Wellington International Airport Limited Southern Seawall Renewal Project

Draft Construction Traffic Management Plan

Stantec New Zealand

Prepared for:
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This report has been prepared for Wellington International Airport Limited (“WIAL”), to inform the Expert Consenting Panel's consideration of WIAL’s application for approvals under the Fast-track Approvals Act 2024 and any subsequent regulatory processes.

Stantec has assumed all information received from Wellington International Airport Limited (the “Client”) and third parties in the preparation of the Report to be correct. The report is intended solely for use in connection with WIAL’s application for approvals under the Fast-track Approvals Act 2024 and any subsequent regulatory processes, and 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 unauthorised use or reliance is at the recipient’s own risk.

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1 Introduction

Stantec has been engaged by Wellington International Airport Limited (**"WIAL"**) to prepare a draft Construction Traffic Management Plan (**"CTMP"**) in relation to the proposed Southern Seawall Renewal (**"the Project"**).

This draft CTMP details the proposed temporary traffic management (**"TTM"**) measures to be employed during the construction of the Project. A final CTMP and site-specific traffic management plans (**"SSTMP"**) will be prepared at a later date (post consent) when construction methodologies and timelines are further refined.

Accordingly, the construction traffic management considerations set out in this report include the following:

- existing road network, traffic environment and traffic volumes;
- TMP approval process;
- construction operations and traffic, including details on construction sequencing, working days and hours, vehicle types and truck routes;
- construction access;
- traffic management scenarios;
- construction traffic modelling and traffic effects;
- parking, including staff and construction vehicles;
- communication and liaison;
- monitoring and mitigations; and
- training and awareness.

This report is provided as part of a suite of documentation for the consenting of the Project, and as such it should be read in conjunction with the other relevant reporting including the Transportation Assessment Report and Construction Methodology Report.

1.1 Purpose of this CTMP

The purpose of this CTMP is to ensure that traffic operations during the Project can occur safely and to ensure that the following traffic management objectives are met:

- Road users and traffic flows in the Project area are not unduly impeded by construction operations;
- The surrounding road network and properties do not unduly have access restricted, and are kept informed of all construction traffic management matters;
- Ensuring the safety of the public where the need to interact with the Project area or with Project traffic flows;

- Ensuring the safety of site employees associated with the Project; and
- Achieving compliance with the Health and Safety at Work Act.

1.2 Project overview

The Project will overlay and extend the existing seawall to help safeguard the long-term operation of the Wellington International Airport (**"the Airport"**) against natural hazards, increase the Airport's resilience to climate change, and reduce the (otherwise increasing) maintenance demands of the existing seawall.

The Southern Seawall not only ensures the ongoing protection of the Airport – a nationally and regionally significant piece of infrastructure – but also protects a range of Wellington City Council assets, including Wellington City's main wastewater connection to the Moa Point Wastewater Treatment Plant and Moa Point Road itself.

The Airport's other coastal defences (the Western Seawall and the Lyall Bay Breakwater) also require replacement, but WIAL intends to take a staged approach to the works. As such, this CTMP relates only to the Southern Seawall replacement, which is the first stage of the coastal defences works.

The Project is comprised of seven key elements, described below, and shown in Figure 1-1.

1. Establishment and use of the Miramar Golf Course Construction Yard (**"MGC Yard"**). Site establishment works, including fencing and bulk earthworks will be undertaken to establish the MGC Yard. Once established, the yard will be used for various construction activities, most notably, for the storage of rock and armour units to be used in the Southern Seawall replacement.

2. Clearance and use of the George Bolt Street Construction Yard (**"George Bolt Yard"**). The existing storage yard on George Bolt Street will be cleared, and the hangar on site demolished, before being used for general storage of rock and armour units, construction plant and equipment, as the site of a workshop and staff facilities, and other miscellaneous construction material storage associated with the Project.

3. Establishment and use of the Moa Point Construction Yard (**"Moa Point Yard"**), and site facilities at the corner of Stewart Duff Drive and Moa Point Road. Site establishment works, including fencing, vegetation clearance and re-contouring will be undertaken to establish the Moa Point Yard. The location of the Moa Point Yard – directly adjacent to the Southern Seawall working face – is critical to ensure ready access to rocks and armour units as well as plant and equipment once works at Moa Point commence, thus reducing both risks associated with weather and sea state, and construction time.

4. Remediation of the Eastern Bank. The remediation works involve protection of the bank with rock. The rock protection provides a transition between the main Southern Seawall and the unprotected coastline further east, helping to reduce the active erosion of the existing bank. It will also help to support the Stage 2 Kororā Colony (refer to element 6 below).

5. Reconstruction of the Southern Seawall. The works involve overlaying the existing seawall with a layer of rock and re-used concrete units, and a layer of concrete armour units, excavation of the seabed and placement of rock to form the seawall toe, and associated works.

6. Creation of two kororā colonies to support kororā habitation and breeding. The new colonies are located on the landward side of Moa Point Road (Stage 1), and behind the Eastern Bank Remediation (Stage 2, once construction is complete). The Stage 1 Kororā Colony will be developed before removal of habitat in construction areas begins, allowing kororā to be relocated before their existing roost and nest sites are affected. The colonies will provide shelter from the wind, kororā nestboxes and vegetation. Additionally, the colonies will be fenced to protect kororā from attacks by dogs and disturbance by people.

7. Supply of rock and armour units. Due to the number / volume and specific composition of rock and armour units required for the Project, a gradual programme of rock and armour unit supply and storage will be undertaken. While it is anticipated that most of this material will be transported via road, access to a central city marine unloading point to support the importation of rock from the South Island may be needed.

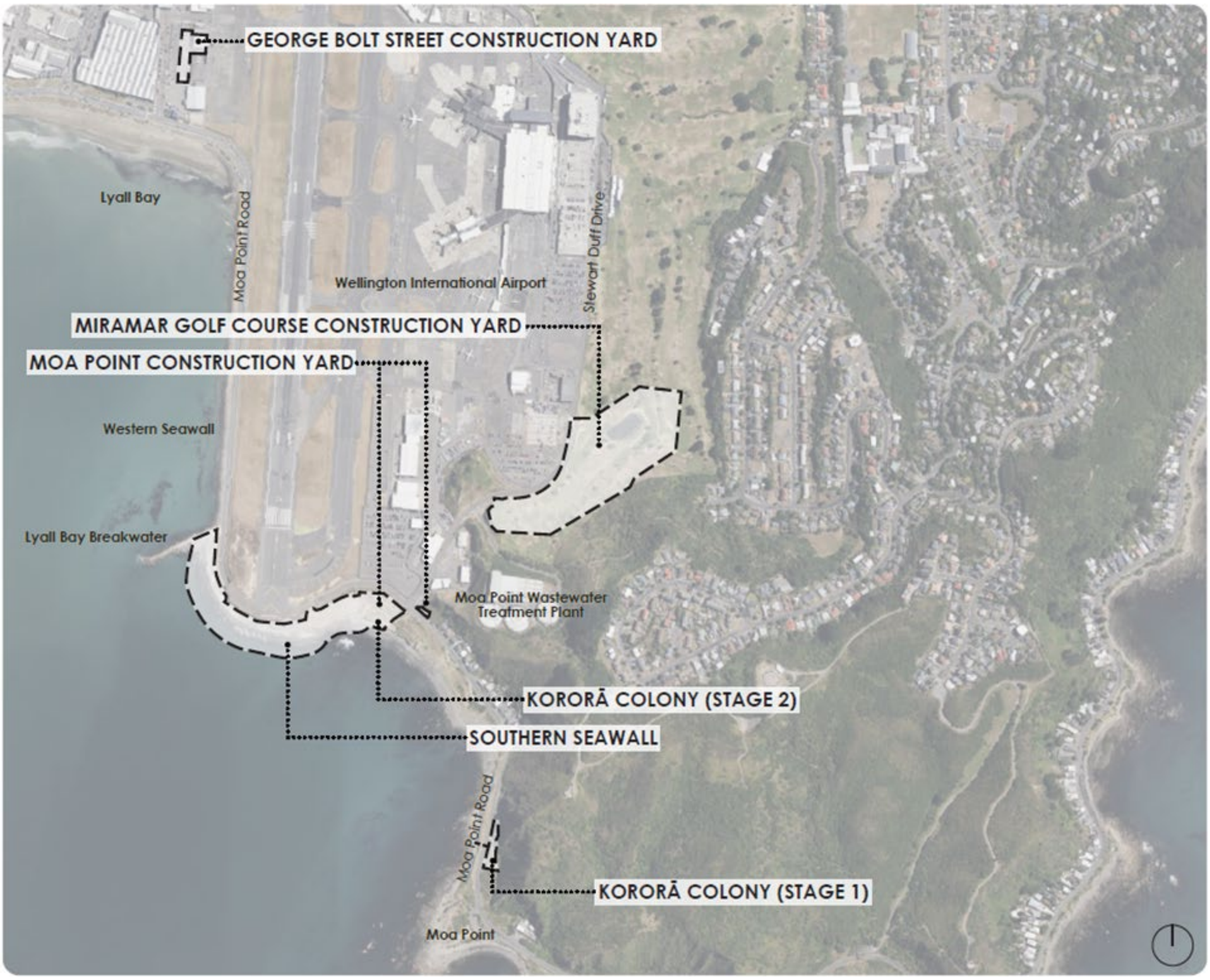

Figure 1-1: Proposed construction yard locations

1.3 Roles and responsibilities

All workers and visitors have a responsibility to ensure all tasks and activities are undertaken in accordance with the requirements of this CTMP.

Key personnel in the project team with specific roles and responsibilities in relation to this plan are listed in Table 1-1.

Table 1-1: Key roles and responsibilities

Role	Responsibilities
Project Manager	Overall responsibility for the project
Construction Manager	Responsible for the day-to-day construction operations
Interface Manager	Responsible for co-ordination of inner site works and interfaces between construction and transport / storage of rock and armour units.
Site Traffic Management Supervisor (STMS)	Implementing and managing the CTMP Arranging for the preparation and implementation of SSTMPs Ensuring that all TTM deployed for the project is maintained in a safe, acceptable and functional condition.

2 Existing road network and traffic environment

2.1 Road network

The Airport is well connected to the wider road network with direct access to State Highway (**"SH"**) 1 from the northern end of the airport precinct at the SH1 / Stewart Duff Drive / Broadway roundabout. In addition to the state highway network, a number of other key roads connect through the eastern suburbs, including the route around the south coast that provides access to the Southern Seawall site.

A map of both the immediate road network adjacent to the Airport, and the wider road network connecting to SH1, is illustrated in Figure 2-1 and Figure 2-2. SH1 is shown in orange.

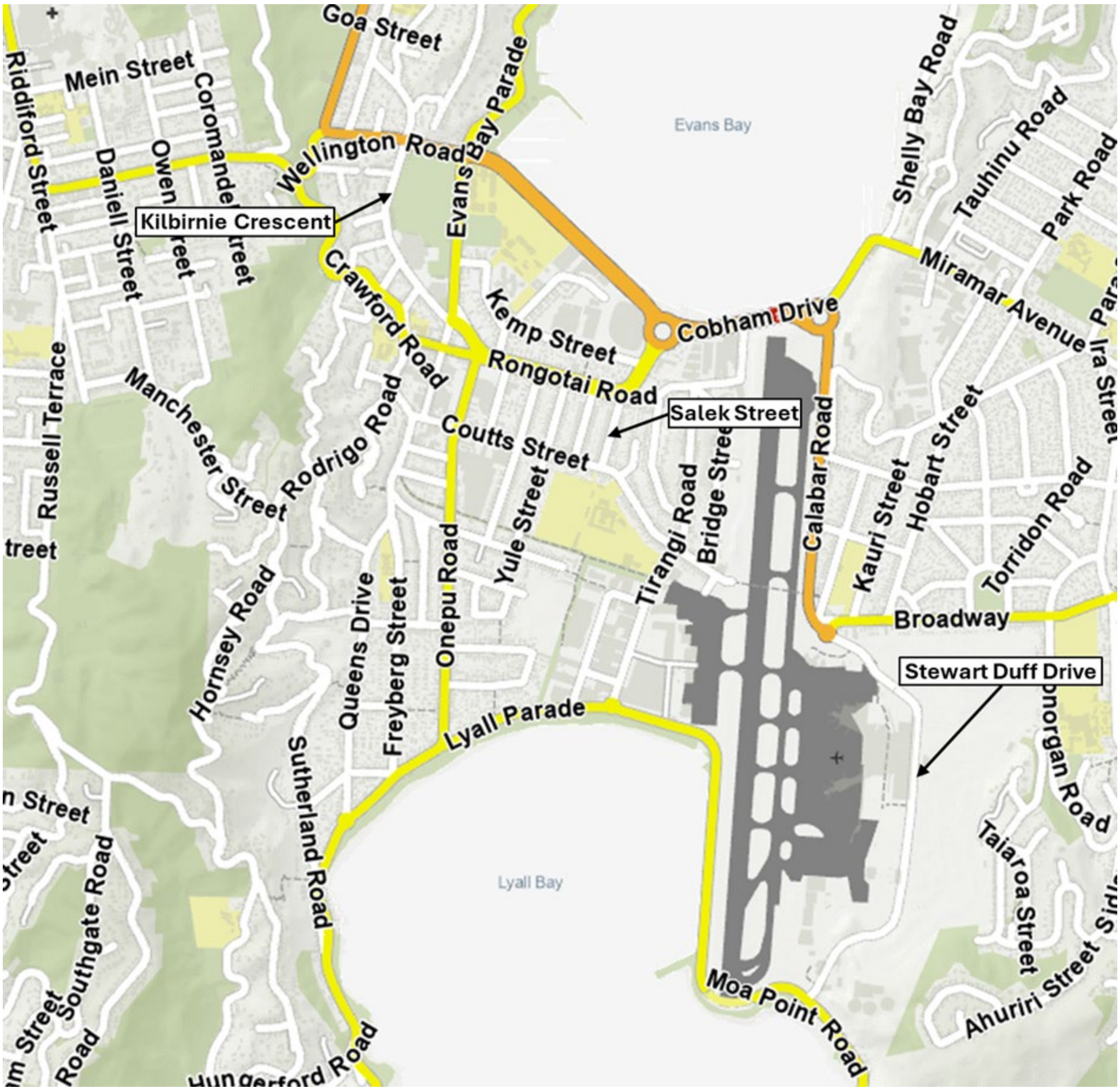

Figure 2-1: Immediate road network adjacent to the Airport

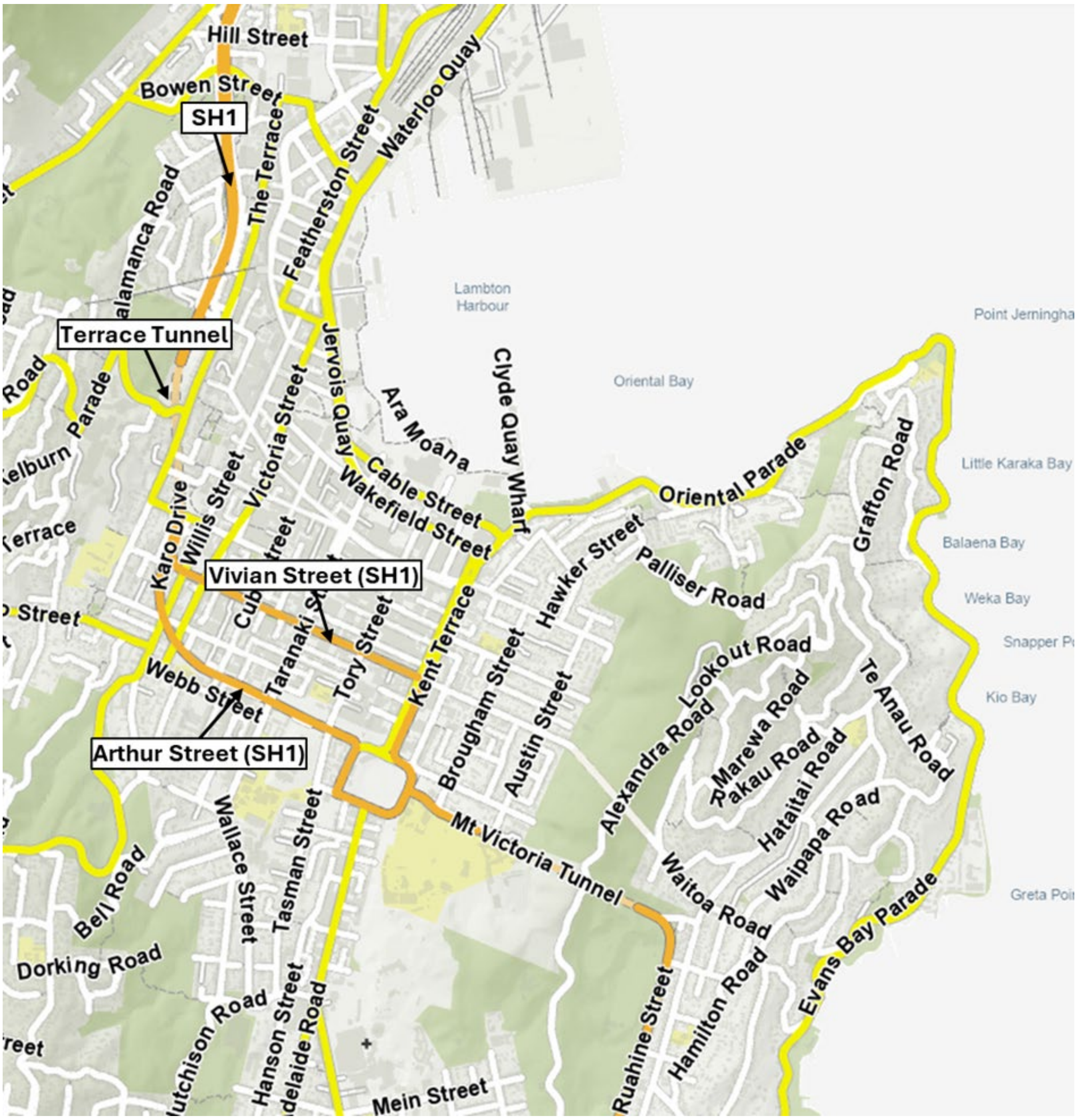

Figure 2-2: Wider road network connecting to SH1

SH1 is managed by the Waka Kotahi NZ Transport Agency (**"NZTA"**), Stewart Duff Drive is a private road (although the public have access) managed by WIAL and the other roads are managed by Wellington City Council (**"WCC"**).

Figure 2-3 illustrates the roading hierarchy for the eastern suburbs, as defined by the Wellington City District Plan (**"District Plan"**).

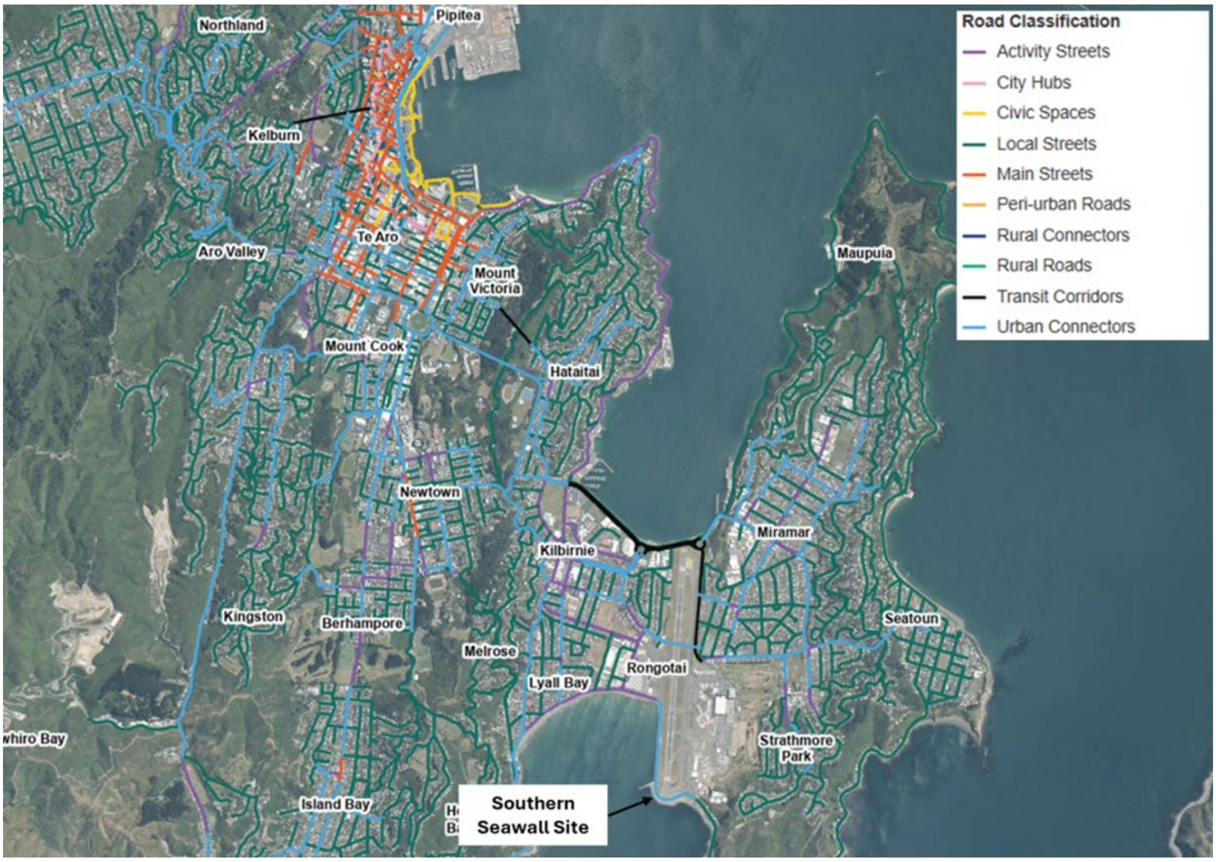

Figure 2-3: Roading hierarchy

As shown, SH1 is defined as a Transit Corridor and Urban Connector road between the Airport and the CBD/SH1 Motorway and has the predominant function of providing a high-standard limited access route.

Moa Point Road and Onepu Road, which together form the route around the south coast and provide access to the site, are classified as an Urban Connector road. Lyall Parade, some sections of Onepu Road, and Kilbirnie Crescent are classified as Activity Streets.

Oriental Parade and Evans Bay Parade are also classified as Activity Streets, with this route between the eastern suburbs and the city forming part of the published overdimension route (to avoid the Mt Victoria tunnel). These State Highway, Transit Corridors, Urban Connector roads and Activity Streets form the primary road network to/from the site.

Heavy construction equipment and over-dimensioned loads will be delivered to the site using SH1 and SH2 and other defined over dimensioned routes described at Section 4.

2.2 Occupation of public road corridor

The Project will largely be confined to the Southern seawall site and the three supporting construction yards; MGC Yard, George Bolt Yard, and Moa Point Yard.

However, works will likely be required in the WIAL road corridor to construct or upgrade vehicle crossings to access the MGC Yard and George Bolt Yard, and within the public road corridor to construct an access to the Moa Point Yard and to install the Kororā underpass crossing. With the exception of the Kororā underpass, which will require works over a narrow strip of the carriageway, the other works will typically be confined to the road shoulder and all will be of short duration. An appropriate SSTMP will be developed and submitted for approval to cover these works (as mentioned in Section 5).

Similarly, if it is identified that other works in the road corridor are required, an appropriate SSTMP will be developed and submitted for approval prior to the commencement of the works.

2.3 Traffic volumes

Daily traffic volumes for the routes in the vicinity of the site are detailed below, using available count data from WCC and NZTA's traffic monitoring system website.

A summary of daily traffic volumes for SH1 and the key local routes to the site, is set out in Table 2-1 below.

Table 2-1: Daily traffic volumes along key routes for the Project

Road	Road Section	Total	Northbound/ Eastbound	Southbound/ Westbound	AM Peak Hour	PM Peak Hour
SH1	North of Ngauranga	77,198	38,896	38,302		
SH1	North of Terrace Tunnel	43,311	23,205	20,106		
SH1	at Mt Victoria Tunnel	38,089				
Waterloo Quay	Hinemoa Street to Aotea Quay	32,126	16,229	15,897	2,424	2,684
Aotea Quay	North of Waterloo Quay	32,180	15,552	16,629		
Vivian Street	Willis Street to Cambridge Terrace	20,864	-	20,864	1,533	1,442
Karo Drive	Willis Street to Cambridge Terrace	25,856	25,856	-	1,902	2,065
Cobham Drive		34,250	16,037	18,213	2653	2672
Calabar Road	South of Cobham Drive	23,981	11,221	12,760		
Stewart Duff Drive	South of Calabar					
Stewart Duff Drive	North of Moa Point Road				263	297
Moa Point Road	Lyall Parade to Stewart Duff Drive	4,139	2,005	2,134	398	383
Moa Point Road	Stewart Duff Drive to Breaker Bay Road	1,960	966	994	124	173
Lyall Parade	Tirangi Road to Kingsford Smith Street	7,035	3,507	3,528	441	603
Onepu Road	Rongotai Road to Coutts Street	7,964	3,954	4,009	475	635

Road	Road Section	Total	Northbound/ Eastbound	Southbound/ Westbound	AM Peak Hour	PM Peak Hour
Kilbirnie Crescent	Childers Terrace to Tully Street	7,784	4,442	3,342	489	601
Tirangi Road	McGregor Street to Kingsford Smith Street	4,938	2,559	2,379	329	282

2.4 Road safety

A search of the NZTA's Crash Analysis System (CAS) has been undertaken for the key routes to and from the site south of Cobham Drive, as pictured in Figure 2-4. This search extent includes Calabar Road, Stewart Duff Drive, Moa Point Road, Lyall Parade, Onepu Road, Evans Bay Parade, and Kilbirnie Crescent.

Crashes within the most recent complete 5-year period between 2020 and 2024 were analysed.

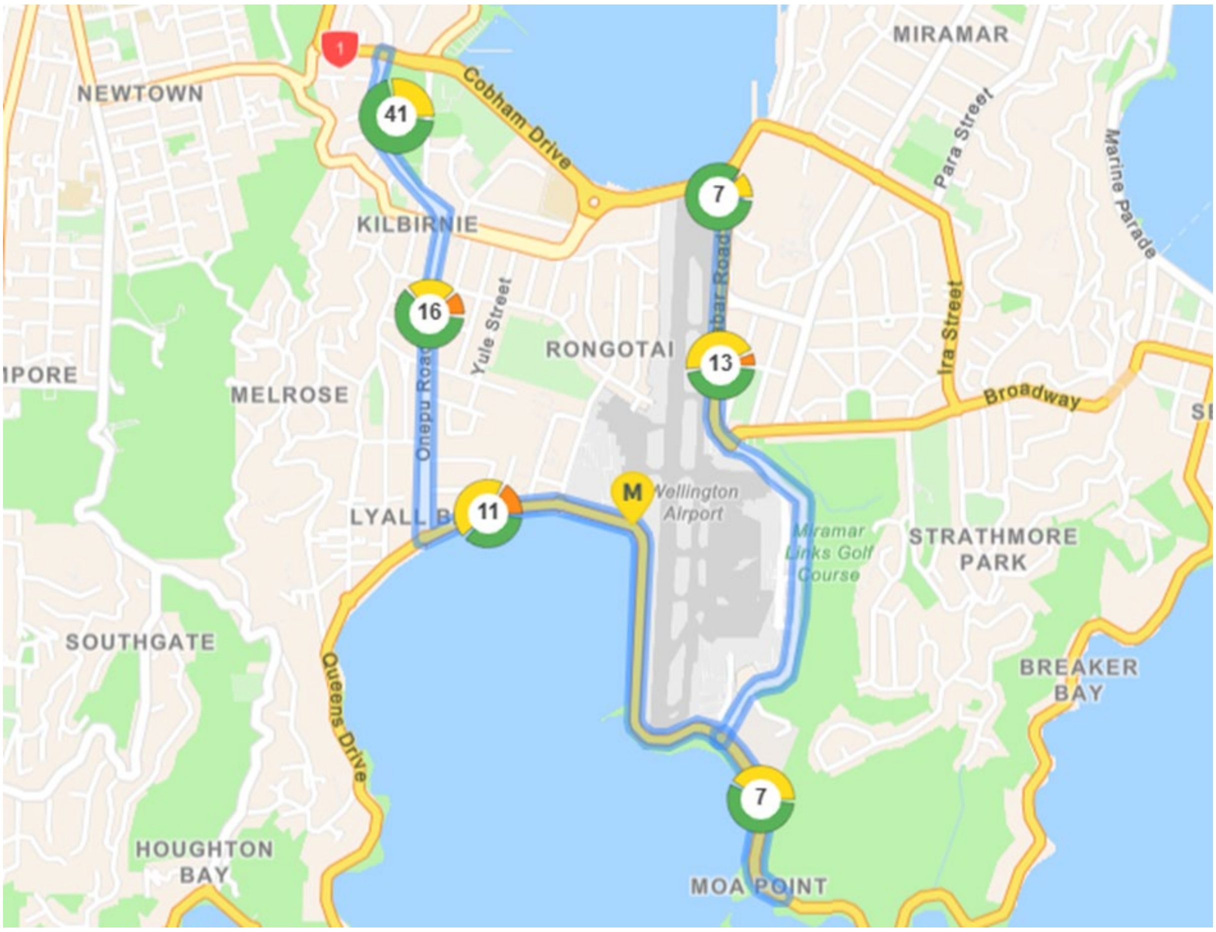

Figure 2-4: CAS Search extent

A total of 96 crashes was reported in this five year period. Of the 96 crashes, 38 resulted in an injury (4 serious injury crashes and 34 minor injury crashes).

Table 2-2 below summarises principal crashes, locations and typology.

Table 2-2: Crash Analysis for a five year period between 2020 and 2024

Crashes	**Total**	Right angle or right turn vs through	Merging/ Overtaking or lane changing	Rear End	Loss of Control	Vehicle vs Cyclist	Vehicle vs Pedestrian	Other
Cobham Drive/ Calabar Road roundabout	**6**		1	4	1			
Calabar Road btwn Cobham Drive & Caledonia Road	**4**		1		3			
Calabar Road / Caledonia Rd intersection	**4**	1	1	2				
Calabar Road btwn Caledonia Rd & Broadway	**4**		2	1	1			
Stewart Duff Drive	**2**				2			
Moa Point Drive btwn Stewart Duff Drive & 850m south of Stewart Duff Drive	**6**				3	1		2
Lyall Parade btwn Moa Point Drive & Tirangi Rd	**3**			1		1	1	
Lyall Parade btwn Tirangi Road & Onepu Road	**2**					2		
Lyall Parade/ Onepu Road intersection	**2**				2			
Onepu Road btwn Lyall Parade & Coutts St	**9**	1			1	2	2	3
Onepu Road/ Coutts Street intersection	**5**	3			1			1
Onepu Road btwn Coutts St & Rongotai Rd	**5**		1				3	1
Evans Bay Parade/ Rongotai Road/ Onepu Road intersection	**6**	3	1		1		1	
Kilbirnie Crescent/ Evans Bay Parade/ Bay Road intersection	**4**	1		1	1			1
Kilbirnie Cresent btwn Evans Bay Parade & Duncan Terrace	**3**						1	2
Kilbirnie Crescent/ Duncan Terrace intersection	**5**		2	1	1	1		

Crashes	**Total**	Right angle or right turn vs through	Merging/ Overtaking or lane changing	Rear End	Loss of Control	Vehicle vs Cyclist	Vehicle vs Pedestrian	Other
Kilbirnie Crescent btwn Duncan Terrace & Wellington Road	**5**	1		1	1		1	1
Kilbirnie Crescent/ Wellington Street/ Hamilton Road	**21**	9	6	5		1		

In general, the crash types are consistent with what would be expected in a busy urban/ suburban area, with the principal crash types being collisions between right turning and through vehicles (~20%), rear-end collisions (17%) and merging/ lane-changing (16%).

Six crashes involved a heavy vehicle, but the majority of these involved buses. Only one crash involved a truck. This crash occurred at the Coutts Street/ Onepu Road intersection, where a truck on Coutts Street lost control while turning and struck a parked vehicle.

Nine vehicle versus pedestrian and seven vehicle versus cyclist crashes were reported, of which six resulted in injury. These injury crashes included one which was identified as an intentional event due to road rage, and another was due to a cyclist's medical event.

Key factors/ causes in the vehicle versus cyclist crashes were:

- Vehicle driver being distracted
- Car door opened into the path of cyclist
- Cyclist being struck by a u-turning vehicle

Of the nine pedestrian incidents, two involved a pedestrian under 18 years old, two pedestrians were over 70, with the remaining five being between 18-70 (one of these was noted as having a physical disability). Neither of the incidents involving the under 18 pedestrians occurred at a time corresponding to the start or end of the school day. Key factors/ causes in the vehicle versus pedestrian crashes were

- Failure to give way (including at driveways)
- Distraction
- Driving under the influence of alcohol or other medical factors

A common theme in the pedestrian and cyclist crash incidents is driver distraction/ lack of awareness of other road users, and a failure to give way.

Compliance with road rules and being alert for the behaviour and actions of other drivers would be fundamental skills for a professional driver. Nonetheless, it is recommended that the use of such skills is emphasised during induction and toolbox meetings for site staff. Similarly, the need to avoid distractions and being alert for more vulnerable road users (pedestrians and cyclists) should be part of core competencies for professional drivers but again will be emphasised at toolbox meetings.

The intention with the proposed truck routes is that they utilise arterial roads as much as practicable and turning movements (apart from to/ from site accesses) occur at intersections. Right turn movements typically occur at roundabouts or signalised intersections.

Turning manoeuvres occur at intersections under priority or traffic signal control. It is proposed that warning signage is installed at the Lyall Parade/ Onepu Road and Moa Point Road/ Stewart Duff Drive intersections to alert other roads users to truck movements.

In summary and as relevant to safety, the types of measures recommended to be implemented, as is common for projects of this nature, include:

- Site vehicles to enter and exit site access points in a forwards direction (where practical).
- Where reverse manoeuvres onto public roads are required, traffic control and management measures e.g. signage, spotters will be in place.
- Heavy vehicles will operate an orange flashing beacon or similar when slowing and entering site access points, and similarly when exiting a site and accelerating to traffic speed.
- Site access points will be clearly signposted.
- Where temporary driveways or protection over footpaths is installed, these will be ramped down to the existing footpath level to prevent a trip hazard to pedestrians.
- During the induction process site drivers will be reminded to be alert for pedestrians and cyclists when entering and exiting the site and when parking.
- Drivers not to stop in cyclist advance boxes at signalised intersections.
- Not using hand-held mobile phones while driving.
- Side running lights will be fitted to trucks.
- Using an orange flashing beacon to alert other road users when trucks are slowing to enter a site or picking up speed after turning out of site.
- Keeping loads covered will minimise the potential for dust/ grit / other debris to blow off from trucks, which may be a hazard or distraction for following drivers or cyclists.

Additional location or activity specific measures may be adopted as appropriate.

3 CTMP approval process

This CTMP is an overarching document covering the general scope, methodology and effects of the proposed works associated with the Project.

Detailed and focused SSTMPs will be prepared for specific area and stages of the works, setting out phasing of the traffic management operation, timeline and TTM to be used.

Submission of these SSTMPs to the appropriate Road Controlling Authority (**"RCA"**) for approval will occur following liaison with the RCAs, coordination with other projects, local network maintenance contractors, and other relevant stakeholders. No works, except emergency works, shall occur until the relevant SSTMP has been approved.

The development, deployment, and operation of the SSTMP will be monitored to identify opportunities to maximise efficiency, safety and co-ordination.

Further detail on potential TTM scenarios is included in Section 5.

4 Construction operations and traffic

4.1 Construction operations and sequencing

The Southern Seawall renewal is a large, multi-year project, with various external dependencies. Whilst the Project timeline will be dependent on lead times for sourcing construction materials, the availability of specialist plant, safe sea state operating conditions, weather conditions and the Airport's operational requirements, it will generally follow these broad timeframes:

- Progressive enablement works at the MGC Yard – up to 7 years;
- MGC Yard rock and armour unit storage and associated activities – 4 to 7 years;
- Establishment and use of the George Bolt Yard – up to 8 years;
- Establishment of the Moa Point Yard (excluding kororā management) – 6 months; and
- Southern Seawall construction and Eastern Bank Remediation – 24 to 30 months.

Elements of the construction programme will overlap; the overall construction programme will take approximately 6 to 8 years to complete.

The Stage 1 Kororā Colony – located on the landward side of Moa Point Road, south of the Airport – will be constructed early in the Project, in advance of the main seawall construction. This will allow for the relocation of kororā before habitat within the construction footprint is lost. The Stage 2 Kororā Colony will be constructed on the south-eastern part of the Moa Point Yard (following site demobilisation), on completion of the Southern Seawall. It will take approximately three months to construct each colony.

Upon completion of the Southern Seawall renewal, WIAL may commence the second stage of its coastal renewal works (i.e. the Western Seawall renewal). If this occurs, the MGC and George Bolt construction yards established for the Southern Seawall renewal will potentially operate for an additional two years before disestablishment and rehabilitation works. The western part of the Moa Point Yard may also be retained and continue to operate during Western Seawall works, while the eastern part of the yard will form Stage 2 of the Kororā Colony. However, activities associated with the Western Seawall renewal would be subject to a separate consenting process.

The construction workforce for the Project is expected to average between 20 – 30 people over the entire construction period, with short term peaks of up to 50 people. Construction activities – and consequently workforce numbers – are expected to peak at the commencement of the Southern Seawall reconstruction period.

Construction will be managed to maintain airport operations, minimise nighttime noise, and work around adverse weather and sea conditions. The Project will also appropriately manage constraints arising from sourcing, transporting and stockpiling the significant volumes of rock and Cubipods required to complete the seawall works.

4.2 Working days and hours

The location of the seawall site, immediately adjacent a busy operational airport on an exposed coastline presents one of the greatest logistical challenges to the Project. Whilst construction methods and equipment will be designed and selected to avoid penetrating the Airport's designated obstacle limitation surfaces (**"OLS"**) where possible, any works that will penetrate the OLS will necessarily have to be undertaken outside the Airport's core operating hours (generally between midnight and 6 am).

Operating hours are as follows:

- MGC Yard – The MGC Yard will be fully operational between the hours of 7:30am to 6pm Monday to Friday, and 7:30am to 6pm Saturday and Sunday. Between 6:30am and 7:30am and 6pm and 8pm on weekdays, HCV access will be restricted to Stockpile 4 only (furthest from the residential areas to north of the MGC Yard), with the remainder of the yard closed to heavy vehicles. Outside these hours, access to the yard will be limited to light vehicles, and will only be required if contractors need to gain access to equipment and / or facilities in the event of construction plant breakdown;

- George Bolt Yard – The George Bolt Yard is surrounded by land owned by WIAL. During yard establishment, operating hours will be Monday to Saturday 7am to 5pm. During the operational phase, the yard will operate 24 hours per day, 7 days per week; and

- Moa Point Yard – The Moa Point Yard will be established between 6am and 7pm, Monday to Saturday. During the stockpiling phase (prior to the commencement of seawall construction), rock and armour unit deliveries will be made between 6:30 am and 8pm on weekdays, and 7:30 am and 6:00 pm on weekends and public holidays. Once reconstruction of the Southern Seawall commences, the Moa Point Yard will operate 24 hours per day, 7 days per week, however no rock or amour units will be delivered from the MGC Yard between 8pm and 6am.

The Eastern Bank Remediation site will operate Monday to Sunday 6 am – 10 pm.

The Southern Seawall construction site will operate up to 24 hours a day, 7 days a week.

The works for the kororā colonies will be able to operate under the OLS, therefore, colony construction will occur between 7am and 5 pm Monday to Friday.

4.3 Construction yards

Three construction yards are proposed for the Project, which include the MGC Yard, George Bolt Yard, and the Moa Point Yard, with yard locations illustrated earlier in Figure 1-1.

4.3.1 MGC Yard

The MGC Yard (as shown in Figure 4-1 below) will be the primary storage yard for the Project. The MGC Yard will be used for stockpiling rock, storing small numbers of Cubipods and other materials and for storing plant and equipment. The yard will also include a site office and staff welfare facilities.

Construction materials will gradually be stockpiled at the MGC Yard over multiple years. The MGC Yard is expected to operate for around 7 years, with its operation potentially extended if required for the Western Seawall renewal works.

The MGC Yard will be established in advance of the seawall construction site, in order for WIAL to commence rock and armour unit stockpiling. The MGC Yard establishment works are expected to commence as soon as consent is granted and will take up to 7 years to complete progressively as storage area is required. The establishment phase will include the following enabling works:

- Implementation of sediment and erosion control measures including dust suppression irrigation lines, in accordance with the Erosion Sediment Control Plan (**"ESCP"**) and the associated Site Specific Erosion and Sediment Control Plan (**"SSESCP"**);
- Construction of reinforced concrete crossings at entrance and exit points;
- Installation of security fencing with specific controlled site entries and exits to Stewart Duff Drive;
- Installation of portable buildings for offices and amenities purposes, including connections to services such as power and water;
- Location and protection of existing services (including a sewer line, stormwater line and power supply cable), with services relocated as required;
- Relocation of existing pohutukawa where practicable;
- Stripping and stockpiling topsoil;
- Earthworks to recontour the site to a level surface, suitable for yard activities (excavated material will be carted to approved earthworks disposal and / or engineered fill sites);
- Installation of drainage works;
- Construction of all-weather (permeable granular) pavements; and
- All associated and ancillary activities.

Topsoil will be stockpiled in piles between 3 – 5m high. However, due to the existing contour of the site, the bulk of the excavated material will have to be disposed offsite. Where possible, excess cut material will be removed from site as backhaul to the rock deliveries. If this is not possible due to project scheduling, additional truck movements will be required.

Once the MGC Yard is no longer required, the site will be demobilised and disestablished by removing all construction facilities, including yard buildings on site.

The site will be left at a level grade and in a clean and tidy state. All landscaping undertaken to manage the effects of the Project will be retained and maintained until such a time that the area is further developed by WIAL.

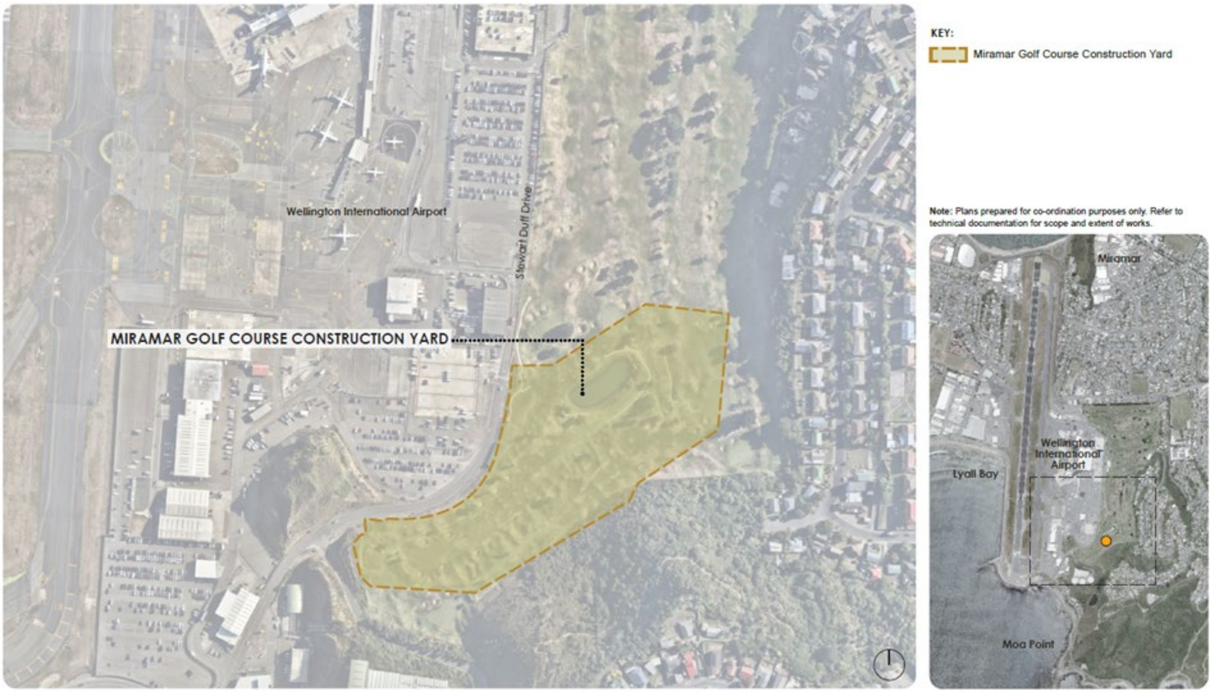

Figure 4-1: Plan of the MGC Yard

4.3.2 George Bolt Yard

The George Bolt Yard (as shown in Figure 4-2) includes a 2,500m^2 site that is currently used by WIAL for various storage activities, and a 1,000m^2 hangar site that will be demolished and made contiguous with the existing storage yard.

Figure 4-2: Plan of the George Bolt Yard

During the Project, the combined George Bolt Yard will be used to store construction material (including Cubipods), plant and equipment, as the site of a workshop and staff facilities, and for associated activities.

The George Bolt Yard is expected to take three months to establish and will operate throughout the life of the Project, with its operation to potentially be extended if required for the Western Seawall works.

The George Bolt Yard will house the primary maintenance facility for all construction plant and equipment, except for the large equipment used for placing rock and Cubipods at the seawall face, which will be serviced at the Moa Point Yard.

Enabling works will involve:

- Clearing the site of any materials and equipment currently stored there;
- Demolishing the existing hangar on site;
- Installation of Civil Aviation Authority compliant airside / landside security fencing (up to 2.5m high) with site specific entries and exits;
- Installation of temporary / portable workshop and ancillary equipment to support the maintenance of the plant and equipment required to construct the Southern Seawall;
- Installation of portable buildings for offices, amenities and maintenance purposes, including connections to services such as power and water;
- Location and protection of existing services, with services relocated as required; and
- Repairs to existing pavement as required.

Upon completion of the Project, temporary facilities will be removed and the site left in a tidy state. The site may continue to be used for armour unit storage or other airport related activities on the completion of the works.

4.3.3 Moa Point Yard

The Moa Point Yard, shown in Figure 4-3, will be the main operational storage area during the seawall construction works. It will be used for storing construction materials and general plant setup and maintenance facilities adjacent to the seawall workface. The Moa Point Yard will also be used for servicing large equipment that cannot easily be transported to the George Bolt Yard.

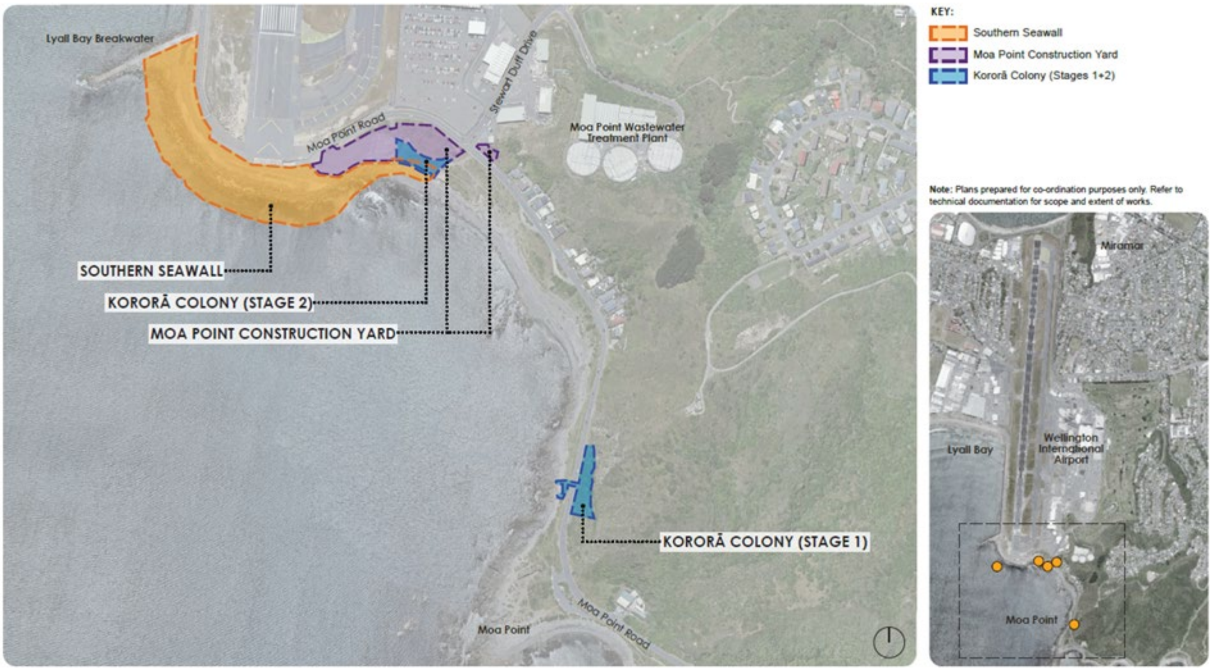

Figure 4-3: Plan of the Moa Point Yard

Site facilities will be installed at the corner of Stewart Duff Drive and Moa Point Road (as shown in the design plans attached as Part C to this application).

Once works commence on the Southern Seawall, rock, armour units and plant and equipment will be moved from MGC Yard to the Moa Point Yard during the day to provide a 'surge pile' at the working face. Some deliveries may also be made directly during the works to avoid doubling handling of material. These deliveries will occur between 6am and 10pm.

The Moa Point Yard is necessary to ensure there is ready access to rock, armour units and general plant and equipment to support the works, minimising overnight activity on the MGC Yard, improving construction efficiency (and thus helping to reduce the construction duration) and providing an immediately accessible area for plant to be moved to in the event of adverse conditions.

The Moa Point Yard will be passively used to support ongoing pre-reconstruction seawall maintenance and kororā removal from mid-2026. Formal site establishment will commence six months prior to the commencement of the Southern Seawall reconstruction and the public will be excluded from that time. It is anticipated that the Moa Point Yard will be used for 24 – 30 months to support the Southern Seawall reconstruction, with the operation of the western portion of the site potentially extended if required for the Western Seawall renewal works.

Enabling works are expected to take up to 6 months and will involve the following activities:

- Installation of chain wire security fencing (up to 2.5 m high) with site specific entries and exits;
- Implementation of erosion and sediment control measures, in accordance with the ESCP (included in Part C and G of these application documents);

- Installation of portable “Satellite” buildings for offices, amenities and maintenance purposes, including connections to services such as power and water (by intersection of Moa Point Road and Stewart Duff Drive);
- Location and protection of existing services (including stormwater and wastewater lines), with services relocated if required;
- Stripping and stockpiling topsoil (where it is present), and large plant relocation (for example, harakeke) where practicable;
- Earthworks to recontour the site to a level surface, suitable for yard activities. (If possible, all material will be used for levelling on site, however, if any material was found to be unsuitable for re-use, it would be removed and disposed at an appropriately authorised disposal site). Once the site has been recontoured, clay capping material may be brought in and placed to cover existing historic fill if required;
- Installation of drainage;
- Levelling of area and contouring edge of wave trap for construction access;
- Construction of all-weather (granular, permeable) pavements;
- Installation of reinforced concrete vehicle entrances at site entrance and exit; and
- All associated and ancillary activities.

No earthworks or recontouring are proposed for the site at the corner of Stewart Duff Drive and Moa Point Road.

The western part of the Moa Point Yard may be retained for use during the Western Seawall works. Demobilisation and removal of the western part of the Moa Point Yard, including removal of temporary facilities and reinstatement where relevant, will occur once the reconstruction of the Western Seawall (which is to be consented at a later date) is completed. The western part of the yard will be returned to a level, grassed condition, similar to present. If reconstruction of the Western Seawall does not proceed, the demobilisation and disestablishment activities will be completed at the end of Southern Seawall works.

The eastern part of the Moa Point Yard will be disestablished upon completion of the Southern Seawall works. The south-eastern portion of the yard will form Stage 2 of the Kororā Colony. The north-eastern portion of the yard will be rehabilitated in accordance with ecological advice.

4.4 Southern Seawall Renewal Project

4.4.1 Southern Seawall

The proposed construction approach to the Southern Seawall works involves:

- Overlaying the existing seawall with a layer of rock and re-used concrete units (underlayer), and two layers of concrete armour units (armour layer), and construction of the seawall toe;

- Replacing the Eastern Area informal rock and concrete rubble with a formal seawall (using concrete armour units, rock underlayers, hardfill, geotextile and an excavated toe); and
- Replacing the rock armour, reno mattress and gabion baskets at the seawall crest, wave trap and backslope with rock armour and underlayer, gabion baskets and potentially a recurve wave return wall.

The existing seawall elements are shown in Figure 4-4. The proposed seawall is shown in drawings 3324338-CA-SK007-SK009 and SK100-SK105 in the design drawings, included in Part C of these application documents.

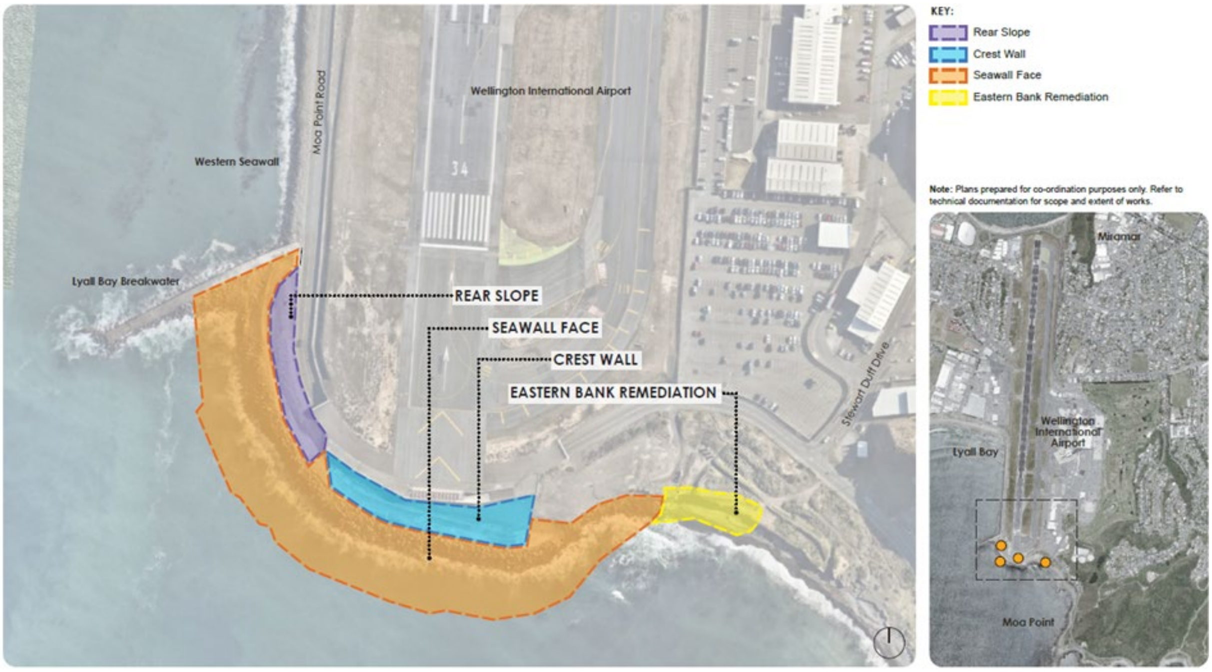

Figure 4-4: Plan of the Existing Southern Seawall

Overall, the work is expected to increase the width of the seawall seaward by approximately 20 m to 30 m. The total finished length of the formal seawall will increase (at the crest) by approximately 100 m. The additional 100 m length of formal seawall replaces the 100 m existing ‘informal’ length of seawall, meaning the overall 400 m seawall length will be unchanged.

The construction contractor will determine the construction programme taking into account Airport operating constraints and by analytical review of historical wind and wave data to determine safe and suitable construction periods. This information will inform the programme and duration of construction activity; however, it is anticipated that the Southern Seawall reconstruction will take approximately 24 – 30 months.

Once the face of the seawall has been completed, crest works will commence. Crest works are expected to include the placement of precast concrete crest wall elements and gabions to protect the seawall crest and landward structures (such as the outer tunnel wall). Once the placement of precast concrete wall and gabions has been completed, underlayer rock, crest armour rock and Cubipods will be placed along the length of the seawall crest.

Rear slope protection works include removal of existing rock and gabions, re-grading of the existing fill and placement of geotextile and rock protection (underlayer, armour rock and potentially gabion baskets).

Traffic management will be in place on Moa Point Road during the rear slope protection works, as further detailed in Section 5 of this CTMP.

4.4.2 Eastern Bank Remediation

The Eastern Bank Remediation is expected to be undertaken either early in or towards the end of the Project, as determined by the contractor’s detailed construction phasing and methodology.

Site fencing will be installed as required to prevent fall from heights and to separate construction worker foot traffic from construction equipment movements.

Once the site has been established, the proposed construction activities will be as follows:

- Implementation of sediment and erosion control measures, in accordance with the ESCP (included in Part B and G of these application documents);
- Removal of any debris and vegetation within the work area, including within the existing stormwater system;
- Protect existing services and reconstruct existing stormwater outlet;
- Contouring of the existing bank, with any cut material to be placed on the Moa Point Yard;
- Clearance and storage of granular beach material, excavation of toe key in rock (up to 1 m deep), and placement of excavated rock on Moa Point Yard, or construct toe rock;
- Placement of geotextile along the bank;
- Construction of rock protection from the toe landward, and working progressively along the structure;
- Replacement of beach material over the lower rock protection; and
- All associated and ancillary activities.

Once construction has concluded, regular monitoring and maintenance of the Eastern Bank Remediation (for example, the relocation and replacement of rock and geotextile, and the relocation of beach material) will be required.

The plant and equipment required for works on the Eastern Bank Remediation will not penetrate the Airport’s designated OLS, therefore construction in this area will occur between 6am and 10pm.

It will take approximately three months to construct the Eastern Bank Remediation.

4.4.3 Kororā Colonies

As part of the mitigation of effects on kororā, two kororā colonies will be developed, and kororā re-homing will be undertaken in advance of the Southern Seawall works.

The Stage 1 Kororā Colony will be developed on the landward side of Moa Point Road, and the Stage 2 Kororā Colony will be developed behind the Eastern Bank Remediation once construction is complete.

The Stage 1 Kororā Colony will be developed before removal of habitat in construction areas begins, allowing kororā to be relocated before their existing roost and nest sites are affected. The re-homing will commence once the Stage 1 Kororā Colony is completed. The colonies will be landscaped and planted as needed and have rock habitat (i.e. selected hand-placed rocks) and burrows installed. The colonies will be fenced to protect kororā from attacks by dogs and disturbance by people.

The re-homing activity comprises progressive removal to stockpile of rubble on the western and eastern sections of the Southern Seawall, re-location of any kororā by an authorised kororā management officer to the Stage 1 Kororā Colony, and progressive securing of the cleared area using grout mattresses, rock bags, wire mesh or similar means. The work will be undertaken by a small to medium sized excavator working with a trained kororā management officer, in accordance with the Kororā Management Plan, included in Part G of these application documents. As set out in the Kororā Management Plan, removal of penguin habitat in advance of seawall construction will occur outside of the main kororā breeding and moulting seasons (August to February inclusive) where practicable.

The Stage 2 Kororā Colony will be constructed on the south-eastern part of the Moa Point Yard (following site demobilisation), on completion of the Southern Seawall reconstruction. It is anticipated that the Stage 2 Kororā Colony will provide sufficient space to accommodate kororā relocated from the Western Seawall if required.

Construction of the Stage 1 Kororā Colony will involve:

- Installation of lizard fencing and local lizard relocation (within the site) to clear limited working areas for excavators and / or trucks within the colony footprint;
- Location, marking and protection of all existing services at the site;
- Installation of a kororā passage from the shoreline to the colony, including:
  - Removal of any debris and vegetation within the work area;
  - Construction of raised section of road, and excavation and installation of an 800 mm high, 2.3 m wide precast concrete underpass beneath the road;
  - Reconstruction of granular road pavement, installation of chip seal wearing course and line marking to reinstate road to original operating condition;
  - Excavation and placement of geotextile and rock to form a shallow ditch through the grass berms on both sides of the road (if required);
- Construction (if required) of a timber pedestrian bridge across the western ditch and covers over the remainder of the ditches;
- Placement of nestboxes;
- Placement of rocks (including reuse of excavated rock), mainly by hand with some limited machine placement on both the eastern and western side on Moa Point Road, based on ecological advice;

- Replacement of weed species with appropriate native planting in accordance with the landscape rehabilitation plan, included in Part B and C of these application documents;
- Erection of a permanent fence around the colony area, to protect kororā from dogs, wind, and human disturbance; and
- All associated and ancillary activities.

Construction of the Stage 2 Kororā Colony will involve:

- Implementation of sediment and erosion control measures, in accordance with the ESCP (included in Part B of these application documents);
- Removal of any debris and vegetation within the work area;
- Location, marking and protection of all existing services at the site;
- Earthworks to recontour the site to a suitable level, with earth mounds constructed inside and outside the colony area to provide shelter based on ecological advice;
- Placement of rocks (including reuse of excavated rock), mainly by hand with some limited machine placement if required, and nestboxes;
- Planting and landscaping, in accordance with the landscape rehabilitation plan, included in Part B and C of these application documents;
- Erection of a permanent fence around the colony area, to protect kororā from dogs, wind and human disturbance; and
- All associated and ancillary activities.

The plant and equipment required for works on the kororā colonies will be able to operate under the OLS, therefore, colony construction will occur between 7am and 5 pm Monday to Friday. It will take approximately three months to construct each colony.

4.5 Construction access

The MGC Yard and Moa Point Yard will be accessed off Stewart Duff Drive and Moa Point Road respectively. Access to the George Bolt Yard will be via Lyall Parade and Tirangi Road.

Although Stewart Duff Drive is a private (WIAL) road, it is the main spine road of the airport precinct and used by the public to access the airport terminal, airport parking areas and golf course. Therefore, there is an expectation that Stewart Duff Drive will operate efficiently and consistently (i.e. travellers to the airport should be able to plan for a consistent and reliable travel time). This expectation would also hold true for Moa Point Road, which although less used as an access to the airport, is part of the public road network. Similar operational principles should apply to the George Bolt Yard; however, it is acknowledged that this site is less directly exposed to public traffic flows.

Controlled access will be in place while construction activities are occurring, with the gates securely locked during times of construction inactivity. Recommended measures at the access points to the construction yards and Southern Seawall site are included in Section 8.2.

It is noted that the right-turn from Stewart Duff Drive at the intersection with Moa Point Road may be managed under appropriate TTM measures. Further detail on TTM measures is included in Section 5 of this CTMP.

4.6 Construction vehicle types

A variety of vehicles will service the construction site. The principal types will be:

- Articulated trucks (rock transportation);
- Semi-trailers (earthworks);
- Rigid trucks (earthworks, rock transportation, and other construction deliveries);
- Over-dimension trucks (special delivers and movement of plant); and
- Utes and light vehicles (construction staff and light equipment haulage).

Generally, trucks used to transport materials to the construction yards and Southern Seawall site will be no larger than a 25m long High Productivity Motor Vehicle (**"HPMV"**). These are standard sized vehicles and are not restricted to using over-dimension routes. All of SH1 and SH2 in the Wellington Region are fully HPMV capable, with many such trucks using these roads every day.

4.7 Construction vehicle routes

4.7.1 North of Mt Victoria Tunnel

The supply sources for the construction materials are still being confirmed and may potentially change during the construction of the Project. However, principal source locations for the materials are understood to be Otaki (cubipods), Taranaki (rock) and the northern South Island (alternative rock supply). Trucks coming from Taranaki or Otaki would run along SH1 in the Wellington region, and from SH1 Ngauranga Interchange follow the SH1 urban motorway through to Vivian Street, right into Kent Terrace then left and through the Mt Victoria Tunnel.

If the rock is sourced from the South Island, it would be barged to CentrePort, unloaded on the wharf and trucked to the Airport. Trucks coming from CentrePort would access the public road network at Aotea Quay, then enter SH1 via Kent Terrace at the Basin Reserve. Trucks returning to the construction materials sources, would likely follow the reverse of their inbound route from the Mt Victoria tunnel.

4.7.2 South of Mt Victoria Tunnel

On the eastern side of the airport, Stewart Duff Drive connects with SH1 (Calabar Road) and extends through the Airport precinct. Whilst this is a viable southbound truck route (daytime and nighttime), access for return northbound journeys through the airport precinct immediately adjacent the terminal building is not, since the bridge structure at the Level 01 concourse was not designed or built to carry frequent heavy trucks. Furthermore, the access underneath this bridge structure is not suitable for trucks and is also used as a pick-up zone by airport passengers.

On the western side of the Airport, Lyall Parade, Onepu Road[1] and Kilbirnie Crescent will provide the route back to SH1 for trucks returning to CentrePort or destinations further north.

Site vehicles using the George Bolt Yard, would likely use Lyall Bay Parade, Tirangi Road, George Bolt Street and Cochrane Street in addition to the previously mentioned routes. Use of the George Bolt Yard is likely to be limited to storage of some equipment, and site offices/ utilities hence truck movements to and from this location would be infrequent.

South of the Mt Victoria Tunnel the two main routes for trucks to travel to and from the site can be summarised as follows:

- **Route A** (Inbound) – follows SH1 to the Airport, then uses Stewart Duff Drive to traverse the Airport itself, before turning onto Moa Point Road and accessing the site. The route through the Airport is suitable southbound (only) at all times of the day.
- **Route B** (outbound) – from the site, follows Moa Point Road and Lyall Parade before turning north onto Onepu Road, and connecting with SH1 at Kilbirnie Crescent.

The site entry and egress point for the MGC Yard will be positioned so the trucks shuttling between the MGC Yard and Moa Point Yards could run in both directions on Stewart Duff Drive. The public roads between the George Bolt Yard and the Moa Point Yard allow two-way movement in both directions.

Figure 4-5 shows these construction routes south of the Mt Victoria Tunnel.

[1] It is noted that separated cycle lanes have recently been implemented on both sides of Onepu Road. A site drive through has been undertaken to confirm that this route is still suitable for truck movements. It is also noted that the Onepu Road corridor is a bus route and is the location of a bus depot.

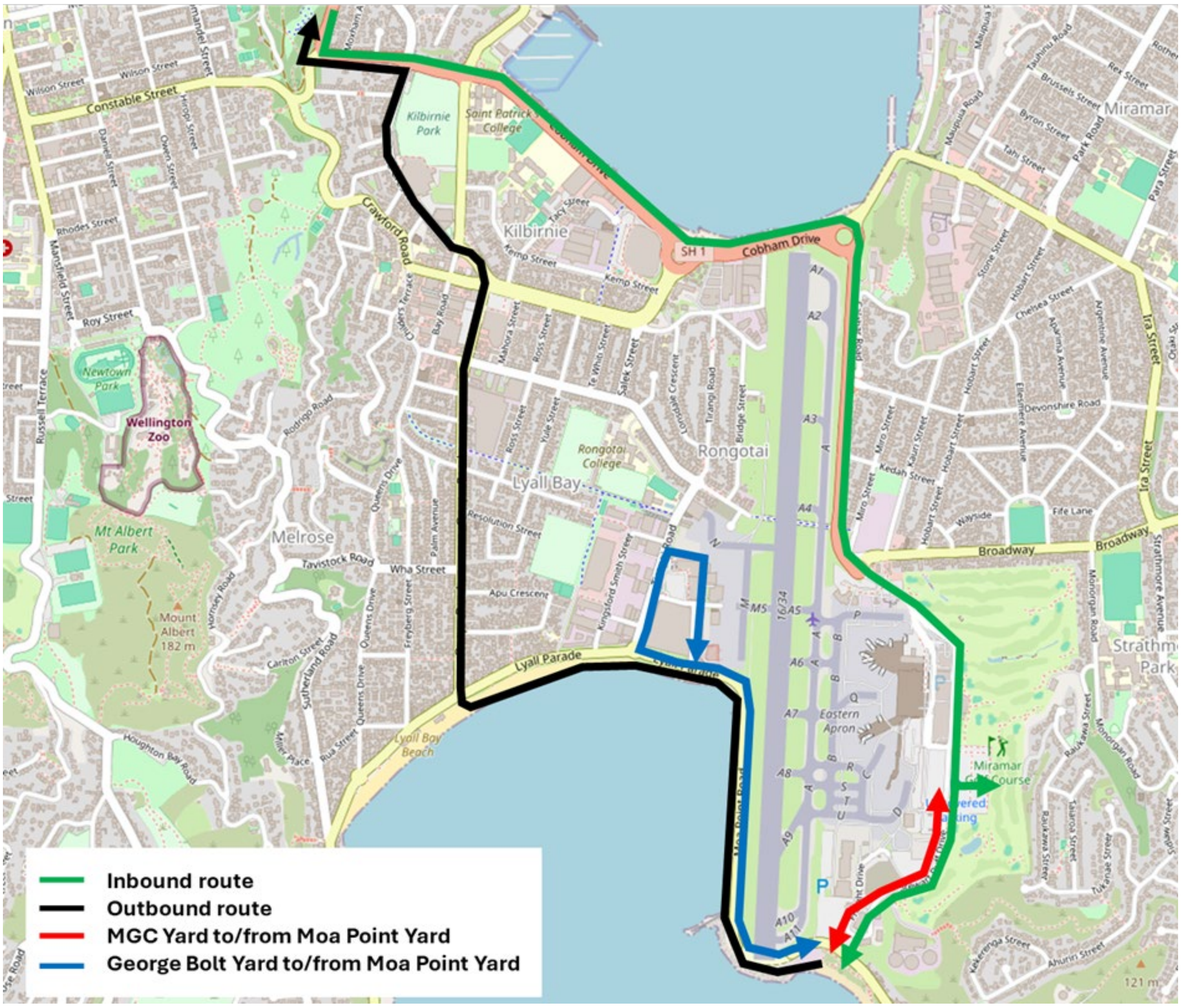

Figure 4-5: Proposed construction routes south of Mt Victoria Tunnel

For the occasional transport of some larger equipment and plant to/from site, an oversized vehicle may be required. These vehicles will need to route around the waterfront from the CBD (Oriental Bay – Evans Bay) and use SH1 through the Airport to access either the construction yards or seawall site. Once unloaded, these trucks should then be able to pass through the Runway End Safety Area (**"RESA"**) Tunnel and Mt Victoria Tunnel and can follow the outbound route illustrated in Figure 4-5.

If an overdimension vehicle is unable to pass through the RESA tunnel, then options could be to run northbound on Stewart Duff Drive via the airside of the Airport. This route diverts from Stewart Duff Drive at the intersection of Station Drive and continues (airside) across the Airport to link with Freight Drive. However, this route is subject to strict Airport permissions.

Prior to any over-dimension vehicle movement, the exact vehicle / load dimensions will be confirmed as part of the permitting and approval process for the planned operation. This will allow potential route options to be identified, and then a suitable route confirmed. Confirmation of a particular route would include liaison with the necessary stakeholders, including confirmation of the allowable hours (or other restrictions) on the usage of that route. The liaison process would also identify if there were works or other events on the route road network which would need to be avoided. No over-dimension traffic movements will occur without prior approval.

4.8 Construction traffic volumes

Construction traffic volumes will vary significantly over the course of the Project based on the stage of construction, which is active and, additionally, in the case of the rock sourcing, whether or not the barging operation is employed. A conservative assessment of the traffic effects of the Project has been adopted for the modelling, that includes truck traffic generation from a rock barging operation from the South Island. It is noted that the adoption of this option is solely for the purposes of a conservative traffic assessment and does not reflect any recommendation or preference for the rock source.

In terms of the traffic demand generated by the Southern Seawall construction works the following assumptions have been made to provide this conservative assessment:

- Both the cubipod and rock stockpiling operations are active;
- Trucks hauling the “other” material to the site are active;
- Rock supply is via barge from the South Island;
- The barge employed is a 1,100 tonne capacity barge;
- The trucks employed to haul the rock are 20-tonne articulated trucks. As a sensitivity test, a blended option has also been assessed which assumes using a mixture of 20-tonne articulated trucks and 10-tonne 6-wheel trucks, with a 2/3 and 1/3 split respectively (in practice, it is likely that only articulated trucks are utilised for efficiency purposes);
- Earthworks operating at the same time as barge rock unloading (although Stantec has been advised this is very unlikely that both operations would run simultaneously);
- The Moa Point Yard and Seawall Construction site is operative and hence there are vehicle flows between the MGC Yard and the Moa Point Yard; and
- Approximately 20-30 staff are on site (typical average).

Building from these assumptions and the information supplied by McConnell Dowell, the following traffic demand profile was created for the modelling.

Table 4-1: Traffic demand (modelled)

Material/ Operation	Route	Vehicle	Daily Trips	Peak Hour Trips
Rock Supply	Centreport to MGC Yard	Semi-trailer or Semi-trailers & 6 wheel trucks (2/3 and 1/3)	110 136	10 13
Cubipod Delivery	SH1 Ngauranga to Moa Point Yard	B train or Semi-trailer	21	2
Earthworks	MGC Yard to Southern Landfill	6 wheel truck	51	5
MGC Yard to Moa Point Yard Shuttle	MGC Yard to Moa Point Yard	6 wheel truck	38	4
General Deliveries	SH1 Ngauranga to MGC Yard	6-wheel truck	13	1
Staff	SH1 Ngauranga to MGC Yard	Car	26	13

Except for the staff movements which have been assumed to occur only in the peak hours (50% inbound in the morning and 50% outbound in the evening) the other trip demands have been spread over a 7am-6pm operating day, with trips specifically to / from the MGC yard not running between 6am-7:30am. This is shorter than the proposed working day and allows for some loss of time at the start and end of the day due to start-up/ close procedures, some peaking of traffic movements and other constraints which may limit operating hours.

It is noted that these assumptions are generally conservative and represent a possible “worst” case scenario where two higher trip generating phases of the construction programme are active simultaneously and even within that higher trip generating options (e.g. small trucks for the rock haulage) were assessed. Consequently, it is considered that the modelled demands represent a very conservative scenario.

Further detail on construction traffic volumes and assumed monthly profiles can be found in the Transportation Assessment Report.

4.9 Construction traffic modelling and effects

To provide a robust traffic effects assessment, the potential effects associated with the highest anticipated daily volume of construction vehicles (i.e. barge unloading) was modelled using the Ngauranga to Airport Aimsun[2] traffic model (**“N2AM”**). This model is managed, overseen, updated and applied by the Wellington Transport Analytics Unit (**“WTAU”**), a team within Greater Wellington Regional Council.

[2] Aimsun is a microsimulation modelling software package widely used in the transportation industry.

A summary of the modelled effects are included below, with further detail provided in the Transportation Assessment Report.

There are three peak periods within the N2AM model; morning peak (6-10am), inter peak (10am-2pm), and evening peak (3-7pm). Anticipated construction traffic has been added to both the 2022 and 2033 do-minimum scenarios, to enable an assessment of the potential operational and performance changes on the connecting and surrounding road network. Discussions with WTAU suggest that there has been very little growth in traffic volumes since 2022 and that the N2AM 2022 model scenario would be representative and within the typical margins of error / day to day variation for a 2025 scenario.

Construction vehicle types were set up in the Aimsun model to represent each of the construction activities mentioned above. Generally, the six-wheeled truck were represented by a 9m truck within Aimsun (the standard truck dimension used in the base model), while a new 21.5m long B-train vehicle was set up in the model to represent cubipod delivery vehicles, and 18m long semi-trailer set up to represent rock supply delivery vehicles.

These construction vehicles were modelled to follow specific origin-destination (**"OD"**) routes, which align with the recommended construction routes determined in this assessment. These routes are summarised in Table 4-2.

Table 4-2: Construction Vehicle OD Routes

Construction Activity	Route Taken
MGC Yard	Airport to / from Southern Landfill via Lyall Parade, Owhiro Bay Parade and Happy Valley Road
Rock supply	CentrePort to / from Airport via Aotea Quay, Kent Terrace and SH1.
Cubipod delivery	SH1 to / from Moa Point Yard via SH1 and Stewart Duff Drive
Movements between MGC Yard and Moa Point Yard	Airport to / from Moa Point Yard via Stewart Duff Drive and Moa Point Road
Staff vehicles	SH1 to / from Airport (no OD route specified)
General deliveries / concrete trucks	SH1 to / from Airport via SH1 and Stewart Duff Drive
All	Northbound route from the Airport for all the above activities is through Stewart Duff Drive, Lyall Parade, Onepu Road and Kilbirnie Crescent

Two rock haulage options have been modelled for the barge scenario, with the first option assuming all deliveries will be made by articulated trucks and the second option assuming that 2/3 of deliveries will be by articulated trucks while the remaining 1/3 by 6-wheel trucks. In practice, it is likely that only articulated trucks will be used for efficiency purposes, however, this mixed option has been modelled as a sensitivity test for higher hourly construction traffic volumes. For reporting purposes, the first option is referred to as 'Option A' and the second option as 'Option B'.

Travel time outputs along five key routes have been analysed for the modelled scenarios, to better understand the effects associated with the additional construction traffic. These travel time routes were selected as they align with the proposed construction routes and will directly be affected by the increase in traffic volume resulting from the construction vehicles.

The routes include:

- Airport to SH1 northbound;
- SH1 to Airport southbound;
- Airport to CentrePort northbound;
- CentrePort to Airport southbound; and
- Stewart Duff Drive to Kilbirnie Crescent northbound.

Increases in travel time have been compared against guidance within the Traffic Control Devices Manual Part 8: Code of Practice for temporary traffic management (**"CoPTTM"**), which suggests that many road controlling authorities set a maximum of five minutes for delays to traffic.

A summary of the modelled travel times are included in Table 4-3 to Table 4-6.

Table 4-3: Modelled Travel Time Summary 2022 (representing 2025) - First Peak Hour

Peak Hour	Route	2022 Base (mins)	2022 Option A and Difference (mins)		2022 Option B and Difference (mins)	
Morning Peak (0700 to 0800)	Airport to CentrePort northbound	21.90	22.22	0.33	22.06	0.17
	CentrePort to Airport southbound	18.34	17.98	-0.36	18.32	-0.01
	Airport to SH1 northbound	23.06	23.29	0.23	23.12	0.06
	SH1 to Airport southbound	30.74	31.87	1.13	30.96	0.22
	Moa Point to Kilbirnie Cr northbound	7.69	7.73	0.04	7.67	-0.03
Inter Peak (1100 to 1200)	Airport to CentrePort northbound	23.57	23.84	0.28	23.22	-0.35
	CentrePort to Airport southbound	16.86	16.74	-0.11	16.64	-0.22
	Airport to SH1 northbound	22.49	22.78	0.29	22.42	-0.07
	SH1 to Airport southbound	20.19	20.19	0.01	20.15	-0.04
	Moa Point to Kilbirnie Cr northbound	7.38	7.40	0.02	7.47	0.09
Evening Peak (1600 to 1700)	Airport to CentrePort northbound	25.82	25.96	0.14	25.05	-0.77
	CentrePort to Airport southbound	19.82	19.46	-0.36	19.20	-0.62
	Airport to SH1 northbound	27.66	27.81	0.15	26.92	-0.74
	SH1 to Airport southbound	26.88	27.02	0.14	26.28	-0.60
	Moa Point to Kilbirnie Cr northbound	8.54	8.38	-0.17	8.43	-0.11

Table 4-4: Modelled Travel Time Summary 2022 (representing 2025) - Second Peak Hour

Peak Hour	Route	2022 Base (mins)	2022 Option A and Difference (mins)		2022 Option B and Difference (mins)	
Morning Peak (0800 to 0900)	Airport to CentrePort northbound	37.99	36.49	-1.49	38.45	0.46
	CentrePort to Airport southbound	28.12	26.19	-1.93	29.18	1.05
	Airport to SH1 northbound	37.78	36.30	-1.48	38.21	0.43
	SH1 to Airport southbound	36.83	34.98	-1.85	39.93	3.10
	Moa Point to Kilbirnie Cr northbound	10.75	9.23	-1.52	9.87	-0.88
Inter Peak (1200 to 1300)	Airport to CentrePort northbound	26.48	26.46	-0.02	27.23	0.74
	CentrePort to Airport southbound	18.28	18.16	-0.12	18.24	-0.04
	Airport to SH1 northbound	25.60	25.23	-0.37	25.67	0.06
	SH1 to Airport southbound	21.39	21.43	0.04	21.55	0.16
	Moa Point to Kilbirnie Cr northbound	7.75	7.94	0.19	7.95	0.20
Evening Peak (1700 to 1800)	Airport to CentrePort northbound	26.25	25.52	-0.73	25.41	-0.84
	CentrePort to Airport southbound	22.16	21.42	-0.74	21.67	-0.49
	Airport to SH1 northbound	28.05	26.88	-1.17	27.32	-0.73
	SH1 to Airport southbound	30.60	28.82	-1.78	31.58	0.98
	Moa Point to Kilbirnie Cr northbound	8.69	8.34	-0.35	8.40	-0.29

Table 4-5: Modelled Travel Time Summary 2033 - First Peak Hour

Peak Hour	Route	2033 DoMin (mins)	2033 Option A and Difference (mins)		2033 Option B and Difference (mins)	
Morning Peak (0700 to 0800)	Airport to CentrePort northbound	20.29	20.45	0.15	20.32	0.03
	CentrePort to Airport southbound	18.38	18.21	-0.17	18.44	0.07
	Airport to SH1 northbound	21.69	21.67	-0.02	21.26	-0.43
	SH1 to Airport southbound	32.40	32.30	-0.10	32.76	0.36
	Moa Point to Kilbirnie Cr northbound	7.47	7.52	0.05	7.60	0.13
Inter Peak (1100 to 1200)	Airport to CentrePort northbound	21.53	21.80	0.27	20.87	-0.66
	CentrePort to Airport southbound	17.93	18.09	0.16	17.98	0.06
	Airport to SH1 northbound	21.28	21.00	-0.28	20.83	-0.46
	SH1 to Airport southbound	21.22	21.58	0.36	21.23	0.01
	Moa Point to Kilbirnie Cr northbound	7.69	7.80	0.11	7.92	0.23
Evening Peak (1600 to 1700)	Airport to CentrePort northbound	24.78	24.04	-0.74	23.98	-0.80
	CentrePort to Airport southbound	20.41	20.05	-0.36	20.78	0.37
	Airport to SH1 northbound	24.29	24.34	0.05	23.77	-0.52
	SH1 to Airport southbound	25.94	26.61	0.67	27.40	1.46
	Moa Point to Kilbirnie Cr northbound	8.44	8.85	0.41	8.27	-0.16

Table 4-6: Modelled Travel Time Summary 2033 - Second Peak Hour

Peak Hour	Route	2033 DoMin	2033 Option A and Difference (mins)		2033 Option B and Difference (mins)	
Morning Peak (0800 to 0900)	Airport to CentrePort northbound	37.60	39.44	1.84	41.15	3.54
	CentrePort to Airport southbound	25.33	25.22	-0.12	25.66	0.32
	Airport to SH1 northbound	33.14	32.99	-0.15	34.45	1.31
	SH1 to Airport southbound	41.30	41.46	0.16	45.54	4.23
	Moa Point to Kilbirnie Cr northbound	8.67	8.79	0.13	8.61	-0.06
Inter Peak (1200 to 1300)	Airport to CentrePort northbound	23.84	23.64	-0.19	23.69	-0.15
	CentrePort to Airport southbound	20.02	19.67	-0.35	20.18	0.16
	Airport to SH1 northbound	23.60	23.24	-0.37	23.26	-0.34
	SH1 to Airport southbound	23.09	22.81	-0.27	23.31	0.22
	Moa Point to Kilbirnie Cr northbound	8.15	8.24	0.09	7.91	-0.25
Evening Peak (1700 to 1800)	Airport to CentrePort northbound	26.38	29.79	3.41	27.08	0.70
	CentrePort to Airport southbound	26.17	28.23	2.06	26.59	0.42
	Airport to SH1 northbound	25.29	26.74	1.45	25.88	0.59
	SH1 to Airport southbound	32.44	34.49	2.04	33.05	0.60
	Moa Point to Kilbirnie Cr northbound	8.67	10.08	1.41	9.08	0.41

As shown in the above tables, none of the modelled routes experience a travel time increase of five minutes or more. It is also noted that the CoPTTM guidance is generally for within a construction site with temporary traffic management as opposed to an entire route as included in this assessment. However, the guidance has been used in this assessment to provide a relatable base point for understanding the potential travel time impacts. While it is potentially a conservative parameter in that it is usually used to consider discrete construction sites, it has been applied to these routes given their importance to the Wellington road network and to emphasise that the traffic effects from the construction haulage can be managed appropriately.

It can also be seen that some travel time routes counterintuitively indicate a small reduction in travel time with the additional construction traffic. This is not due to the addition of the construction traffic, but a result of model randomness across each replication. Each of the ten model replications have a unique 'random seed' number, which creates some variation and randomness to elements of the simulation such as when a vehicle is released into the network, vehicle lane changing decisions, and vehicle route choice decisions. This replicates variability in day-to-day traffic in practice. As a result, the observed reduction in some travel time routes is due to the variability of the background 2025 base and 2033 do-min demands, instead of the additional construction traffic.

These instances of reduced travel times are more noticeable in the 2025 scenarios, as shown in Table 4-3 and Table 4-4, which suggest that the additional construction traffic does not significantly add delays to the modelled travel time routes and are masked by model randomness / variability. However, there are less instances of travel time reductions in the 2033 scenarios, as shown in Table 4-5 and Table 4-6, which suggests there is less residual capacity in these model scenarios given the greater traffic demand in the future. As a result, the effect of construction traffic is more noticeable in the modelled 2033 travel time routes, even when considering model randomness / variability.

Generally, the second peak hour across each of the three peak periods indicates a higher travel time than in the first peak hour. This is reflected by the highest travel time increases due to construction traffic seen in the 2033 scenario during the second peak hour, as highlighted in Table 4-6. Furthermore, the critical peak periods were seen to be the morning and evening peak, which represent a relatively higher traffic demand in the network than in the inter peak.

When comparing travel time outputs between Options A and B, there are some increases and decreases along the modelled routes, but no clear overall trend. Again, this indicates that variability in performance of background 2025 base and 2033 do-min demands has a greater effect on travel times than the additional construction traffic.

Importantly, these modelled travel times indicate that the network can accommodate the anticipated construction demands during the peak periods.

4.10 Vulnerable users

The safety of pedestrians and other vulnerable users are a critical part of the CTMP. Routes used by these users should be maintained, and if affected by construction vehicle access points or operations, needs to be safely considered in relevant SSTMPs.

Schools adjacent or in near proximity to the proposed construction vehicle routes (e.g. Lyall Bay School) will be notified of the increased activity before works commence.

Onepu Road is proposed as the outbound construction vehicle route, and it is noted that separated cycle lanes have recently been implemented on both sides of Onepu Road. The separated cycle lanes provide some mitigation for the effects from the additional construction traffic associated with the Project, as cyclists will not need to share the traffic lane with these vehicles. However, as part of staff induction, drivers will be reminded to be alert for pedestrians and cyclists while driving.

5 Traffic management scenarios

5.1 Temporary traffic management expectations

This section of the CTMP will be updated as SSTMPs are prepared post consent, when construction methodologies and timelines are further refined.

Principally the main impact on the road network and road corridor from the construction programme will be due to movement of HCVs hauling materials and equipment to and from the various source locations and constructions yards. Actual physical works in the road corridor are understood to be limited to the enabling works stages, where new or upgraded site access locations are required to be created for the three yards (MGC Yard, George Bolt Yard and Moa Point Yard) and to install an underpass for Kororā on Moa Point Road.

It is anticipated that the New Zealand Guide to Temporary Traffic Management ("**NZGTTM**") will be the relevant standard for the development of temporary traffic management plans in New Zealand during the course of the construction works. All SSTMPs developed for use during the construction project should seek to conform to the expectations of the NZGTTM. Each SSTMP should seek to support the safe and efficient movement of all road users (especially vulnerable road users) around the work site, while allowing appropriate working area for the project activity to occur practically and safely. Where some or all modes of road users (e.g. pedestrians) must be detoured or diverted, then the SSTMP must detail the detour route.

All SSTMPs must be submitted to WCC (and NZTA if appropriate) for review and approval prior to deployment.

A SSTMP register should be created by the project team to ensure a central record of all project SSTMPs is available. As a minimum, the SSTMP register should:

- Assign each SSTMP a unique number/ identifier;
- Record the current status of a SSTMP (e.g. design, in review, active etc);
- Include a brief description of the activity;
- Identify the section of road network covered by the SSTMP;
- Include deployment dates / times; and
- Describe any key restrictions on deployment.

Where the NZGTTM is updated or superseded, then it is assumed that the version/ standard recognised by NZTA/ WCC at the time of submission of a specific SSTMP would apply.

If at the conclusion of an activity covered by a specific SSTMP the continued operation of the road(s) under a further (different) SSTMP is required (e.g. if works are to be staged), then the subsequent stage SSTMP should be developed and approved prior to the conclusion of the previous stage.

Temporary or permanent signage installed will be in accordance with the specifications of the Traffic Control Devices Manual. Given the duration of some of the phases of work, it is recommended that if signs are to be in place for more than six months, these are installed on fixed posts. Such longer term signage is likely to include the site access point signage, and trucks crossing signage. The final signage plans will be part of the SSTMPs that will be submitted to and certified by WCC before works commence.

5.2 Road closure for large plant

It is anticipated that a road closure of Moa Point Road may be needed for two to three nights at the start and end of the Project, to mobilise and demobilise large plant required at the Southern Seawall. This plant may include a 300-400 tonne excavator and 400 tonne crawler crane. An example of a Traffic Management Diagram (**"TMD"**) that would be submitted as part of a SSTMP for a road closure on Moa Point Road is shown in Figure 5-1 and Figure 5-2. Prior notification to road users of such closures would occur via the use of Variable Message Sign (**"VMS"**) trailers or other temporary signage. Detour routes would be signposted to direct vehicles around the closure.

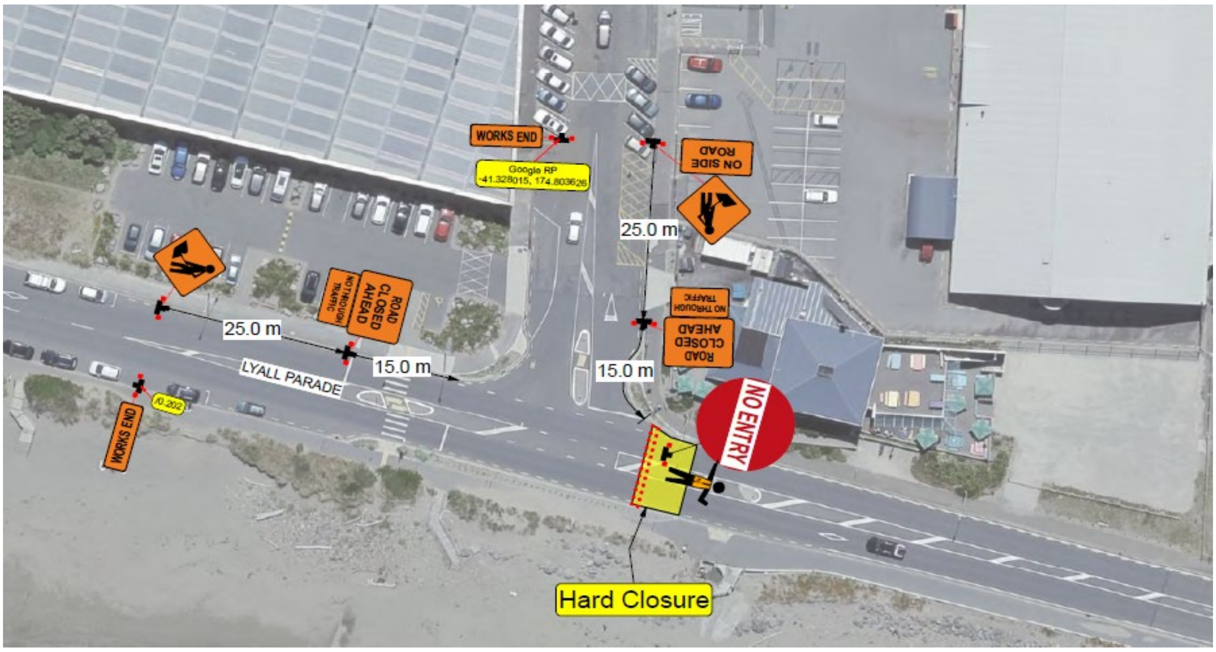

Figure 5-1: Moa Point Road closure (Cochrane Street end)

Figure 5-2: Moa Point Road closure (Steward Duff Drive end)

5.3 Establishment of construction yards

Construction of new or upgraded vehicle crossings for the three yards will require works in the road corridor to install the vehicle crossing and tie into the adjacent traffic lane and footpath. This may require a short-term footpath closure for the MGC Yard and George Bolt Yard (acknowledging that there is unlikely going to be a need for a footpath adjacent to this yard once the hangar has been removed) and noting there is currently no footpath on the access side of Moa Point Road for the Moa Point Yard.

Stewart Duff Drive primarily provides access to the Airport, it’s ancillary activities, and the Miramar Golf Course. Pedestrian access along the road is not continuous and it is considered that only a low volume of pedestrians and cyclists would use Stewart Duff Drive.

At the MGC Yard, there is no footpath on the opposite (airfield) side of the road and a temporary footpath may need to be installed to allow pedestrians to pass the site when the vehicle crossing is being constructed. Alternatively, if it is determined that the number of pedestrians is very low, and it is safe and practical, they could be escorted through work site by a traffic controller. This would avoid the need for a pedestrian having to cross the road twice. A risk assessment will be conducted on these options as part of the SSTMP for the site access construction (although it is a private road, it is nonetheless recommended that a TMP consistent with NZGTTM is developed for the construction and operation of the MGC Yards site access(es).

At the George Bolt Yard, there is limited pedestrian access beyond the site, a full footpath on the opposite side of the road and low traffic volumes on the road, so pedestrians could safely cross and use the other footpath.

A shoulder closure and / or stop / go traffic control system may be required to enable this construction work. It is anticipated that such an operation would have a duration of no more than a week at each location and should only occur outside of peak hours, unless operation during peak hours is specifically permitted under the approved SSTMP conditions. Where works during peak hour periods are not permitted, appropriate allowance should be made for disestablishing the work site so that all TTM associated with the Stop/ Go operation is cleared from the carriageway prior to the start of the peak hour period. Similarly, establishment of the Stop/Go TMP should not commence until after a peak hour period has finished, unless provided for under the approved SSTMP.

Example TMD's for a stop / go traffic control system on Moa Point Road and Stewart Duff Drive is pictured in Figure 5-3 and Figure 5-4.

Figure 5-3: Stop / go traffic control on Moa Point Road to enable construction of yard access

Figure 5-4: Stop / go traffic control on Steward Duff Drive to enable construction of yard access

5.4 Cleaning of construction routes

A semi-static closure on Stewart Duff Drive and Moa Point Road will be needed to enable cleaning of drainage sumps within the RESA tunnel and the proposed construction route between the MGC Yard and Moa Point Yard. This closure will be for a short duration, likely less than 15 minutes, and an example TMD is pictured in Figure 5-5.

Figure 5-5: Stewart Duff Drive semi-static closure

5.5 Stewart Duff Drive / Moa Point intersection

It is noted that the right-turn from Stewart Duff Drive at the intersection with Moa Point Road may be managed under appropriate TTM measures, and to accommodate the immediate left-turn to access the Moa Point Yard. The need for TTM measures will depend on the length and size of construction vehicles undertaking this manoeuvre and the volume of such movements and may include Temporary Speed Limits (**"TSL"**).

Peak truck movements (presumed to be during the barge delivery scenario of the rock haulage operation) would see around 13 heavy vehicles movements per hour (roughly one every four to five minutes) on haulage days. When truck volumes for the haulage operation are further defined, the intersection will be modelled in SIDRA if it is determined that inappropriate delays to traffic may result. The proposed TTM for this intersection would include measures to provide temporary controls (e.g. Stop /Go).

5.6 Moa Point Road rear slope protection works

TTM measures will be in place to accommodate rear slope protection works at the Southern Seawall, which will include removal of existing rock and gabions, re-grading of the existing fill and placement of geotextile and rock protection (underlayer, armour rock and potentially gabion baskets). This may involve TSL's to support construction vehicles turning into and out of this construction site, with an SSTMP prepared post consent, when construction methodologies are further refined.

5.7 Stage 1 Kororā Colony

Works associated with installation of a kororā passage may require TTM measures such as a lane closure, particularly during construction of a raised section of Moa Point Road to support installation of the precast concrete underpass beneath the road. The kororā colony protection works may attract a level of public interest and hence specific safety controls may be required to provide suitable protection and separate for the public from the works. Any SSTMPs will be prepared post-consent, when construction methodologies are further refined.

6 Parking

6.1 Staff parking

The enabling and construction works for the Project will be highly mechanised and only a relatively small workforce will be required for most stages of the project. The average workforce would typically be 20-30 persons, and at peak periods may increase to 50 persons.

A staff parking area will be formed at 30-32 Moa Point Road, and some parking provided at the MGC Yard and George Bolt Yard. It is noted that parking near the Moa Point Yard and Southern Seawall site (i.e. the newly formed staff parking area) may be limited as on-street parking is not permitted on Moa Point Road west of Stewart Duff Drive. If required, some form of shuttle service to run staff between another parking area (e.g. MGC Yard) and the Southern Seawall site could be implemented to ensure an effective use of the construction area and to contain the spread of staff parking.

The off-street parking area on Moa Point Road immediately south of the Stage 1 Kororā Colony can be utilised by staff.

Parking management details should be provided to all staff and contractors to ensure that there is a clear expectation of where and how parking can occur.

Parking for staff utes and shuttles will be allocated at the above staff parking areas to allow more efficient movement between the various yards and minimise the number of parking / trip movements generated.

To minimise the potential for overspill car parking by staff, ridesharing will be encouraged, and a shuttle service can be provided. The details of the ridesharing / shuttle operations are to be shared with all staff.

In any (unlikely) event where staff do park on-street, they should be directed to comply with the local parking regulations

6.2 Construction vehicles

Construction vehicles and other plant, materials or equipment will generally be parked / stored within the construction yards, or the Southern Seawall site.

If it is necessary to park / store vehicles and other plant, materials or equipment in the legal road reserve outside of the permitted areas, specific permission will be sought from WCC as part of the Corridor Access Request (“CAR”) application and any storage would only occur in designated areas.

7 Communication and liaison

7.1 Overview

While the overall traffic effect of the works on community surrounding the Airport is generally considered to be limited, there will be observable increases in the number of trucks on the road network, particularly on the barge unloading days (if this is the option pursued). Accordingly, regular and clear communication with community should occur.

Project information boards outlining project information, programme, and contractor/client contact details will be erected on site. Installation location and any additional information that needs to be included in this board would need to be discussed with the RCA.

SSTMPs will be developed across the various construction stages. These plans will include placement of specific advanced warning signs and directional signage to effectively and safely guide road users through the construction site and frontage roads.

Where access to particular areas are required to be modified or closed off, specific communication on the alternative access routes will be provided to emergency services and key stakeholders.

7.2 Co-ordination with WCC, WIAL and NZTA

The works have a duration of approximately 6 to 8 years. During this time other construction, roading or maintenance works, or special events, will likely occur within the Wellington area that may overlap with the construction area or proposed routes for the Project. These other works or events could generate additional or unusual traffic flows within the Airport precinct or on the Wellington arterial road network.

Liaison between the Project Team, WIAL, WCC, NZTA, and any relevant construction and maintenance contractors should occur on a regular basis (e.g. every 3-4 months) to forecast these events and identify if any short-term changes to traffic operations are required (e.g. changing a rock haulage day to avoid the Round the Bays run).

When directed by WCC, NZTA or otherwise where appropriate, the Project Team should liaise with other projects working within or adjacent to the Project area to ensure compatibility of TTM layouts and works operations.

7.3 Co-ordination with CentrePort operations

The supply sources for the construction materials are still being confirmed and may potentially change during the construction of the Project. However, if rock is sourced from the South Island, it would be barged to CentrePort, unloaded on the wharf and trucked from the port to the Airport. Trucks coming from the port would access the public road network at Aotea Quay, then enter SH1 via Kent Terrace at the Basin Reserve.

To ensure minimum disruption to both port and Project operations, liaison between the Project team and CentrePort should occur to addresses such matters as the routing of the trucks within the port area, and location of loading/ unloading areas.

7.4 Feedback

In the event of feedback, complaints, enquiries or compliments from a resident/neighbour, member of the public, local authority or any other stakeholder, whether given verbally, in writing or both, it will be recorded on a CTMP feedback form and entered in the designated feedback register.

A 24-hour emergency contact will be available for all parties to contact the project team. The designated contact person and their contact details will be displayed on site notice boards and advised in community newsletters.

All submitters will be contacted by the designated contact person or an appropriate representative for further discussion. Identification of a mutually acceptable resolution will be found within one week where reasonably possible.

8 Monitoring and mitigations

In order to safely and efficiently manage the proposed works and to mitigate the potential impact on the road network and other road users, a suite of mitigation measures has been proposed in this CTMP.

A potential monitoring scheme is provided in Table 8-1, with detail on proposed mitigation measures included in the following sub-sections.

Table 8-1: Potential Monitoring Scheme

Monitoring Activities	Frequency	Responsibility
Check requisite SSTMP has been approved	Prior to the specific works commencing	Project Manager (or appointed delegate)
Check appropriate permitting has been approved for overweight or overdimension haulage movements	Prior to haulage operation	
Check / review scenarios and methodology in this CTMP remain relevant/ appropriate	At 3 months after construction operations start, then every 6 months or when a change in scenario/ methodology is proposed	
Inspect temporary traffic management layout(s)	As required by the SSTMP conditions when the site is in operation.	STMS/TC
Documented check of temporary traffic management	Daily and as layouts change	STMS/TC
Audit to ensure installed TTM is in accordance with approved SSTMP(s) and aligns with Guide to Temporary Traffic Management	As required, but not less than monthly	Appropriately qualified auditor
Road Condition	Weekly	Appointed Engineer
Complaints / Communication Register	Continuous	Stakeholder Liaison Manager

Any injury events or serious near misses should be reported immediately to the Project Manager and the WIAL contact for discussion with external authorities (as appropriate) and for internal review.

Where standard inspections, audits or other reporting identifies that TTM equipment is missing, damaged or otherwise in an unsuitable condition, steps must be taken to remedy such deficiencies as appropriate. This may require a pause in construction operations until the deficient/ missing TTM equipment is remedied

8.1 Safe driving

The contractor will highlight the importance of safe driving at induction and toolbox meetings. Many of the roads around the project area are heavily trafficked and at particular times of the day/ year there are high pedestrian volumes. Key driving behaviours to emphasise at induction meetings are:

- Safe following distances;
- Check sightlines to ensure there is a safe gap in which to turn into or across traffic;

- Being aware of pedestrian movements, particularly around schools adjacent to the construction traffic routes. These schools will be notified of the increased activity before works commence;
- Being aware of cyclist movements, particularly along Onepu Road where there are cycle lanes, and in particular where the Leonie Gill Pathway crosses Onepu Road;
- Being aware of cyclists at site access locations or other locations where trucks are turning left;
- Not stopping in cyclist advance boxes at signalised intersections;
- Being aware of the potential for pedestrians to cross at the end of signalised crossing periods at busy central city intersections;
- Not driving while fatigued; and
- Not driving while distracted (e.g., using mobile phones).

From an equipment perspective, it is proposed that all trucks will operate an orange flashing beacon or similar when slowing and entering site access points. Similarly, when exiting a site and accelerating to traffic speed, all non-rigid trucks (e.g. semi-trailers or truck and trailer units) will have side running lights.

It is recommended that T2A “Hazard warning” signs with a T217 “Trucks Crossing” supplementary are installed at the Lyall Parade/ Onepu Road and Stewart Duff Drive / Moa Point Road intersections when trucking operations are in progress.

8.2 Access

Access to, and egress from the construction yards and the Southern Seawall site will only occur via designated access points. Such access points will be clearly signposted, and instructions provided to drivers on which entry/ exit points to use. When an access is not in use, the access gate/ barrier may be closed, and signage removed or covered to prevent inadvertent access.

The following measures are recommended to be implemented at the construction yards, Southern Seawall site, and Stage 1 Kororā Colony site, to promote safe and efficient access:

- Signage should be installed so that the site access points can be clearly identified by construction staff (particularly when multiple accesses or yards are in operations), and so that it is clear there is no public access;
- Safe and appropriate sightlines should be provided at all site access locations;
- Site vehicles to enter and exit site access points in a forwards direction (where practical);
- Where reverse manoeuvres onto public roads are required, traffic control and management measures (e.g. signage, spotters) will be in place;
- Access controls at the MGC Yard and Moa Point Yard should be sited and administered so as to prevent queuing extending back to Stewart Duff Drive or Moa Point Road;
- Access controls at the George Bolt Yard should prevent queuing onto Tirangi Road or within the retail park carpark;

- Turning movements for trucks into and out of the site access points on Stewart Duff Drive and Moa Point Road should be single point manoeuvres, and unless in exceptional circumstances, only occur in a forward direction. This is to ensure that public / construction vehicle interactions are simple and provide no unexpected surprises for unfamiliar drivers or road users;
- If access to a particular yard is restricted to trucks of certain dimensions or capacity (e.g. if height/ weight or length restriction applies), then an internal load/ vehicle check process should be developed to ensure that only suitable vehicles and loads are directed to use that yard;
- Heavy vehicles will operate an orange flashing beacon or similar when slowing and entering site access points, and similarly when exiting a site and accelerating to traffic speed;
- Where temporary driveways or protection over footpaths is installed, these will be ramped down to the existing footpath level to prevent a trip hazard to pedestrians;
- During the induction process site drivers will be reminded to be alert for pedestrians and cyclists when entering and exiting the site; and
- Additional location or activity specific measures may be adopted as appropriate.

8.3 Minimisation of traffic effects

As identified in Section 4.9, under the most conservative truck movement scenario, any increases in delay on the road network are generally modest. Furthermore, truck movements are generally confined to Transit Corridors, Urban Connector roads and state highway where the movement of trucks are common and expected.

However, it is noted that if the barging operation is selected for rock supply, a large number of trucks will be required to run through the Airport precinct and in the central city area of Wellington. Accordingly, there should be regular liaison with the traffic management co-ordination team at WCC to identify when there are significant events, roadworks or other activities that may limit network capacity or close key roads, so that barge movements can, where practical, avoid these dates.

To minimise the traffic effects from construction staff movements at the start and end of the working day, and to minimise the need for construction staff parking, options to support staff carpooling and the shuttling of staff will be implemented.

When multiple yards are in operation, drivers should be given clear instruction as to their destination to avoid unnecessary cross trips in between yards.

8.4 CentrePort

Regular liaison between the Project team and CentrePort should occur to addresses such matters as the routing of the trucks within the port area, and location of loading/ unloading areas.

In the event of an incident, emergency or breakdown with loading equipment, truck movements can be managed so as to avoid queuing or congestion on the road network due to delays from construction vehicles.

8.5 Temporary Traffic Management "Toolkit"

SSTMPs will be developed to safely and efficiently manage construction works, construction traffic and public road users (pedestrians, cyclists and vehicles). Each SSTMP will be submitted to the Road Controlling Authority for approval.

The TTM equipment employed for an SSTMP will vary depending on the works and location, however, it is intended the TTM employed would be consistent with the requirements of Guide to Temporary Traffic Management (or if / when this document is replaced by an equivalent standard).

A list of commonly used TTM devices is included in Table 8-2, but it not a comprehensive list of all available devices which could be employed. Additional or alternative TTM devices could be deployed if considered fit for purpose and approved via the TMP approval process.

Table 8-2: TTM toolkit options

Device	Specification	Usage
Traffic Cones	900mm (all types of work, except line/ road marking where 450mm height cones may be employed.	Define work or safety areas, provide separation between traffic lanes, provide pedestrian or cyclist guidance.
Cone Bars	Any equipment used to be of a standard/ design approved by NZTA.	To guide pedestrians or cyclists along temporary routes and / or around work sites.
Traffic Management signage	Signs to conform to NZGTTM/ CoPTTM L1 sign dimensions unless otherwise agreed with RCA. Temporary sign stands and bases will comply with NZTA Standard M23 Appendix F unless agreed otherwise.	To provide information, guidance and warning to road users (including pedestrians and cyclists).
Temporary Road Markings	As per appropriate requirements in the Traffic Control Devices manual or as otherwise agreed with the RCA	Particularly for long term TTM, road markings may be modified, removed or installed to provide for better guidance of road users, e.g., temporary lane markings. This may include refreshing existing road markings.
Temporary Barriers	Any barrier will conform to NZTA Standard M23 for the speed environment in which it is to be used. Where barriers are to be installed, design shall be undertaken by an appropriately qualified person	To provide separation between work areas and other road users (including pedestrians and cyclists.
Temporary Speed limits (TSL).	Signage and extent of TSL to conform to the guidance of Section 7 of the Setting of Speed Limits Rule 2024, and the Guide to Temporary Traffic Management and be approved by RCA.	Temporary speed limits may be deployed to allow for specific forms of traffic controls (e.g., Stop/Go) or allow for the safer operation of restricted lane width or general traffic safety.
Temporary Speed Humps	Any equipment used to be of a standard/ design approved by NZTA.	To slow traffic (e.g., to achieve / encourage compliance with a TSL).

Device	Specification	Usage
Manual Traffic Controllers/ Temporary Traffic Lights.	Any equipment used to be of a standard/ design approved by NZTA.	To stop traffic or control traffic to manage traffic flows at intersections (e.g., to manage/ minimise delays for certain turn movements) or the allow for the specific movements of works vehicles (e.g., reverse manoeuvres or the manoeuvring of overdimension vehicles.

8.6 Road signs

All temporary or permanent signage erected to manage traffic during the construction works should comply with the relevant standards in CoPTTM/ NZGTTM or the Traffic Control Devices Manual.

Where special / non-standard signage is required, designs shall be submitted to the relevant road controlling authority for approval prior to installation.

8.7 Road cleanliness

Under the direction of the STMS, the areas around the site will be inspected on at least a once-daily basis to ensure that the construction process has not created any hazards for the public. It is noted that the specific inspection frequency or the timing of inspections may need to vary to accommodate the actual operations on a specific day and weather conditions (e.g. high winds are more likely to pick up and disperse dust / debris). The Project will have a road sweeper vehicle on hand, which will be deployed on an as required basis to clean roads within a one kilometre (1km) radius of the Southern Seawall site on Moa Point Road.

Hard surface temporary roads will be constructed at the earliest convenience to mitigate vehicles tracking dirt to, from and through the site. Where trucks are required to travel over exposed ground, a wheel wash or other truck cleaning process should be in place to clean trucks (particularly the wheels) before exiting the yards to prevent deposition of mud, dirt and other debris onto the road network.

If debris is dropped onto the road, then it should be cleared as quickly as practicable, using an experienced contractor operating under an approved SSTMP.

Where loads are loose and may be dispersed from the truck by air / movement during haulage, these loads should be covered appropriately prior to the truck leaving the site.

8.8 Truck waiting

Trucks waiting on the public road network will not be accepted. Sufficient area will be made available within the construction yards, in particular the MGC Yard and Southern Seawall site, to allow for trucks to wait for unloading/ loading as necessary.

During high traffic movement days, truck waiting areas will be available on-site, and direct communication links will be provided between the site, trucks and dispatch points to manage the arrival rate of trucks to prevent queuing on public roads and to allow safe movement.

8.9 Signage and fencing inspection

Under the direction of the STMS, all signage (including fixed signage) and fencing associated with the construction works will be inspected at least once weekly to ensure it remains fit for purpose. The inspection will include consideration of potential vegetation obstructions to signage sightlines, vandalism of fencing and signage, and corrosion.

Additional inspections should occur in advance and after events or other activities which may bring additional members of the public near the vicinity of the Project. Additional inspections should occur in advance of, and after severe weather events to ensure the security and safety of signage, fencing and other TTM equipment, and to minimise the potential for loose equipment to injure members of the public or cause other damage. Following a severe weather event, inspections should be undertaken to ensure that any damaged or missing equipment is replaced or repaired.

TTM signage (including fixed signage) in the road corridor will be inspected on a daily basis. Where TTM signage is redundant or not required, that signage will either be removed or covered. This will assist in preventing road users from seeing irrelevant or inconsistent signage and help in managing the potential for theft or vandalism of TTM equipment. Where existing permanent signage would display a message that contradicts the TTM signage, the existing signage will be covered as necessary.

Where signage or fencing has been damaged, faded or is deteriorated such that it is ineffective, it will be repaired or replaced.

Where TTM equipment is missing, steps will be taken to remedy any such deficiencies as soon as practical.

8.10 Road condition surveys

A pre-construction road condition survey will be carried out on roads likely to be impacted by the construction works (scope to be agreed by discussion between WCC, WIAL and the Project team). This survey may include Stewart Duff Drive, Moa Point Road (between Stewart Duff Drive and Lyall Parade), Lyall Parade (between Moa Point Road and Tirangi Road), Tirangi Road (south of George Bolt Road), and George Bolt Road. An appropriate WCC representative will be invited to participate in the inspection.

The survey will include all parts of the road including the berms, footpaths etc. A full video record will be made, and the inspection focussed on identifying signs of existing deterioration of road pavements, berms and street furniture. Any identified problems will be recorded and located by running distance and accompanied by photographic evidence.

The pre-construction road condition survey will be reported to WCC for validation and approval of the existing conditions.

Re-inspection will be undertaken at the completion of each construction stage, using the same methodology as the preconstruction survey, and conditions compared with the pre-construction records. Any identified differences will be identified and discussed with WCC, and actions agreed to make repairs.

While the Project will result in increased truck movements on the highlighted roads, there will already be a base and ongoing usage of these roads by other heavy vehicles not related to the Project. Determining specifically if a particular example of deterioration is related to the Project or other general usage is hence likely to be problematic. Subject to agreement with relevant road control authorities, appropriate maintenance costs based on the relative increase in heavy vehicle volumes, may be a pragmatic methodology for assigning cost.

9 Training and awareness

9.1 Induction

Every staff member and sub-contractor on the Project will undergo an induction prior to them commencing work to make them aware of the Project's commitments and obligations.

The induction will include a briefing on the key aspects of the CTMP, with attention given to the following matters:

- Safe and defensive driving principles, and to be alert for vulnerable users (e.g. cyclists);
- Approved traffic routes and access locations;
- Information on any traffic operation restrictions (e.g. overdimension routes or WIAL operational requirements);
- Information on any adjacent road / construction works (if applicable);
- Information on parking locations;
- Information on staff shuttles;
- Incident reporting protocols; and
- Emergency contacts.

9.2 Training

Training of a more comprehensive nature will be provided to key staff at the beginning of the Project or when they start the Project.

Training topics covered will include:

- Training (and refresher training) under the Waka Kotahi Temporary Traffic Management training and competency model to the appropriate level for the staff role and function (e.g. Site Traffic Management Specialist);
- Health & Safety training specific to their role; and
- Specific training on any consent requirements in relation to the CTMP.

9.3 Visitors

The Project is relatively unique, and there may be visitors who would like to visit the site. Prior to making a visit, all visitors should be provided with clear instructions as to where to access the site, and where to park (refer to Section 6). Depending on circumstance (e.g. during live construction works), it may be appropriate to direct visitors to park in an off-site carpark and be transported by site staff to site rather than have unfamiliar drivers access the site.

10 Review and update

This CTMP has been based on the proposed methodology and information available at the time of writing. A review of this CTMP should be undertaken by the Project Management team 3 to 6 months following commencement of the Project. The review should take into consideration the following matters, but need not be limited to these matters:

- Compliance with the Project consent conditions, and any other relevant management plans;
- Any significant changes to construction activities or methods;
- Key changes to roles and responsibilities within the Project team;
- Results of inspections, monitoring and reporting procedures associated with the assessment of effects during construction;
- Comments or recommendations from WCC, NZTA, WIAL or their representatives; and
- Unresolved complaints and any response to complaints and remedial action taken to address the complaint.

Any material updates to the CTMP will be submitted to the Compliance Manager at WCC for certification at least ten working days prior to any changes taking effect. If WCC does not provide a certification decision within 10 working days of receipt of the change, this change will be deemed to be certified.

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