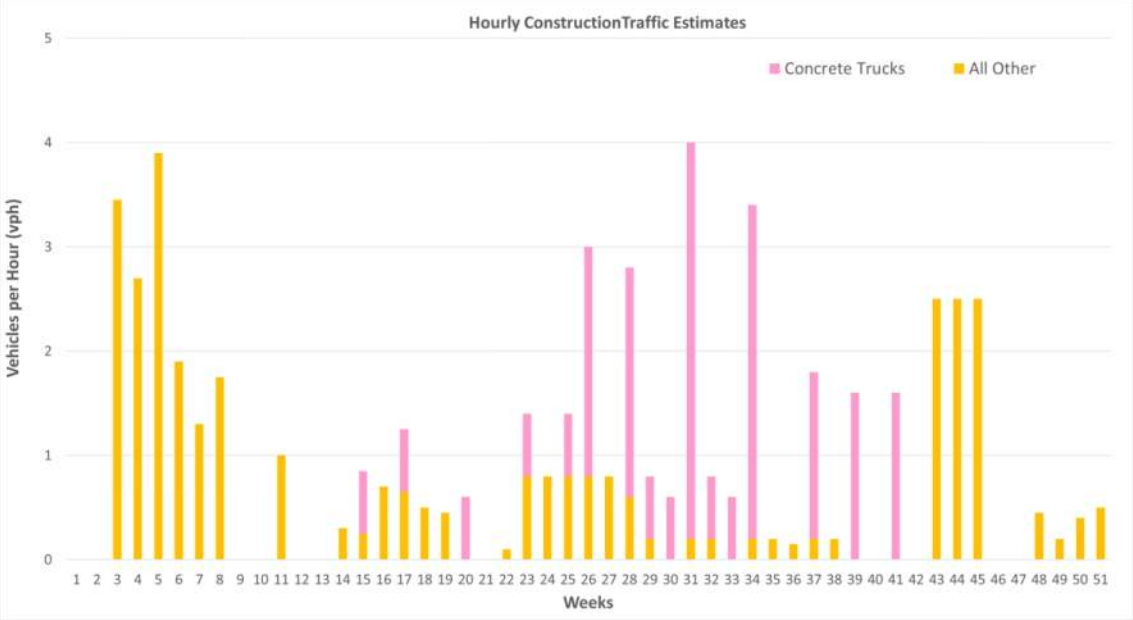


Figure 7-2. Hourly construction traffic estimates

During the start and end periods of the construction programme, vehicle movements are expected to be within the range of 0-4vph. During the middle period, volumes are typically expected to be approximately 1vph although when the concrete pouring occurs, there will be short periods of up to 4vph.

The site traffic generation will be spread across different parts of the Akaroa road network, depending on where materials are being transported to. This is described further in Section 8.

It is acknowledged there are still some uncertainties in the construction programme phasing, which could lead to increases to the assessed loads. It has been advised that any changes to the programme are likely to be small and not lead to a material change in overall construction loads. It is noted that approximately 15-20 staff members are expected across the project, which will increase locally to encompass steel fixers and concrete placers towards the 3rd quarter of the programme.

8 Construction Laydown and Operational Areas

Several construction laydown and operational areas have been proposed at different locations within the Akaroa township. The intentions are that a construction laydown area will enable materials to be stored before being barged or transported to the Main Wharf construction site. Similarly, the operational areas will assist with the rebuild works by facilitating vehicle staging and material delivery. It is noted that the timing, extent and use of these areas may change depending on the stage of demolition and construction processes.

Through the project scope refinement process, the following proposed laydown and operational areas have been identified as viable and are located at the approximate locations:

- Akaroa Boat Ramp operational area
- Akaroa Recreation Ground construction laydown area (Laydown 1)
- Main Wharf construction laydown area (Laydown 2)
- Bruce Slipway operational area

More details are provided in the subsequent sections.

8.1 Akaroa Boat Ramp / Recreation Ground

8.1.1 Construction Laydown and Operational Area Extents

Construction laydown and operational areas are designated within the Akaroa Boat Ramp and Recreation Ground as shown in Figure 8-1.

Figure 8-1. Proposed temporary loading ramp and associated construction laydown area (CCC GIS)

To access the construction laydown and operational areas within the Akaroa Boat Ramp and Recreation Ground, construction vehicles would need to cross over the two bridges along Rue Brittan, off Woodills Road to the north between the Akaroa Boat Ramp and Akaroa Recreation Ground or traverse through Rue Brittan from the south. These bridges are not listed within the CCC database and is therefore assumed to be designed to a 100% Class 1 standard or greater.

8.1.2 Akaroa Boat Ramp Operational Area (Temporary Loading Ramp)

A temporary loading ramp adjacent to the Akaroa Boat Ramp is proposed on the southern side. To facilitate construction, temporary reclamation, disturbance of the seabed, geotextile, fill and riprap protection works will be undertaken. The purpose of this loading ramp is primarily for the transfer of plant and materials to and from the adjacent construction laydown area (Laydown 1) within the Recreation Ground.

Plant and material will typically be transported by road for storage at the Akaroa Recreation Ground. From this location, heavy vehicles will mobilise to transfer material to the loading ramp to be barged to the Main Wharf, or alternatively, along the local road network.

There was recently a laydown area for the Daly and Drummonds Jetty projects near the proposed laydown area as shown in Photograph 8-1. That laydown area was only in operation for the construction works associated with the other Akaroa wharfs. As with those projects, the intention is that this area will enable materials to be prepared before being barged or transported to the Main Wharf construction site.

Photograph 8-1. Existing Akaroa Boat Ramp laydown area near location of proposed laydown area

The operational area is expected to require the temporary removal of two car parking spaces along the southern bay frontage in addition to any necessary central car parking spaces to enable the unrestricted circulation of long vehicles (e.g., car towing boats, construction vehicles).

The proposed operational area covers a larger portion of the southern parking area and disrupts the existing circulation route. A clear path is proposed to maintain access to the boat ramps from the south. It is necessary that unrestricted two-way movement is maintained within this route to ensure no reversing manoeuvres are required. It is noted that as a construction traffic management activity, monitoring of the effectiveness of the traffic diversions is necessary, and this can be modified based on operational and boat ramp requirements.

The location is within an area that will impact both vehicle manoeuvring and pedestrian movements. The area can accommodate long vehicles such that construction vehicles can also be readily accommodated on the approach roads and generally within the vicinity.

8.2 Akaroa Recreation Ground (Laydown 1)

A construction laydown area is proposed within the Akaroa Recreation Ground on the primarily on the western side with frontage to the Akaroa Boat Ramp parking area as shown in Figure 8-1

The intention is that this area will enable materials to be stored and prepared before being transported to the construction site via barge from the nearby Akaroa Boat Ramp or by the local road network on trucks. The current use is primarily for recreational activities as well as being used as an emergency

services helicopter evacuation area as shown in Photograph 8-2. Also shown is a maintenance vehicle at the Rue Brittan access into the Recreation Ground as shown in Photograph 8-3.

Photograph 8-2. Emergency services helicopter evacuation within Akaroa Recreation Ground

Photograph 8-3. Service vehicle at Recreation Ground main access

The laydown area is expected to require the temporary occupation of a portion of the grounds but with no disruptions to the nearby facilities (i.e., public toilets, playcentre). The range of activities, such as cricket, will likely be impeded by the laydown area.

To access this laydown area, construction vehicles will likely need to utilise the recreation ground access along Rue Brittan, which may require adjacent carparking spaces to be temporarily removed to enable manoeuvring of larger construction vehicles. A secondary one-way access (Figure 8-2) is proposed to be provided from the Akaroa Boat Ramp frontage into the Recreation Ground laydown area and does not require the removal of any parking spaces.

Figure 8-2. Secondary one-way access proposed by HEB

The proposed laydown area is within an area that will likely impact parking availability as well as generate disruptions to pedestrian activities within the recreation ground.

To support the effective use of the area during construction, it is recommended that the following are considered in establishing the laydown area.

- Coordination with the adjacent businesses along Rue Brittan carried out by CCC to notify of potential disruptions to nearby parking availability.
- Maintain access to the Recreation Ground from Rue Brittan to ensure emergency services are able to access to the grounds. Otherwise provide a suitable alternative access.

8.3 Main Wharf (Laydown 2)

A construction laydown is proposed at the Akaroa Main Wharf frontage to Beach Road as shown in Figure 8-3.

Figure 8-3. Akaroa Main Wharf proposed construction laydown area (CCC GIS Maps)

The current use is primarily for access to various businesses as well as the associated boats for cruise activities.

The laydown area covers most of the hardstand area bounded by the Britomart Reserve, Beach Road and just beyond the former Weighbridge Building to the northeast. This is expected to require the removal of two carparking spaces, shown in Photograph 8-4, in addition to the dedicated ‘Bus Stop’ zone as shown in Photograph 8-5.

Photograph 8-4. Main Wharf parking spaces requiring temporary removal

Signage and line marking is currently provided to direct bus parking to the dedicated zone. From site observations it is clear that this area is well used, particularly by tour coaches. An alternative parking area for buses and larger vehicles will need to be provided to cater for this demand

It has been noted that the existing commercial buildings (Black Cat and Blue Pearl) will not be removed during the wharf rebuild. The buildings will remain on their existing piles and will connect to the new wharf structure via a gangway. As such, public access to these buildings is assumed to be unavailable until the gangway is constructed.

Photograph 8-5. Bus Stop zone

Pedestrian paths connect into the Main Wharf from both directions, with the bay side path from the north and the Britomart Reserve path from the south, as shown in Photograph 8-6. The path connections into the Main Wharf will be severed by the laydown area and pedestrian movements will be restricted near the wharf.

Photograph 8-6. Bay side pedestrian path (left) and Britomart Reserve path (right)

It is understood that as part of the construction work, the Main wharf will not be available for public use, with users directed towards Daly's Wharf and Drummonds Wharf following their completion. This will remove the need for vehicle manoeuvring by the likes of tour coaches to occur at the Main Wharf area. Access to the Britomart Reserve and nearby businesses will be retained.

The material delivery logistics schedule details that there are 'prime mover & low loader' vehicles used to mobilise plant, such as cranes. These can be up to 25m in length and would have constrained movement through the Akaroa local road network. It is expected that heavy plant would be transported to the boat ramp to be barged to the wharf construction site, rather than directly, by road,

to the site. As such, vehicle tracking of a 19m semi-trailer has been undertaken and discussed in the subsequent sections of this report to capture the largest likely heavy vehicle expected to service the construction site by road.

To support the effective use of the area during construction, it is recommended that the following are considered in establishing the laydown area.

- Address heavy vehicle movements within the laydown area, desirably minimising the need for reverse manoeuvres onto Beach Road, in considering the risk to pedestrians from reversing vehicles.
- Consider temporary advisory signs on Rue Jolie at Bruce Terrace and Church Street advising of the Main Wharf closure, and potentially limited turning capability for long vehicles (as a result of the laydown area on the bus manoeuvring area)
- Provide suitable alternative pedestrian routes connecting the bay side path to the Britomart Reserve path to maintain pedestrian connectivity, including accessible ramps where necessary.

8.4 Bruce Slipway Operational Area

An operational area for construction vehicle staging area is proposed within the Bruce Slipway to the south of the Main Wharf on the other side of the Aylmers Stream bridge as shown in Figure 8-4.

Figure 8-4. Bruce Slipway proposed operational area (CCC GIS Maps)

Bruce Slipway is primarily used for recreational purposes for launching and retrieving private vessels with several residential properties accessing from Beach Road to the east as shown in Photograph 8-7. As shown in the both the aerial and site visit images, the edge of the carriageway along the hedges has historically been used for parallel parking. No-stopping yellow lines are marked along the west side of the Beach Road carriageway.

Photograph 8-7. View of Bruce Slipway (left) and adjacent residential property accesses (right)

The intention is that this area will be a holding point for concrete trucks during concrete pours. Concrete pouring occurs regularly during the central period of the construction programme. During the periods where concrete pouring occurs the Bruce Slipway will not be available for public use, with users redirected to the Akaroa Boat Ramp further north.

Access to residential properties on Beach Road is to be maintained, with some restrictions to the informal parallel parking likely necessary to allow for construction vehicle manoeuvring at the vehicle staging area. The location and extent of the operational area is such that it will not impact formal parking provisions, vehicle through movements along Beach Road or pedestrian movements.

To access this operational area, construction vehicles will need to cross over the Aylmers Stream bridge, which is a heritage bridge. The Aylmers Stream bridge is not listed in the CCC database and is therefore assumed to be designed to a 100% Class 1 standard or greater. Larger construction vehicles, subject to likely restrictions, would likely need to turn onto Beach Road from Church Street rather than from Bruce Terrace to ensure vehicle manoeuvring across the bridge is achieved.

To support the effective use of the area during construction, it is recommended that the following are considered in establishing the vehicle staging

- Ensure access to residential properties along Beach Road is maintained throughout the construction period.
- Ensure construction vehicles do not impose upon the residential property accesses and that all manoeuvring to and from the operational area can be done within the carriageway.
- Consider temporary advisory signs north of the Aylmers Stream bridge to redirect vehicles towing boats towards the boat ramps. With the Bruce Slipway unavailable there are no viable turning areas for vehicles towing boats.
- Direct construction vehicles to this vehicle staging area via Church Street and Beach Road to ensure access across the bridge is achievable as the left-turn from Bruce Terrace is constrained for larger vehicles.

9 Assessment of Traffic Effects

9.1 Strategic Access to Akaroa

The use of State Highway 75 for access to Akaroa by construction related vehicles is consistent with its function as a State Highway.

As discussed in Section 3.5, SH75 traffic count data indicates a weekday peak hourly traffic volume of about 225vph, for which the potential 10vph increase due to construction traffic on the busiest days would result in about a 4% increase in hourly traffic volumes along SH75. This would result in an imperceptible difference in traffic volumes and negligible impact to the safe and efficient function of the state highway.

Nevertheless, where there is a need for the bulk of the construction materials to be moved to Akaroa by road, the contractor should consider encouraging courteous driving practices and the use of slow vehicle bays. This includes the effective use of slow vehicle bays to allow other road users to pass and reduce the risk of dangerous passing manoeuvres by other road users. This is particularly true for high-risk areas such as over the Hilltop road, in particular. This can be incorporated in the CTMP.

9.2 Access to the Main Wharf

Drivers travelling into Akaroa pass through Woodills Road before reaching the main township road, Rue Lavaud. Rue Lavaud continues to the south as Beach Road before becoming Rue Jolie, which provides access into the Akaroa main activity centre.

The construction traffic generation analysis estimates that up to 10vph could be expected to be generated by the construction activities on the busiest days associated with concrete pours. The traffic count data indicates that Rue Lavaud carries about 225vph during the weekday peak, for which the additional construction traffic would lead to a 4% increase in traffic volumes. Rue Jolie carries about 175vph during the weekday peak, for which the additional construction traffic would lead to a 6% increase. The magnitude of volume increases is low compared to the existing traffic volumes along each of these roads, and coupled with the low historic crash record, it is considered that the construction activity can be safely and efficiently accommodated.

Vehicle speeds were obtained from the automatic tube counts and demonstrate the that the 85th percentile speeds across the week is 38km/h, with mean speeds of 28-32km/h, along Rue Lavaud, which is slightly lower than the sign-posted speed limit of 40km/h. 85th percentile speeds along Rue Jolie are also 38km/h, with mean speeds of 32km/h, again slightly lower than the posted 40km/h speed limit. The recorded operating speeds demonstrate that vehicles, due to the low-speed environment induced by the narrow road formation and built-up environment, are generally operating within safe thresholds.

Heavy vehicles are likely to travel at a slower speed as the narrow roads require more careful manoeuvring by larger vehicles. With vehicles operating at speeds lower than the posted speed limit, heavy vehicles are able to circulate safely at slower speeds. This can be reinforced through the CTMP and driver induction.

9.3 Heavy Vehicle Tracking

The vehicle tracking of a 19m semi-trailer has been undertaken in understanding the construction vehicle allowances on the local road network adjacent to the Main Wharf.

As discussed above, the material delivery and logistics schedule provided details that construction vehicles as long as 25m could be expected. These are only used to mobilise equipment and on demobilisation. Any specific long loads will be subject to consideration under an over dimension vehicle permit, separate to the consent process. Nevertheless, vehicle tracking is likely to be comparable to the 19m semi-trailer which is typically the largest design vehicle for on-road assessment of standard heavy vehicles.

The roads assessed comprise of Rue Jolie, Bruce Terrace, Beach Road and Church Street. Options for accessing in each circulatory direction have been reviewed.

Clockwise Circulation to Akaroa Wharf

Figures TR1.1 to TR1.6 in Appendix B demonstrates the semi-trailer accessing the Main Wharf from a clockwise direction, turning right into Bruce Terrace from Rue Jolie then right again into Beach Road.

Along Bruce Terrace, parking restrictions may be required for an approximately 100m section along the western side near the intersection with Rue Jolie. Further along Bruce Terrace, parking restrictions are not required although the semi-trailer will briefly need to utilise both sides of the road in some locations. Typically, traffic volumes conflicting with the movement are very low at about 10vph due to the bias in westbound traffic, and specific physical changes are not considered likely. Traffic management measures could be implemented to facilitate this safely if identified through monitoring of a Construction Traffic Management Plan, which could include parking restriction when it is known such long trucks will be delivering material.

The right turn from Bruce Terrace to Beach Road requires the temporary removal of the mobility parking space adjacent to the public toilets. A suitable alternative for the parking would be required.

As the semi-trailer manoeuvres into the laydown area, no additional parking restrictions are required. Any reverse manoeuvre (if required) will be subject to requirements of the site-specific temporary traffic management plan and would typically require an on-site spotter person.

The exit from the laydown area into Church Street will require the vehicle to cross into the opposing lane briefly. Traffic volumes at this location were very low at approximately 40vph on a weekday, enabling a driver to choose a time to manoeuvre without interference.

As the semi-trailer approaches Rue Jolie to exit Church Street, the kerbside parking on the southern side of Church Street between Rue Jolie and Aubrey Street will require temporary parking restrictions to accommodate a vehicle of that size. Whilst traffic volumes are low at the intersection, a spotter person is considered necessary to support the management of traffic whilst the truck turns.

Anticlockwise Circulation to Akaroa Wharf

Figures TR2.1 to TR2.4 in Appendix B demonstrates the semi-trailer accessing the Main Wharf from an anticlockwise direction, turning right into Church Street from Rue Jolie then left from Church Street into Beach Road. This scenario does not require the semi-trailer to traverse down Bruce Terrace, bypassing any parking restriction requirements to facilitate manoeuvring. As the semi-trailer uses Church Street to exit the Site, this requires the same quantum of parking restrictions along Church Street between Rue Jolie and Aubrey Street. The tracking demonstrates that the left turn from Church Street into Beach Road can be done without any parking restrictions. The manoeuvre into the laydown area can also be done without any parking restrictions. The exit from the Site is similar to the above tracking scenario where the vehicle will need to cross over the opposing lane in Church Street.

With the implementation of some parking restrictions at the identified locations, there are multiple route options that can safely accommodate the manoeuvring of a 19m semi-trailer to and from the Main Wharf (Laydown 2) construction laydown area. The frequency of these construction vehicles movements will be low as large materials are likely to be barged to the Site.

Existing Tour Coach Movements

Figures TR3.1 to TR3.4 in Appendix B demonstrate the tracking of a 12.6m long tour coach through Church Street, Beach Road and the Main Wharf. The tracking shows that a tour coach would cross centrelines and utilise both sides of the road to turn to and from Church Street. This includes crossing the centrelines for both Beach Road and Rue Jolie. There are similarities between the tour coach and semi-trailer tracking paths, where the semi-trailer would require additional temporary parking restrictions and likely be facilitated with a spotter for a construction activity.

9.4 Laydown and Operational Area Access

Rue Brittan / Woodills Road

Access to the proposed construction laydown and operational areas within the Akaroa Boat Ramps and Recreation Ground will be primarily to and from the Rue Brittan / Woodills Road intersection. As the boat ramps regularly accommodate vehicles towing boats as well as 12.6m long tour coaches, the access has been designed to accommodate the turning of large vehicles.

It is considered that any construction vehicles accessing the construction laydown and operational areas at this location would be able to manoeuvre to and from the area from the Woodills Road access.

Construction vehicles are to take the appropriate precautionary measures and only access the laydown area from the Rue Brittan / Rue Lavaud side if necessary. To access the laydown and operational areas from Rue Brittan there are much tighter manoeuvring requirements at the Rue Brittan / Rue Lavaud intersection and is heavily discouraged.

Rue Jolie / Beach Road

The Rue Jolie / Beach Road intersection forms the re-entry into the main Akaroa spine road following the Beach Road one-way road section. It is not expected for any construction vehicles to have to

require to travel along this section of Beach Road. In the event this is necessary, the vehicles should not be any larger than the typical 8m Medium Rigid Vehicle commonly used for delivery services.

It is noted that sightlines to the south are obstructed by roadside trees and vegetation. Drivers should be extra cautionary turning from this intersection. Vehicle speeds along Rue Lavaud and Rue Jolie have been recorded to typically be lower than the posted speed limit, providing turning drivers some additional decision-making time for manoeuvring.

It is not expected for construction vehicles to travel along the one-way section of Beach Road, but if required, can be accommodated safely with the condition that the vehicles are no larger than an 8m Medium Rigid Vehicle.

Main Wharf Access Roads

The following intersections pertain to the construction vehicle access into the Main Wharf (Laydown 2) construction laydown area:

- Rue Jolie / Church Street
- Rue Jolie / Bruce Terrace
- Beach Road / Church Street
- Beach Road / Bruce Terrace

9.5 Beach Road Activity Areas

As the construction works are focused near and at the existing Main Wharf (Laydown 2), there is expected to be some volume of heavy vehicles accessing the Main Wharf (Laydown 2) construction laydown area as part of the works. As such, vehicles potentially as large as a standard 19m semi-trailer could be contemplated by the Contractor for accessing Beach Road and associated side streets. In practice, it is likely smaller heavy vehicles would be used where practical.

There will be some disruption to the nearby retail businesses as the movement of these larger vehicles requires some parking restrictions to be implemented to facilitate manoeuvring. These would only be short temporary restrictions long enough that a larger vehicle can manoeuvre to and from the Main Wharf (Laydown 2) laydown area. The required access movements relating to the Main Wharf (Laydown 2) laydown area are via Church Street and Bruce Terrace.

The parking occupancy survey demonstrates that although parking along Beach Road is well utilised, there is an abundance of parking capacity around the nearby side streets within 200-300m away from the Main Wharf. The retail businesses will be negligibly impacted by any temporary localised parking restrictions at the Main Wharf as parking is readily available within walking distance to the shops. The current traffic volumes on the local roads are low and can comfortably accommodate the small increase in volumes generated by the construction activities. Any parked or stationary construction vehicles are expected to fit within the footprint of the laydown area as to not impose on the Beach Road traffic lane.

The ’Bus Stop’ area at the Main Wharf (Laydown 2) regularly accommodates vehicles as large as full-size 12.6m long tour coaches. Therefore, Beach Road between Bruce Terrace and Church Street is not unfamiliar to larger vehicles manoeuvring into the Main Wharf (Laydown 2) area. Whilst large

construction vehicles could take slightly longer to manoeuvre into the laydown area, this will be an infrequent occurrence as the materials requiring larger construction vehicles for transport would likely be barged to the Site instead.

It is not expected that any construction vehicles would be required to travel through the one-way section of Beach Road between Church Street and Rue Jolie. If in any case this was necessary, the vehicles should not be any larger than the typical 8m Medium Rigid Vehicle commonly used for business delivery services.

The vehicle tracking and availability of parking in the vicinity demonstrate that the impact to businesses along Beach Road will be negligible.

9.6 Relocation of Passenger Transport

With a construction laydown area being established at the Main Wharf (Laydown 2), this removes the capacity for the parking of large passenger vehicles such as buses and tour coaches at the dedicated ‘Bus Stop’ zone. Suitable alternative arrangements must be provided for to cater for the parking demand of these larger vehicles. It is considered that the western side of Rue Jolie to the south of Church Street is a viable location for passenger vehicle parking. As noted during the site visit, there is already precedent for this, as shown in Photograph 9-1.

Photograph 9-1. Tour coach parking along Rue Jolie

The parking occupancy survey shows that there is sufficient parking capacity to accommodate passenger vehicle parking along this section of Rue Jolie. Overflow parking can be readily accommodated nearby as there is plenty of parking capacity within adjacent side streets.

It is considered that there will be minor impacts to available parking capacity with the relocation of the 'Bus Stop' zone and that these impacts will be satisfactorily mitigated with the abundant nearby parking availability.

9.7 Pedestrian Movements

The laydown and operational areas which are within areas where pedestrian movements are common are the Akaroa Recreation Ground and the Main Wharf.

The Recreation Ground (Laydown 1) laydown area does not restrict access to any footpaths but limits the available space park users can occupy. With the footpath on the western side of Rue Lavaud unaffected by the construction works, there remains a continuous pedestrian connection into the town centre. The laydown area within the recreation ground causes negligible inconvenience to pedestrian movements and does not impact adjacent pedestrian movements associated with the nearby retail businesses.

The Akaroa Main Wharf (Laydown 2) laydown area covers a significant portion of the wharf frontage with Beach Road and the Britomart Reserve, extending just beyond the 'Authorised Vehicles Only' bay north of the Akaroa Dolphins building. The laydown area severs the connection between the bay side gravelled pedestrian path to the north and the Britomart Reserve footpath to the south. Pedestrians currently utilise these two path connections to access the Main Wharf key activities such as the retail businesses and boat cruises.

As the businesses and activities adjoining the Main Wharf will be inaccessible for the duration of the works, this removes the functional pedestrian requirements within the vicinity of the wharf. The northern extent of the laydown area does not coincide with any formal pedestrian cutdowns therefore pedestrians may choose to step over the kerb edge to cross the road. Implementing the appropriate TTMP measures would encourage and direct pedestrians to use formalised crossing locations, such as the one directly north of Church Street.

The disruptions caused to pedestrian movements by the proposed construction laydown and operational areas can be effectively managed through implementing TTMP measures and providing alternative routes for access.

9.8 Staff Work Travel

It is understood that staff parking will generally be within site boundaries, or staff will be shuttled to the Site from the Akaroa Recreation Ground. This should be included as a recommended requirement for consideration through the CTMP process.

Parking in roadside public parking spaces, particularly near the Akaroa key activity centres (e.g., Beach Road shops) should be discouraged to reduce the impact to the daily function of these key areas which have some reliance on shorter turnover parking activity. In the event workers travel to the Akaroa via a private vehicle for work and have not used private parking or shuttle, there is an abundance of kerbside parking capacity along the side streets to the east of the Rue Lavaud, Beach Road and Rue Jolie collector roads.

In adopting a work travel plan where staff do not impose on the local business parking capacity, there are no concerns that arise. Where private car travel cannot be avoided, the parking availability on local side streets can comfortably accommodate any small parking demand generated by the construction activities.

Staff, whether arriving by private vehicle or shuttle bus will typically arrive in the early morning and leave in the evening. These times would be outside the midday peak hours of traffic on the local road network and would be of a quantum having a negligible effect on the safe and efficient function of the local road network. Whilst this parking may potentially extend onto residential areas, typically this will not affect residential parking demand which will peak over night when workers will not be there.

It is assessed that the local road network can comfortably accommodate any small increases in travel to work related traffic generated by the construction project.

10 Construction Traffic Management Plan

10.1 Purpose

A Construction Traffic Management Plan (CTMP) forms a key component for managing the traffic effects of a project of this nature. The CTMP will need to be submitted to the Council for certification ahead of construction. The CTMP should address any potentially sensitive land uses along the various strategic and local access routes.

This document will be maintained in electronic form as it is a live document and will be updated to incorporate changes such as variations to the project schedule. Updates on Project progress and planned works that will affect the community should be provided on a regular basis.

The CTMP will address the following elements:

a) Site access arrangements (construction laydown and operational areas) and Site traffic management procedures (TTMPs)
b) Travel routes
c) Construction programme and construction activity time restrictions
d) Traffic volumes
e) Management plan for oversize loads (number, locations and transport times)
f) Driver protocols
g) Monitoring
h) Communication and complaints arrangements

To support the effective use of the laydown and operational areas during construction, it is recommended that the following are considered within the CTMP in re-establishing or modifying the laydown and operational areas as part of the detailed site planning:

- If the laydown or operational area is re-established or modified, review the laydown and operational areas and associated TTMP measures to ensure the functionality of boating activities, vehicle circulation and pedestrian movements are not compromised;
- Ensure construction vehicles have sufficient clear space to manoeuvre to and from the laydown and operational areas;
- Ensure the laydown and operational areas are set back sufficiently from any adjacent buildings to ensure sufficient manoeuvring space and clear zones/buffers;
- Coordination with Akaroa Boat Ramp, Recreation Ground, Main Wharf, and Bruce Slipway users to notify of restricted use and alternative arrangements, to be carried out by CCC;
- If pedestrian access is not maintained, provide suitable pedestrian connections to maintain a connected active modes network;
- Ensure access is maintained to impacted businesses, otherwise provide a suitable alternative route.

10.2 Site Access Points

The primary access into the Akaroa township will be from SH75 and its use for access by construction related vehicles is consistent with its function as a State Highway. It is considered that typically no specific controls on vehicle movements are necessary. For larger construction vehicles, it will be necessary to ensure drivers follow courteous driving protocol to minimise disruptions to other road users. This is described below in Section 10.5.

Within Akaroa, there are several identified construction laydown and operational areas spread throughout the township requiring access from a multitude of different local roads. A list of the potential laydown and operational areas and associated local roads which are required to access these areas is summarised below in Table 10-1.

Table 10-1. Summary of laydown and operational area local road accesses

Location	Local Road Access
Akaroa Boat Ramp	Woodills Road, Rue Brittan, Rue Lavaud
Akaroa Recreation Ground	Rue Brittan, Rue Lavaud
Main Wharf	Rue Jolie, Church Street, Bruce Terrace, Beach Road
Bruce Slipway	Church Street, Bruce Terrace, Beach Road

10.3 Construction Programme

The ‘Material Delivery Logistics’ schedule issued by HEB Construction provides details of the expected timing and volumes of construction traffic on the various parts of the local road network. A schedule of the various work stages as the construction proceeds has been provided. From this, the various parties will be able to confirm and understand the type, and frequency of vehicles within the local road network at any time during construction.

10.4 Traffic Volumes

Automatic tube count traffic surveys have been completed at several locations within the Akaroa local transport network. These demonstrate that typical weekday and weekend volumes are low, and it is considered the roads can comfortably accommodate any small increases in traffic volumes by construction related traffic.

10.5 Driver Protocols

In addition to the driving standards required by law, it is recommended that as part of site induction all drivers involved in the project are briefed to adhere to additional protocols when travelling along State Highway 75 and the Akaroa local roads where that supports reduction in nuisance and disruption to other drivers. This could include:

a) Allowing following traffic to pass along SH75 where safe to do so (i.e., at existing defined slow vehicle bays)

b) Manage travel speeds within Akaroa township, due to the potential large size of construction vehicles it is recommended to travel at a safe speed suitable for the environment, which is likely to be below the posted speed limit

10.6 Monitoring

The CTMP will include a record of reviews of the CTMP effectiveness in addressing safe and efficient movement of vehicles, and pedestrians around Akaroa. Where the CTMP does not address safety and efficiency effectively, necessary changes will be made to the CTMP to address these.

10.7 Communication Protocols

Communication protocols are important to the success of the CTMP. The names and contact details for the site manager(s) will be clearly recorded as the point of contact for all road users.

Provision will be made for the timing of oversize load movements or temporary parking restrictions to be advised to the community, enabling drivers ensure these spaces are clear of obstructions (i.e., parked vehicles).

.

11 Conclusion

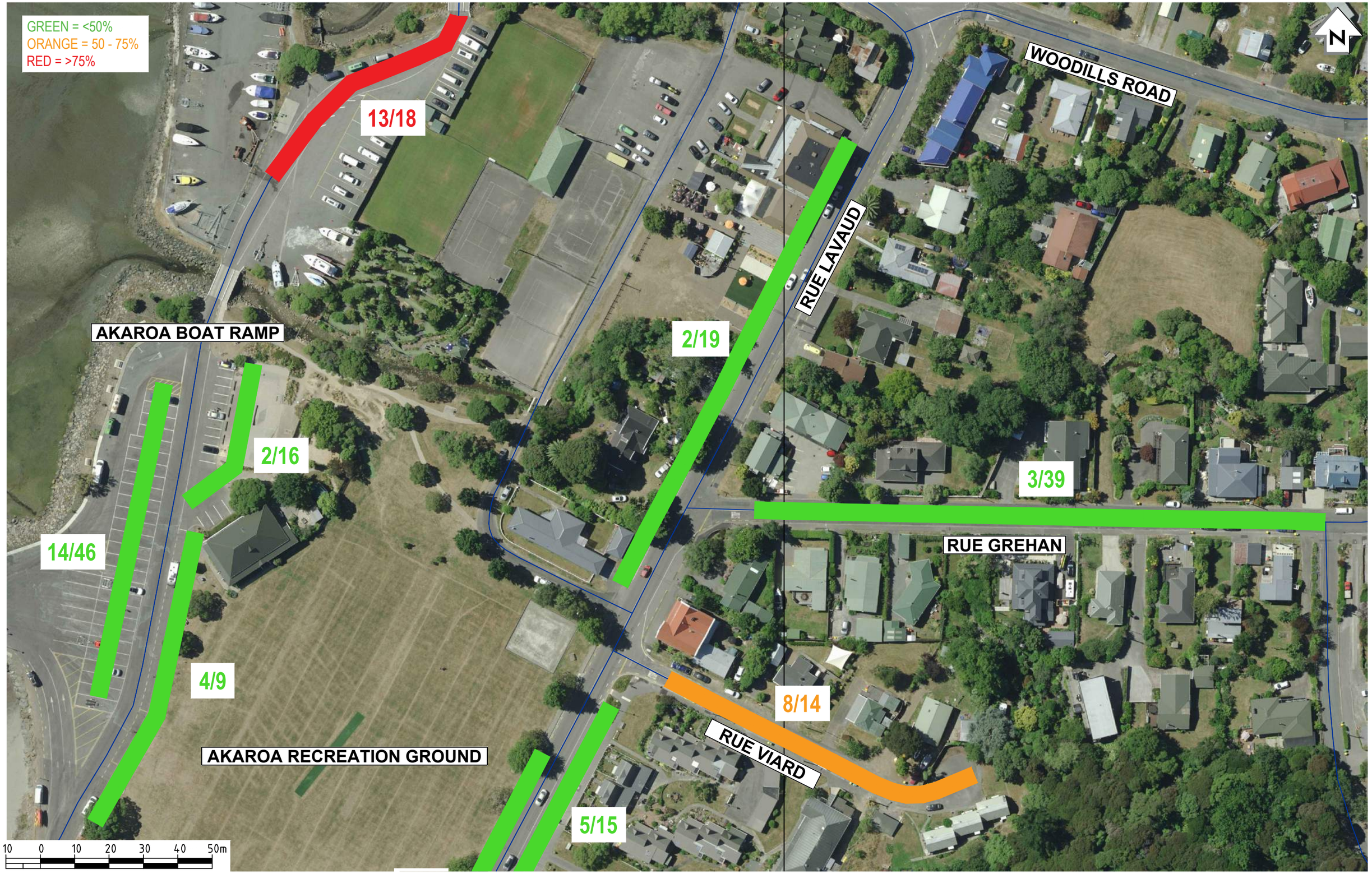
This Transport Assessment has investigated the location of the proposed construction works and associated laydown and operational areas along with the potential impacts on the local transport environment in Akaroa. It is considered that the temporary construction activities, which rely on use of public roads, parking spaces and other boat ramp/wharf areas will have a low level of transport effects provided suitable traffic management processes are implemented. Consideration has also been given to the bus and passenger vehicle parking located at the Main Wharf, with alternative arrangements identified.

In addition, routing of heavy vehicles, staff parking, and general outline of traffic related matters can be considered through a Construction Traffic Management Plan that would need to be prepared following the appointment of the Contractor and it would need to be certified by Council. As part of the CTMP, a Temporary Traffic Management Plan is to be prepared as it is a requirement of working in the public road space. This TTMP is to be submitted by the Contractor for certification by the Council, outside of the resource consent process.

This report has identified both several generic and site-specific transport related matters that need to be considered during the preparation and implementation of the CTMP and TTMP. With these provisions adhered to and addressed, it is considered the Akaroa Main Wharf Replacement project construction strategy can be supported from a transport perspective.

Appendices

Appendix A Parking Occupancy Survey



SCALE 1:1000

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

PARKING OCCUPANCY DIAGRAM

CLIENT LOGO

Stantec

SCALE:	1:1000 @ A3
DRAWN:	S JIANG
DATE:	29/11/2024
DESIGN:	A METHERELL
FIGURE No.	1
OF	A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C002.dwg

GREEN = <50%
ORANGE = 50 - 75%
RED = >75%

N

RUE BRITTAN

RUE LAVAUD

RUE BRITTAN

RUE LAVAUD

RUE JOLIE

18/22

0/16

5/15

0/2

1/5

4/9

1/21

2/16

9/17

10/12

10 0 10 20 30 40 50m

SCALE 1:1000

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

PARKING OCCUPANCY DIAGRAM

CLIENT LOGO

Stantec

SCALE: 1:1000 @ A3
DRAWN: S JIANG
DATE: 29/11/2024
DESIGN: A METHERELL

FIGURE No. 2
OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C002.dwg

SCALE 1:1000

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

PARKING OCCUPANCY DIAGRAM

CLIENT LOGO

Stantec

SCALE:	1:1000 @ A3
DRAWN:	S JIANG
DATE:	29/11/2024
DESIGN:	A METHERELL

FIGURE No. 3

OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C002.dwg

GREEN = <50%
ORANGE = 50 - 75%
RED = >75%

N

BEACH ROAD

2/4

12/20

BEACH ROAD

6/6

2/3

3/5

15/15

6/7

RUE JOLIE

10 0 10 20 30 40 50m

SCALE 1:1000

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

PARKING OCCUPANCY DIAGRAM

CLIENT LOGO

Stantec

SCALE: 1:1000 @ A3
DRAWN: S JIANG
DATE: 29/11/2024
DESIGN: A METHERELL

FIGURE No. 4
OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C002.dwg

GREEN = <50%
ORANGE = 50 - 75%
RED = >75%

N

BEACH ROAD

CHURCH STREET

RUE JOLIE

SELWYN AVENUE

BRUCE TERRACE

6/7
0/2
1/5
3/5
2/3
5/6
7/10
2/4
0/3
1/3
4/14
3/5
13/29
6/6
3/11
11/19
0/6

10 0 10 20 30 40 50m

SCALE 1:1000

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

PARKING OCCUPANCY DIAGRAM

CLIENT LOGO

Stantec

SCALE: 1:1000 @ A3
DRAWN: S JIANG
DATE: 29/11/2024
DESIGN: A METHERELL

FIGURE No. 5
OF
A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C002.dwg

GREEN = <50%
ORANGE = 50 - 75%
RED = >75%

BEACH ROAD

BRUCE TERRACE

RUE JOLIE

1/16

3/16

0/6

3/9

N

10 0 10 20 30 40 50m

SCALE 1:1000

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

PARKING OCCUPANCY DIAGRAM

CLIENT LOGO

Stantec

SCALE:	1:1000 @ A3
DRAWN:	S JIANG
DATE:	29/11/2024
DESIGN:	A METHERELL
FIGURE No.	6
OF	A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C002.dwg

Appendix B Vehicle Tracking

SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

19m SEMI-TRAILER - RIGHT-TURN INTO BRUCE TERRACE FROM RUE JOLIE

CLIENT LOGO

Stantec

SCALE: 1:250 @ A3
DRAWN: S JIANG
DATE: 28/11/2024
DESIGN: A METHERELL

FIGURE No. TR1.1
OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg

SCALE 1:500

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

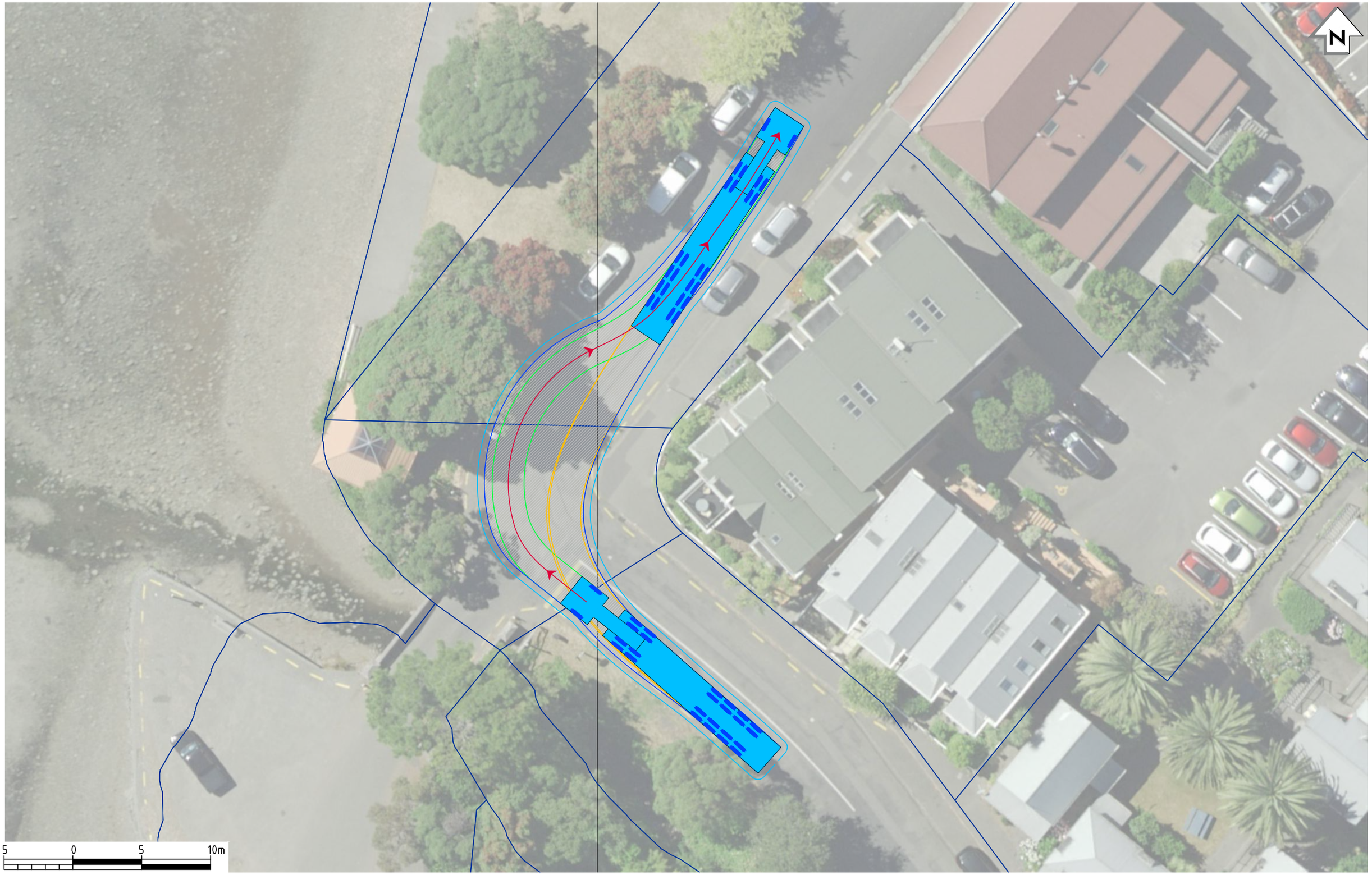
19m SEMI-TRAILER - BRUCE TERRACE CIRCULATION

CLIENT LOGO

Stantec

SCALE:	1:500 @ A3
DRAWN:	S JIANG
DATE:	28/11/2024
DESIGN:	A METHERELL
FIGURE No.	TR1.2
OF	A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg



SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

19m SEMI-TRAILER - RIGHT-TURN OUT INTO BEACH ROAD FROM BRUCE TERRACE

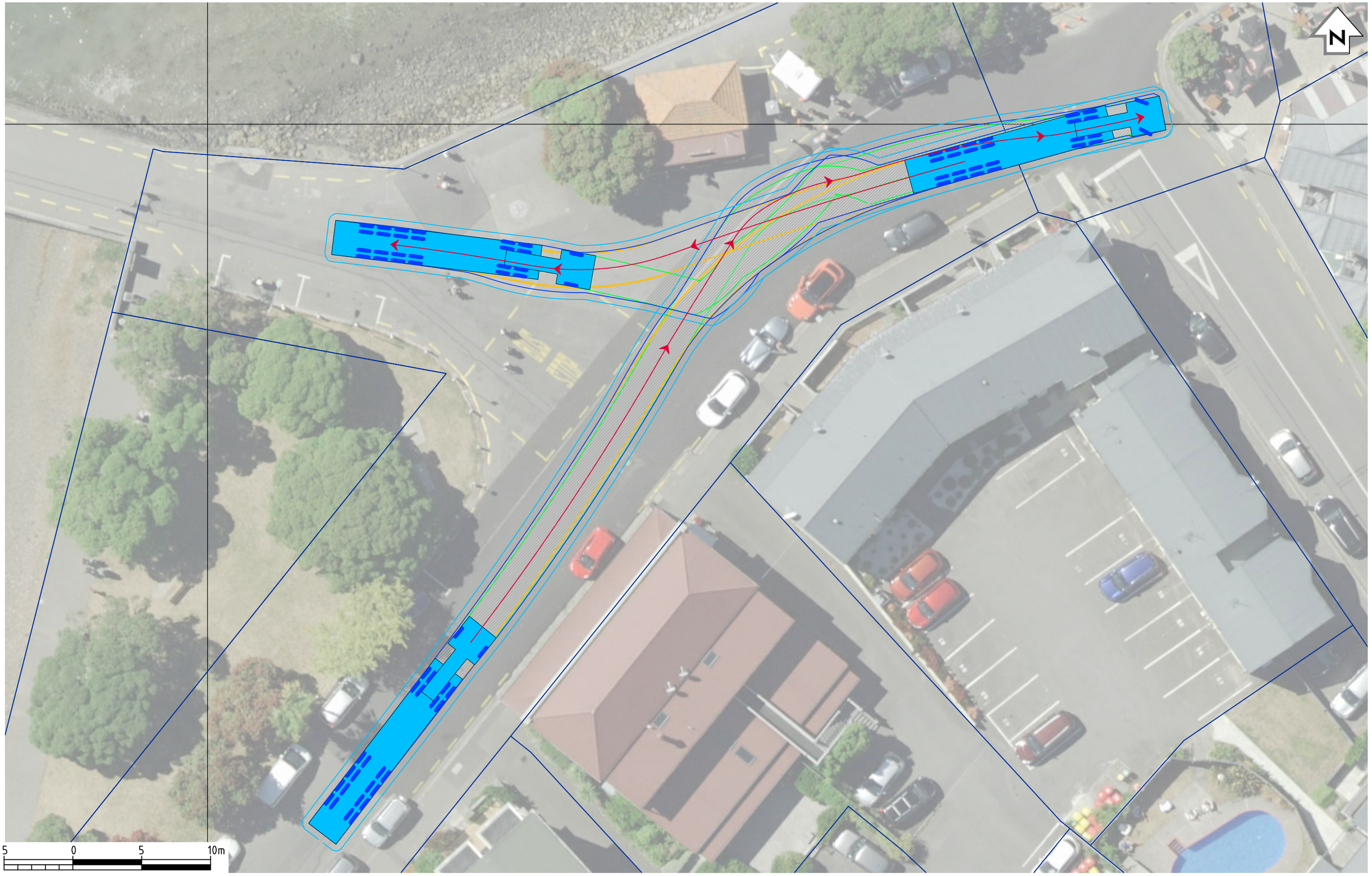
CLIENT LOGO

Stantec

SCALE: 1:250 @ A3
DRAWN: S JIANG
DATE: 28/11/2024
DESIGN: A METHERELL

FIGURE No. TR1.3
OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg



SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

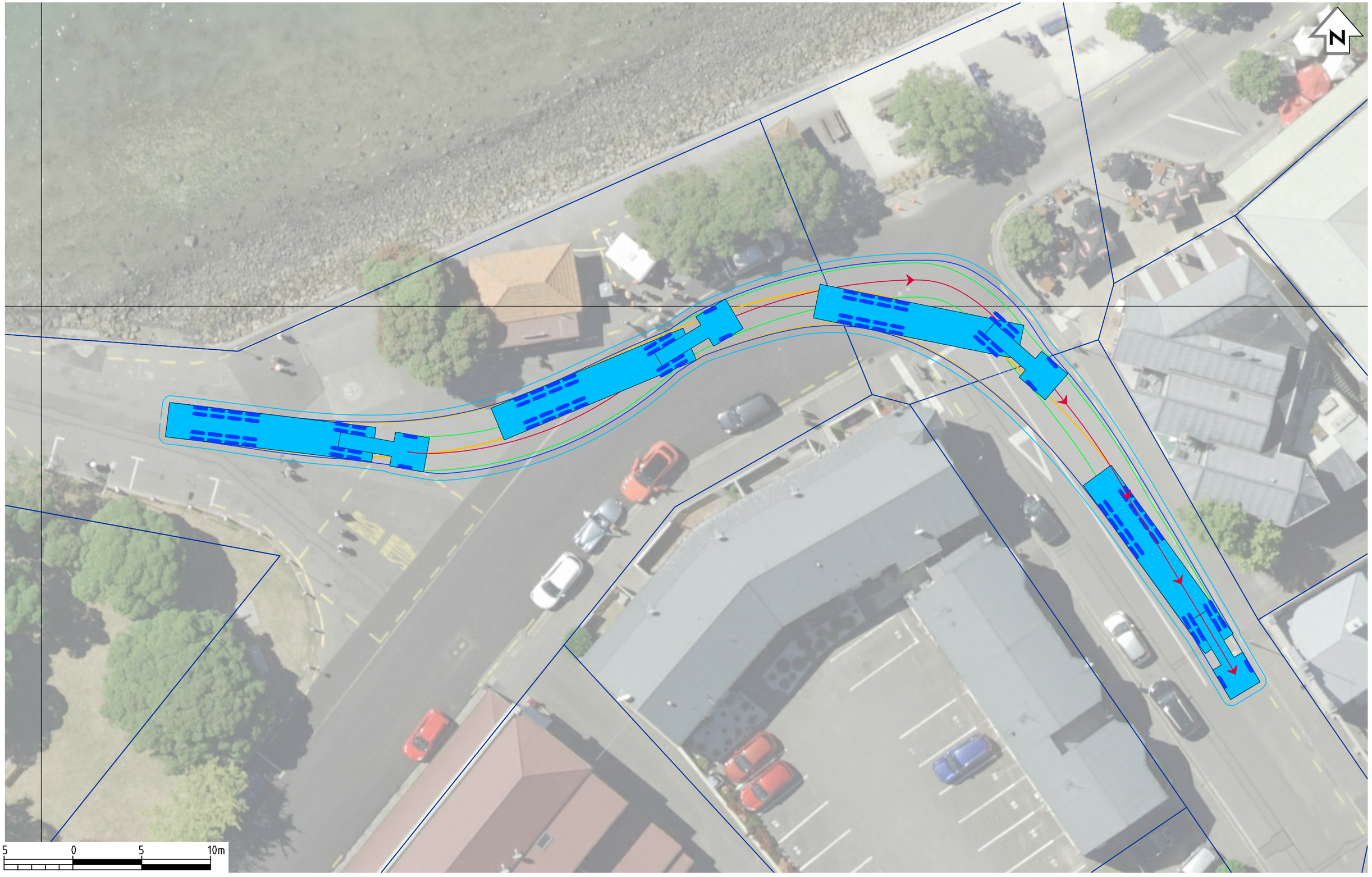
19m SEMI-TRAILER - MAIN WHARF CIRCULATION

CLIENT LOGO

Stantec

SCALE:	1:250 @ A3
DRAWN:	S JIANG
DATE:	28/11/2024
DESIGN:	A METHERELL
FIGURE No.	TR1.4
OF	A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg



SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

19m SEMI-TRAILER - RIGHT-TURN INTO CHURCH STREET FROM MAIN WHARF

CLIENT LOGO

Stantec

SCALE:	1:250 @ A3
DRAWN:	S JIANG
DATE:	28/11/2024
DESIGN:	A METHERELL

FIGURE No. TR1.5

OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg

SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICE TRACKING ANALYSIS

19m SEMI-TRAILER - LEFT-TURN OUT INTO RUE JOLIE FROM CHURCH STREET

CLIENT LOGO

Stantec

SCALE: 1:250 @ A3

DRAWN: S JIANG

DATE: 28/11/2024

DESIGN: A METHERELL

FIGURE No. TR1.6

OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg

SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

19m SEMI-TRAILER - RIGHT-TURN INTO CHURCH STREET FROM RUE JOLIE

CLIENT LOGO

Stantec

SCALE: 1:250 @ A3

DRAWN: S JIANG

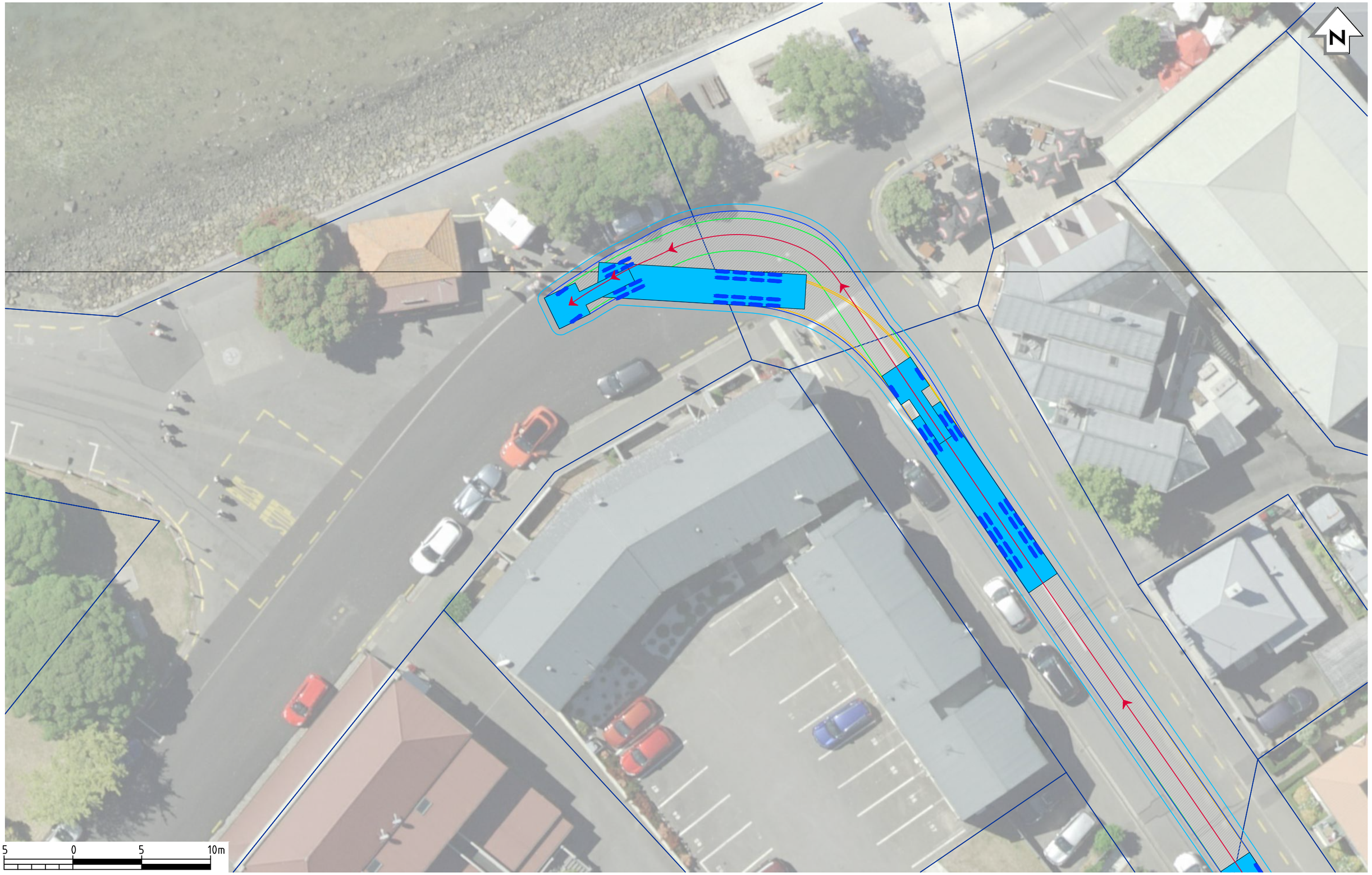
DATE: 28/11/2024

DESIGN: A METHERELL

FIGURE No.

OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg



SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

19m SEMI-TRAILER - LEFT-TURN OUT INTO BEACH ROAD TOWARDS MAIN WHARF

CLIENT LOGO

Stantec

SCALE: 1:250 @ A3

DRAWN: S JIANG

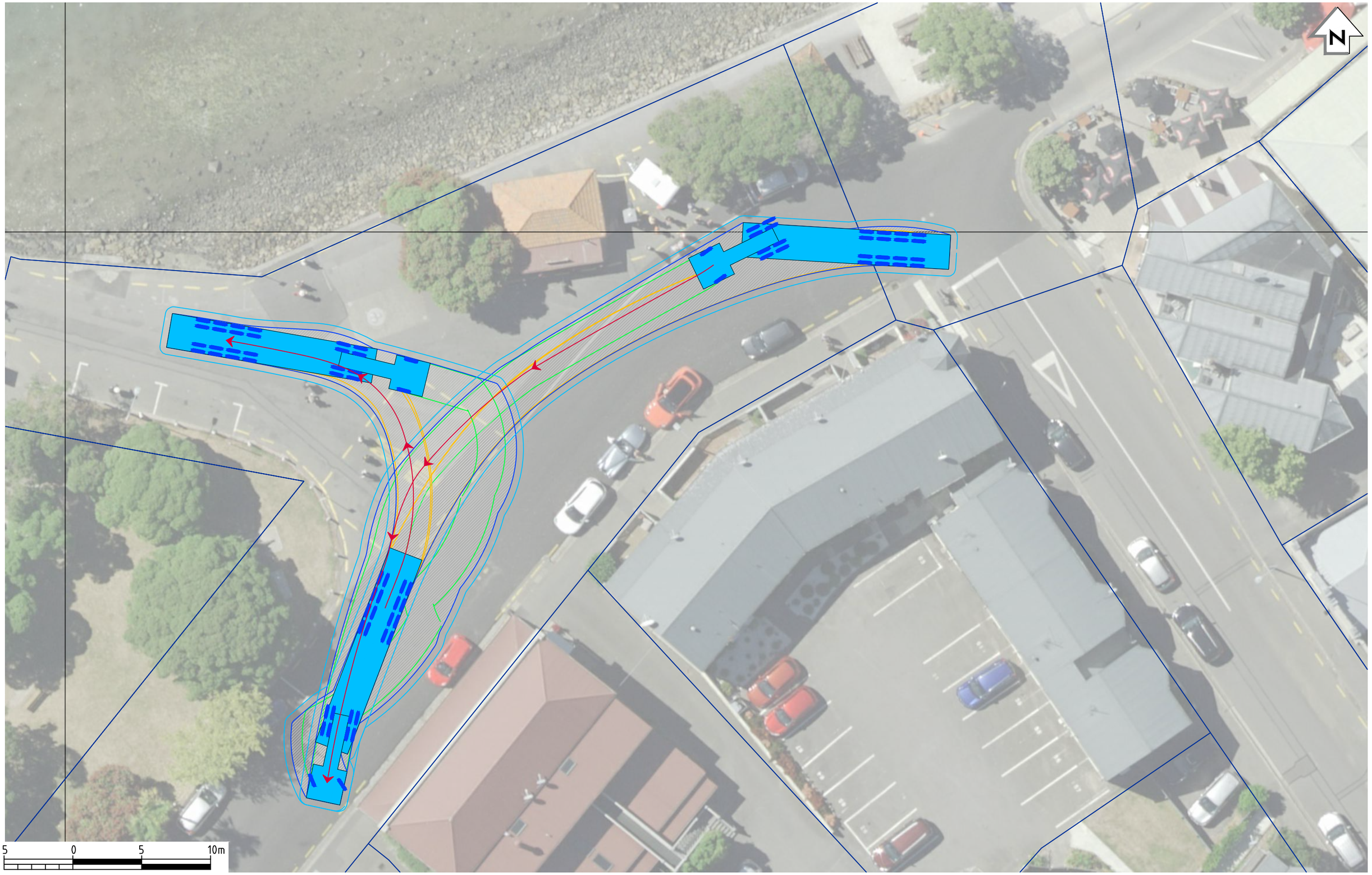
DATE: 28/11/2024

DESIGN: A METHERELL

FIGURE No. TR2.2

OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg



SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

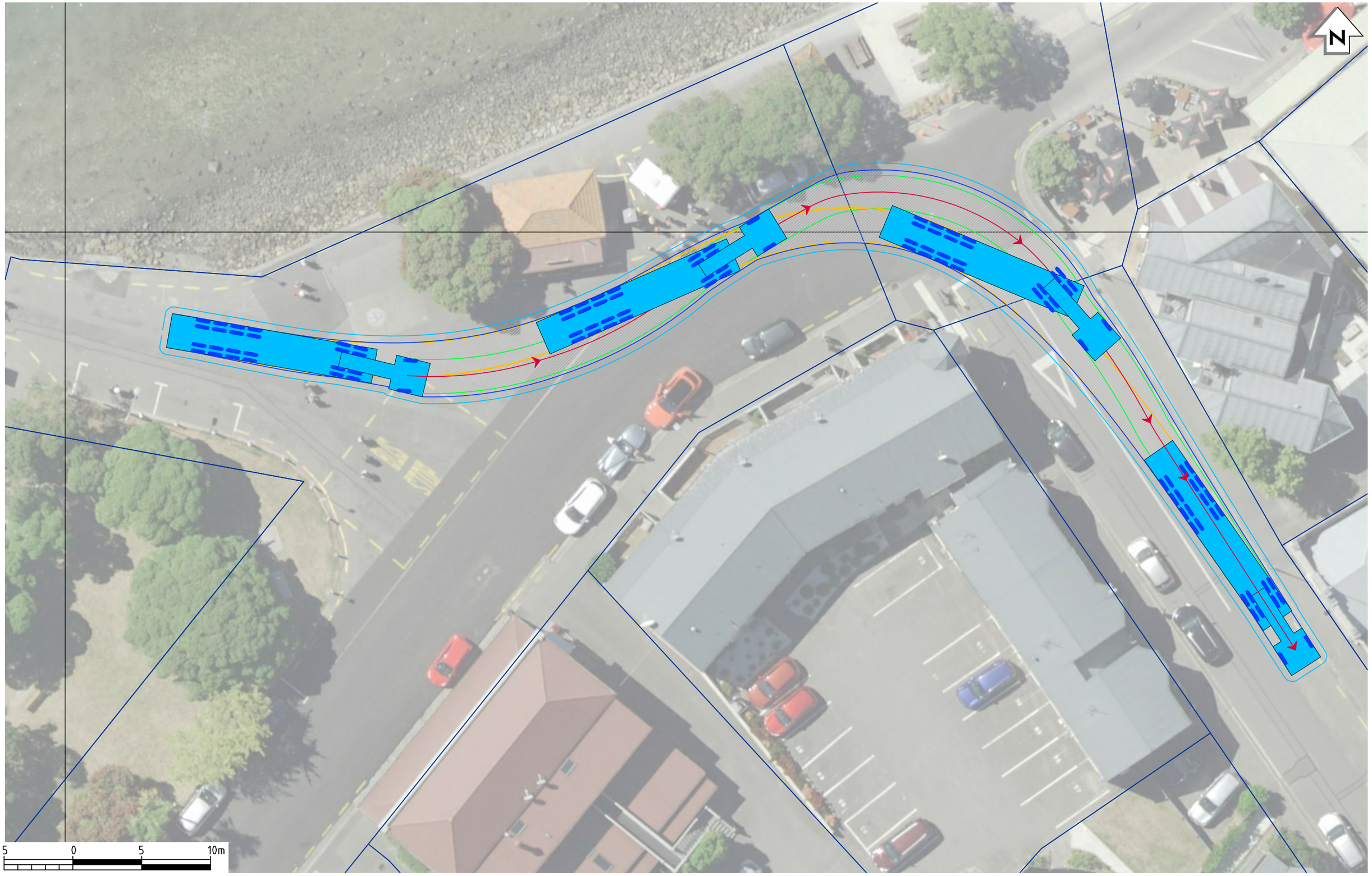
19m SEMI-TRAILER - MAIN WHARF CIRCULATION

CLIENT LOGO

Stantec

SCALE:	1:250 @ A3
DRAWN:	S JIANG
DATE:	28/11/2024
DESIGN:	A METHERELL
FIGURE No.	TR2.3
OF	A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg



SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

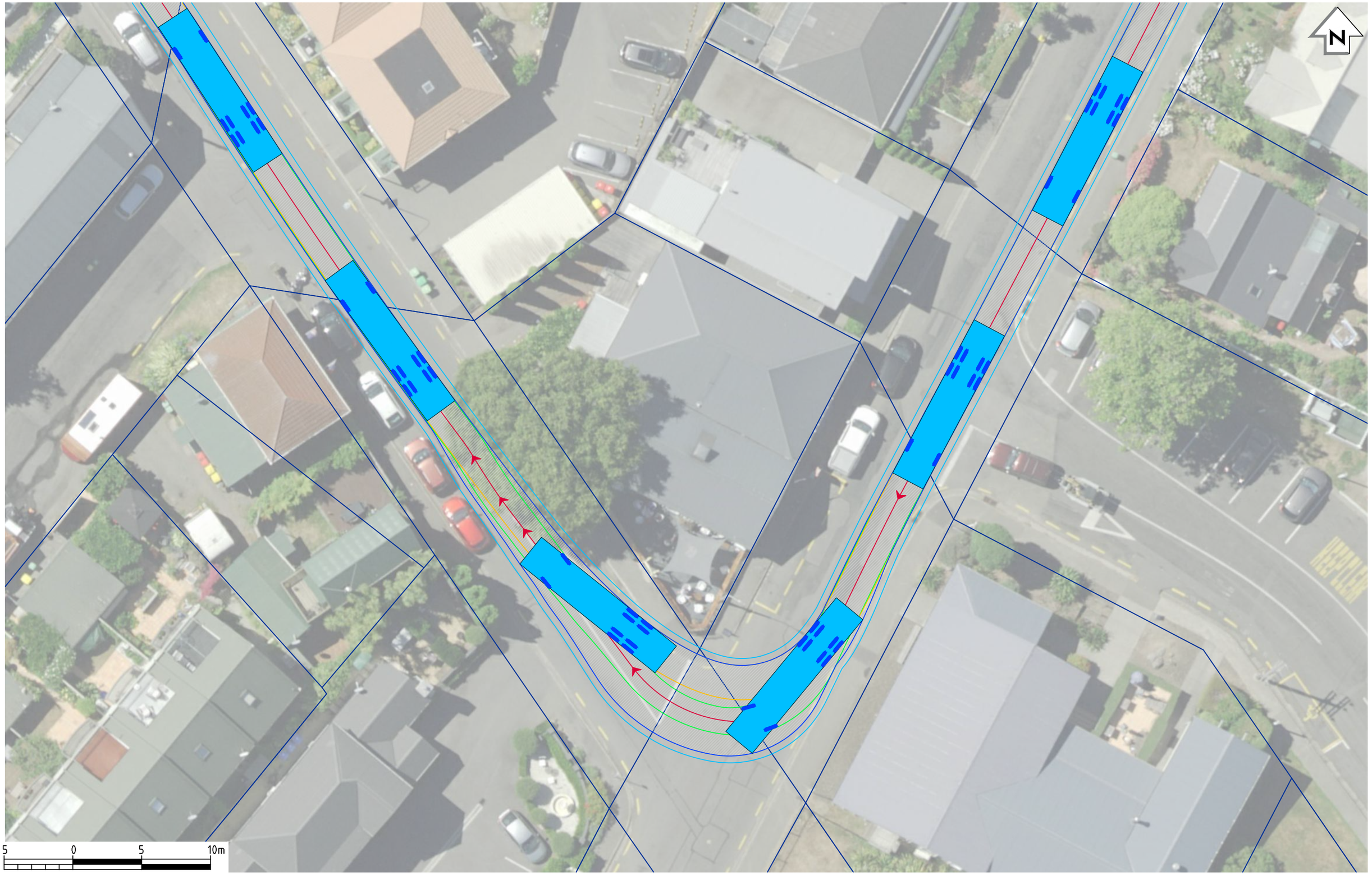
19m SEMI-TRAILER - RIGHT-TURN INTO CHURCH STREET FROM MAIN WHARF

CLIENT LOGO

Stantec

SCALE:	1:250 @ A3
DRAWN:	S JIANG
DATE:	28/11/2024
DESIGN:	A METHERELL
FIGURE No.	TR2.4
OF	A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg



SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

12.6m TOUR COACH - RIGHT-TURN INTO CHURCH STREET FROM RUE JOLIE

CLIENT LOGO

Stantec

SCALE:	1:250 @ A3
DRAWN:	S JIANG
DATE:	28/11/2024
DESIGN:	A METHERELL
FIGURE No.	TR3.1
OF	A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg

SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

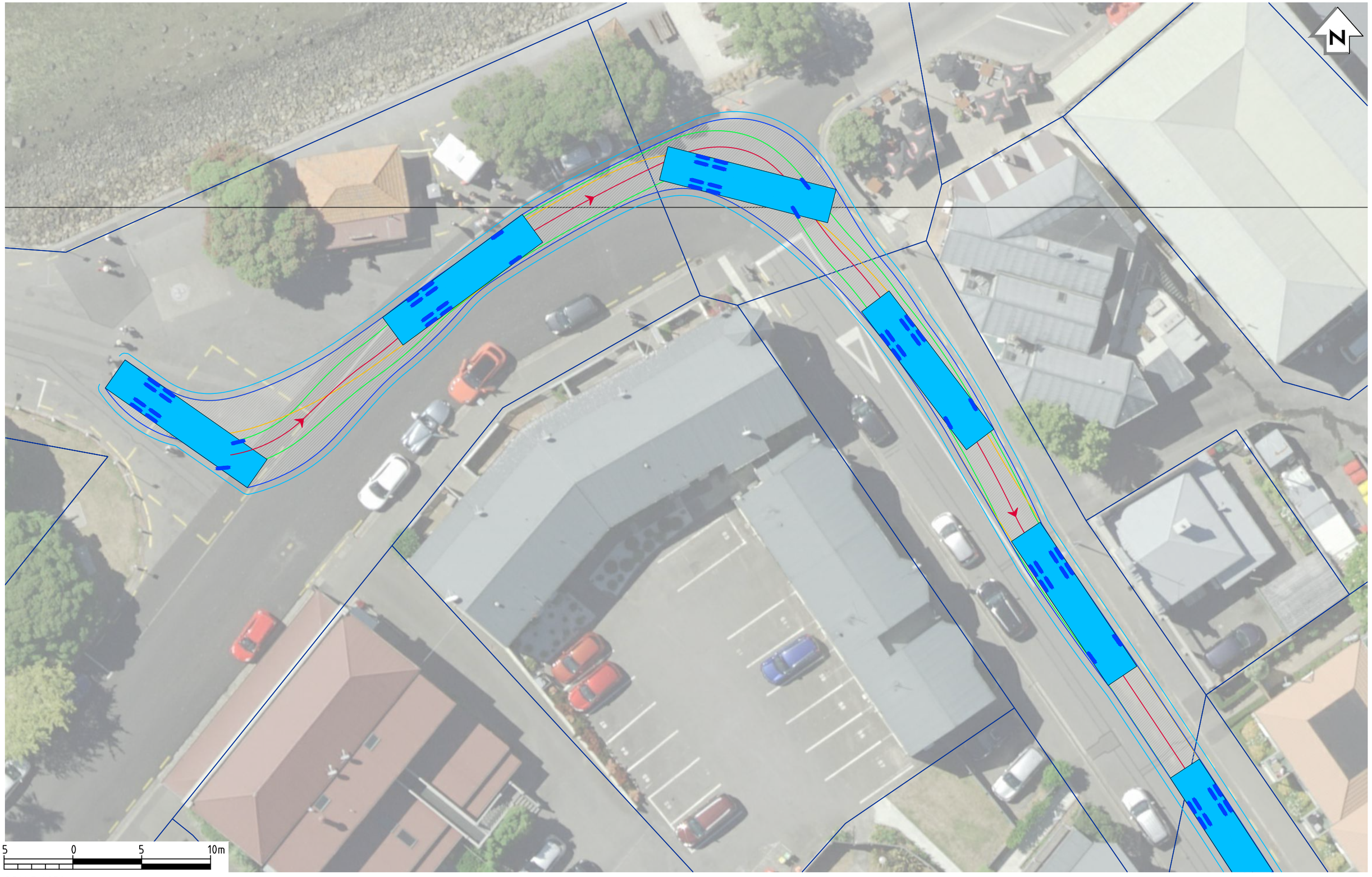
12.6m TOUR COACH - LEFT-TURN OUT INTO BEACH ROAD TOWARDS MAIN WHARF

CLIENT LOGO

Stantec

SCALE:	1:250 @ A3
DRAWN:	S JIANG
DATE:	28/11/2024
DESIGN:	A METHERELL
FIGURE No.	TR3.2
OF	A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg



SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICLE TRACKING ANALYSIS

12.6m TOUR COACH - MAIN WHARF CIRCULATION

CLIENT LOGO

Stantec

SCALE: 1:250 @ A3
DRAWN: S JIANG
DATE: 28/11/2024
DESIGN: A METHERELL

FIGURE No. TR3.3
OF A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg

SCALE 1:250

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	11/24	SJ	FOR INFORMATION ONLY

AKAROA WHARF REPLACEMENT

VEHICE TRACKING ANALYSIS

12.6m TOUR COACH - LEFT-TURN OUT INTO RUE JOLIE FROM CHURCH STREET

CLIENT LOGO

Stantec

SCALE:	1:250 @ A3
DRAWN:	S JIANG
DATE:	28/11/2024
DESIGN:	A METHERELL
FIGURE No.	TR3.4
OF	A

\\Nz4100-ppfss01\shared_projects\310203418\240.2406 Akaroa Wharf (placeholder)\Drawings\310203418 (240.2406)_C001.dwg

Appendix C Material Delivery & Logistics Schedule

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
Construction Phase																																																																	
Mobilisation & Site Setup																																																																		
Seawall & Approach																																																																		
Demolition																																																																	
Wharf Construction																																																																	
Pontoons & Fendering																																																																	
Furniture & Balustrade																																																																	
Services																																																																		
Whariki & Tau Rapa																																																																	
Demobilisation																																																																	
Site set up																																																																	
Area's A and B fencing and security			2																																																															
Areas F and G Facilities + laydown + dredging			8																																																														
Welding set up at Area G																																																																	
Removal of site laydown areas and offices																																																																	
Construt RORO Ramp at Boat Ramp			50	50	50																																																													
Mobilisation & Material Delivery																																																																	
Mobilise 100T Yard Crane			4																																																														
Mobilise 100T Marine Crane			4																																																														
Mobilise 30T Excavator & Demolition Material			1																																																														
Mobilise 100T Landside Crane				4																																																													
Mobilise Staging & Temporary Works Material (80T)					8																																																											
Deliver Steel Casing (215T)						13																																																										
Deliver Headstocks to Site (390T)														5	5	5	5	2																																																
Deliver Prestressed Panels to Site (945T)																							16	16	16	16	16	8																																			
Landside Demolition Works																																																																
Break out Concrete causeway 320m3							18																																																									
Remove Hardfill 450m3								25																																																								
Demolition Buildng 1 (280sm2) - 130T							10																																																									
Demolition of Building 2 (160sqm) - 75T							6																																																									
Demolition of Wharf - Carting of Material Offsire - 450T																10	10	10	8																																															
Landside Approach																																																															
Import and Place 400m3 of ballast and geogrid					20	25					20																																																					
Install 66m of Abutment Seawall & Backfill								10	25	25	25	25																																																					
Substructure (Piles and Pier heads) - Landside																																																															
Substructure - Zone 1																																																														
Bent 1 & Bent 2														1																																															
Bent 3 to Bent 4															3	1																																														
Bent 5 to Bent 6																	3		1																																											
Bent 7 & Bent 8																				3		2																																								
Grillage install																							3																																							
Landside - Bent Cycle - Install Staging, Beams Rear Decks																																																													
Bent 9																							2																																							
Bent 10																								3																																					
Bent 11																								2																																					
Bent 12																								3	2																																			
Bent 13																									3																																			
Bent 14																										3		4																															
Bent 15																											3	4																														
Bent 16																													3	4																												
Bent 17																															3	4																										
Bent 18																																	3		4																						
Bent 19																																		3		4																				
Bent 20																																			3			4																
Bent 21																																						4															
Bent 22																																																						
Deck Pours - Zone 1 to 4																																																												
Deck Pour bents 1-4 (192m2)																										8																																	
Deck Pour bents 4-7 (192m2)																												8																													
Deck Pour bents 7-10 (390m2)																															16																										
Deck Pour bents 10-13 (390m2)																																		16																						
Deck Pour bents 13-16 (192m2)																																					8																			
Deck Pour bents 16-19 (192m2)																																							8																	
Deck Pour bents 19-22 (192m2)																																									8															
Furniture																																				3																				
Whariki & Tau Rapa																																																													
Pavement																																																																	

Vehicle Movements			CHC-AKA	AKA-CHC	DUV-AKA	LD to SITE	BOAT RAMP
Semi/Flat Deck Truck	215		195			20	
Concrete Truck	115		115				
Prime Mover & Low Loader	26		13	13			
6-8Wheeler or Artic Truck	565			97	168		300

Stantec

Stantec is a global leader in sustainable architecture, engineering, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.