BEFORE THE INDEPENDENT HEARINGS PANEL
OF AUCKLAND COUNCIL

I MUA NGĀ KAIKŌMIHANA MOTUHAKA
I TE TĀMAKI MAKAURAU ROHE

UNDER	the Resource Management Act 1991 ("**RMA**")
AND	
IN THE MATTER	of an application to Auckland Council by Watercare Services Limited ("**Watercare**") for a resource consent to construct, commission, operate and maintain a wastewater tunnel and associated activities in Herne Bay, Auckland ("**Project**")

STATEMENT OF EVIDENCE OF COLIN ROBERT SHIELDS ON BEHALF OF WATERCARE SERVICES LIMITED (TRAFFIC)

2 FEBRUARY 2024

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1. EXECUTIVE SUMMARY

1.1 My full name is Colin Robert Shields and I am a Senior Principal Transport Planner at Tonkin & Taylor Limited.

1.2 I was engaged by Watercare in December 2022 to undertake an Integrated Transport Assessment ("**ITA**") of the potential traffic effects resulting from the Project. The Project involves the construction and operation of a new wastewater transfer pipeline, in Herne Bay, Auckland. The new pipeline is proposed to connect to the Central Interceptor ("**CI**") in Point Erin Park**.**

Existing transport conditions

1.3 On the whole, I consider that the roads along the Project route are not congested, which is not unsurprising given they are low flow roads serving as residential access. Congestion is however evident during peak periods on Sarsfield Street (between Shelly Beach Road and Curran Street) which is due to congestion backing up from the State Highway 1 ("**SH1**") on ramp signals on Curran Street. There is no congestion during the off peak periods.

1.4 Access to the proposed Construction Support Areas 1 and 2 at Salisbury Reserve and 94a – b Shelley Beach Road respectively (referred to as "**CSA1**" and "**CSA2**" in my evidence) are via existing higher trafficked Collector or Arterial roads. I consider that these are suitable roads for the proposed movements in and out of CSA1 and CSA2 since Arterials and Collectors are a higher classification of roads than local roads and their primary function is to accommodate large volumes of through traffic compared to local roads which have lower traffic volumes and provide access primarily to private properties.

1.5 Overall, I consider that the number of crashes, as well as the severity of the crashes, is low on the Project route and on the potential traffic diversion routes and therefore I conclude that there are no inherent safety issues present in the vicinity of the Project, CSA1, CSA2 or on the potential traffic diversion routes.

Assessment of effects - Project construction vehicles

1.6 I consider that the potential traffic impact of the temporary additional construction vehicles associated with the Project on the surrounding road network during usual construction hours will be less than minor.

1.7 I consider that the traffic impact of the temporary additional construction vehicles on the surrounding road network outside of usual construction hours is minimal since these activities will take place at off peak times on the surrounding road network (when there is no congestion).

1.8 In terms of road safety impact, given the low number of the additional construction vehicles on the surrounding road network, I consider this will have a negligible impact on the safety of the surrounding residential road network.

Assessment of effects at each construction site and associated diversion routes

1.9 Based on the assessments carried out as part of the ITA, I have identified that the Project will have a less than minor effect on the surrounding transport network as a result of the proposed activities at CSA1, CSA2, Shaft 1 (on Salisbury Road and on Curran Street with the eastbound closure of Sarsfield Street), interception Shafts SE01, SE02, SE03, and SE04, Shaft 5, Shaft 6 and Shaft 7.

1.10 Based on the assessments carried out as part of the ITA, I have identified that the Project will have a temporary minor effect on the surrounding road network as a result of the construction activities at Shaft 8.

1.11 Based on the assessments carried out as part of the ITA, I have identified that the Project will have a temporary more than minor effect on Emmett Street (as a result of the Shaft 1 eastbound closure of Sarsfield Street), Shaft 2, Shaft 3, Shaft 4.

1.12 Based on the assessments carried out as part of the ITA, I have identified that the Project will have a temporary significant adverse effect on Emmett Street and Curran Street (between Emmett Street and Sarsfield Street) as a result of the full closure of Sarsfield Street as part of the Shaft 1 works.

Mitigation Measures

1.13 I have identified that there are potentially temporary traffic effects resulting from construction of the Project which I consider can be managed through a Construction Traffic Management Plan ("**CTMP**"). In response to Auckland Council's ("**Council**") s92 request, I have prepared a draft CTMP. It is also a requirement to submit a CTMP to Council for certification as set out in

proposed conditions of consent as are appended to Ms Drury's evidence ("**Proposed Conditions**").[1]

1.14 In my opinion, implementation of the CTMP proposed measures will appropriately mitigate the traffic effects of the Project construction activities on the Project route and on the diversion routes**.**

1.15 In my opinion there are no transport engineering or transport planning reasons that would preclude construction works associated with the Project. I consider that any effects can be appropriately managed and mitigated through the implementation of the CTMP. I therefore consider that the resource consents being sought by Watercare for the Project should be approved.

2. INTRODUCTION

Qualifications and Experience

2.1 My full name is Colin Robert Shields. I am a Senior Principal Transport Planner at Tonkin & Taylor Limited ("**T+T**"), a position I have held since November 2021. Before this I was employed for three years as a Senior Engineer at Candor 3, working on infrastructure and land development projects throughout New Zealand and prior to this I spent 30 years with UK based engineering organisations working on transport and infrastructure projects across UK, Europe, Africa, Central Asia and the Middle East.

2.2 I have a Master of Science in Transport Engineering from the University of Newcastle Upon Tyne (UK). I am a Chartered Professional Engineer (CPEng) with Engineering NZ and am a Chartered Member of Engineering NZ (CMEngNZ).

2.3 I have 35 years of transport planning and engineering experience, which I have gained both within New Zealand and internationally. I have extensive experience managing the appraisal, design, and delivery of a wide range of transport projects, including in providing transport planning inputs to master planning exercises, consenting processes (under the RMA), designs and delivery of roading, infrastructure and land development projects. I also have extensive experience in preparing CTMPs.

2.4 In recent years, I have been involved in the following relevant projects:

[1] Proposed Condition 45.

(a) CI Extension - I was engaged by Watercare to prepare an ITA to support the resource consent application that was granted by Auckland Council in September 2023. This project extends the CI wastewater conveyance and storage tunnel from Tawariki Street in Grey Lynn to a new terminal shaft in Point Erin in Herne Bay.

(b) Auckland Regional Landfill – I was engaged by Waste Management NZ to prepare a CTMP for the construction of the proposed Auckland Regional Landfill located between Warkworth and Wellsford.

(c) Wind and solar farms – I have prepared ITA's, port to site assessments and CTMP's for various wind and solar farms across NZ.

(d) I have prepared various ITA's for Kāinga Ora for a wide range of residential developments within Auckland, Northland, Wellington and Nelson.

(e) I have prepared various ITA's for the Ministry of Education to support the designation of sites for new schools in Auckland, Kaiwaka, Levin and Christchurch.

2.5 I am very familiar with the construction aspects and elements of wastewater infrastructure and am familiar with the Herne Bay area in Auckland.

Involvement in the Herne Bay Tunnel Project

2.6 I have been engaged by Watercare to undertake an assessment of the potential traffic effects resulting from the Project. The Project involves the construction and operation of a new wastewater transfer pipeline, in Herne Bay, Auckland. The new pipeline is proposed to connect to the CI in Point Erin Park.

2.7 I have been involved in the Project since December 2022 when I was engaged to prepare an ITA which is included as Appendix F to the resource consent application documents submitted with Auckland Council in June 2023. I also prepared a Draft CTMP (dated 24 October 2023) which was provided in response to the Council's s92 request for further information. This CTMP remains a draft and will be updated and finalised prior to construction commencing, should consent be granted for the Project.

2.8 I am familiar with the Project site and the surrounding transport network. I have visited the Project site on numerous occasions since December 2022, including most recently on 22 November 2023.

Code of conduct

2.9 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the latest Environment Court Practice Note 2023 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

3.1 The purpose of my evidence is to address the potential construction traffic effects associated with the Project. With respect to potential construction traffic effects, these are summarised in the ITA included with the application. The ITA has informed my evidence, as well as the Draft CTMP.

3.2 This evidence highlights the key points from the ITA and provides any updates as required, including in relation to addressing the submissions that have since been received. Between the ITA and the s92 response, and now this statement of evidence, I confirm I have considered the Project as a whole, as relevant to its potential construction traffic effects.

3.3 This statement of evidence will:

(a) Provide an explanation of the methodology used in undertaking the traffic assessment of the Project;

(b) Describe the locations for the relevant Project works and wider context of the surrounding area;

(c) Outline the proposed activities to occur, as they are relevant to my assessments;

(d) Summarise my assessment of potential effects on traffic in the Herne Bay area and my recommendations to address those effects, as set out in my ITA dated 30 June 2023;

(e) Respond to matters raised in the Council Officer's Section 42A Report for the Project;

(f) Respond to the submissions received in relation to traffic effects in the Herne Bay area; and

(g) Comment on the Proposed Conditions of consent.

4. METHODOLOGY

4.1 I was engaged to prepare an ITA to assess the potential temporary traffic effects associated with construction of the Project. The ITA is included as Appendix F to the resource consent application documents submitted with Auckland Council in June 2023.

4.2 In the ITA I have considered and set out details of the existing transport conditions on both the Project route and on the roads which may be used as diversion routes as a result of road closures arising from the proposed construction activities. I have then considered how the proposed construction methodology might impact on the existing environment and have assessed the transport and safety effects of the proposed construction activity works.

4.3 Following submission of the ITA, item 38 of the Council's s92 request, sought that a draft CTMP be developed. The s92 request asked for a draft CTMP to address the usual construction traffic management requirements, and the following concerns in particular:

(a) The additional traffic volumes on diversion routes and the impact on these routes during existing peak hours, and in particular, the cumulative traffic effects on Jervois Road.

(b) Whether the diverted traffic volumes will exacerbate crash risks along Jervois Road.

(c) Any necessary mitigation to address safety concerns such as the higher likelihood of any unsafe right turns out of existing intersections to Jervois Road as a consequence of the construction of Shaft 2 and the estimated partial road closure for up to 251 days.

(d) The safety of school children and any necessary mitigation measures given the proposed diversion route along Curran Street with schools nearby.

4.4 In response to Council's s92 request, I prepared the draft CTMP dated 24 October 2023, specifically addressing points (a) to (d) above. As detailed in Section 6.1 of the draft CTMP, following lodgement of the ITA in June 2023,

there were minor updates to the anticipated number of construction vehicles. The draft CTMP provided a summary of the changes in construction vehicles and reassessed the transport effects and concluded that this did not alter the ITA findings on the assessment of transport effects.

4.5 Sections 5 to 8 below provide details of the findings from the ITA and the s92/draft CTMP response in terms of a description of the existing environment, the assessment of transport effects and proposed mitigation.

5. EXISTING ENVIRONMENT

5.1 A brief summary of the existing environment is provided in the following section of my evidence. A more detailed description of the existing traffic environment can be found in section 2 of the ITA.

5.2 The Project is located within Herne Bay, Auckland. Herne Bay is a predominantly residential suburb on the western fringe of the Auckland City Centre. The Project area is bound by Point Erin Park in the east, the edge of the Waitematā Harbour to the north and Marine Parade and Jervois Road to the south. The project area is shown in Figure 1 below:

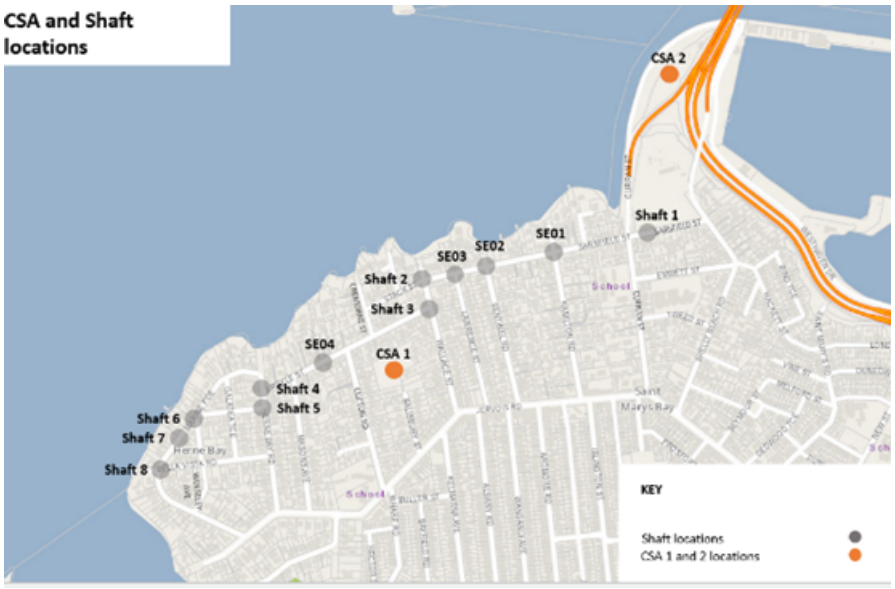

Figure 1: Project site location

Roads on the proposed tunnel alignment

5.3 The new wastewater pipeline is proposed to be constructed within the road corridors.

5.4 Carriageway widths of roads on the Project route typically range from 7.5m to 11m, with the roads mainly used for residential access. Most streets provide for parallel parking, either fully delineated or within the shoulder. There are footpaths and berms on both sides of the roads but there are limited cycle facilities.

5.5 All posted speed limits for roads along the Project route are 50km/h. Most of the roads have very low traffic volumes (typically less than 1,800 vehicles per day), except Sarsfield Street (which is up to 4,200 vehicles day). This reflects the predominantly local residential access nature of the roads potentially impacted by the Project.

5.6 Sarsfield Street serves a greater volume of traffic, being a Collector road. Most intersections have low traffic volumes and are either give-way controlled (with some having no signs or markings) and six are Stop controlled. On the whole, I consider that the roads along the Project route are not congested, which is not unsurprising given they are low flow roads serving as residential access. Congestion is however evident during peak periods on Sarsfield Street (between Shelly Beach Road and Curran Street) which is due to congestion backing up from the SH1 on ramp signals on Curran Street. There is no congestion during the off peak periods.

Roads adjacent to the proposed construction support areas

5.7 CSA1 at Salisbury Reserve is accessed from Argyle Street, Sarsfield Street and Wallace Street which are Collector roads. Access to/from CSA2 at 94A and 94B Shelly Beach Road is from the Curran Street/SH1 on ramp which is an Arterial. As such, access to CSA1 and CSA2 are via existing higher trafficked Collector or Arterial roads. I consider that these are suitable for the proposed movements in and out of CSA1 and CSA2 since Arterials and Collectors are a higher classification of road than local roads and their primary function is to accommodate large volumes of through traffic compared to local roads which have lower traffic volumes and provide access primarily to private properties.

Pedestrian and cycle facilities

5.8 In terms of pedestrian facilities on the Project route and at CSA1, there are footpaths and berms on both sides of the roads and at numerous locations there are raised platforms to assist pedestrian crossing movements. There are no footpaths adjacent to CSA2.

5.9 There are limited cycleways on the Project route and these consist of a shared path through Salisbury Reserve (which will remain open during the Project construction) whilst Salisbury Street, Argyle Street, and Sarsfield Street are classified by Auckland Transport ("**AT**") as "quiet routes" for cyclists to use. There are no cycleways adjacent to CSA2. Adjacent to the Project route there are pedestrian accesses to beaches, reserves and playgrounds.

Surrounding transport network

5.10 The carriageway widths of roads surrounding the tunnel alignment (which may be used for potential diversion routes when certain portions of the road network is closed due to construction activities as described in my evidence at section 7 below), vary between 7m to 18m.

5.11 The roads in the surrounding transport network are all two-way roads and a mixture of Local, Collector and Arterial roads. Most of the roads on potential temporary diversion routes are uncongested and have very low traffic volumes (typically less than 1,800 vehicles per day), except Jervois Road (19,200 vehicles/day) and Curran Street (8,200 vehicles/day). This reflects the predominantly local residential access of the roads potentially impacted by the Project. Jervois Road and Curran Street serve a greater volume of traffic being Arterials.

Public transport

5.12 With respect to public transport, there are no scheduled bus services on the Project route. However, there are several bus stops on Jervois Road approximately 500m to the south of the proposed works. These bus stops service routes 101 and the OuterLink. Bus numbers 866 and 966 route via Curran Street and Shelly Beach Road to/from the North Shore.

Road safety

5.13 An assessment of the road safety record of the surrounding road network was undertaken using the NZTA Crash Analysis System ("**CAS**"). Crash history was assessed for the period from 2017 – 2023 (inclusive) on the route of the Project (noting that as reported in the ITA, some 2022 and 2023 data is incomplete due to a delay between crashes and upload of their data). Overall, I consider that the number of crashes, as well as the severity of the crashes, is low and therefore I conclude that there are no inherent safety issues present in the vicinity of the Project, CSA1, CSA2 or on the potential diversion routes.

Parking

5.14 All of the properties located adjacent to the proposed construction sites for the shafts have off street parking available in garages and/or driveways. On the Project route, parallel on street parking is available either fully delineated or within the shoulder. On Sarsfield Street and Wallace Street, on street parking is time limited to 120 minutes Monday to Friday between 8am – 6pm. On the rest of the Project route, on street parking is unrestricted.

5.15 As shown in Figure 2 below, residents on Sarsfield Street and Wallace Street are within the Herne Bay resident parking zone and, subject to payment, are able to purchase a resident parking permit to enable them to park in a time restricted parking area without the need to comply with the restriction.

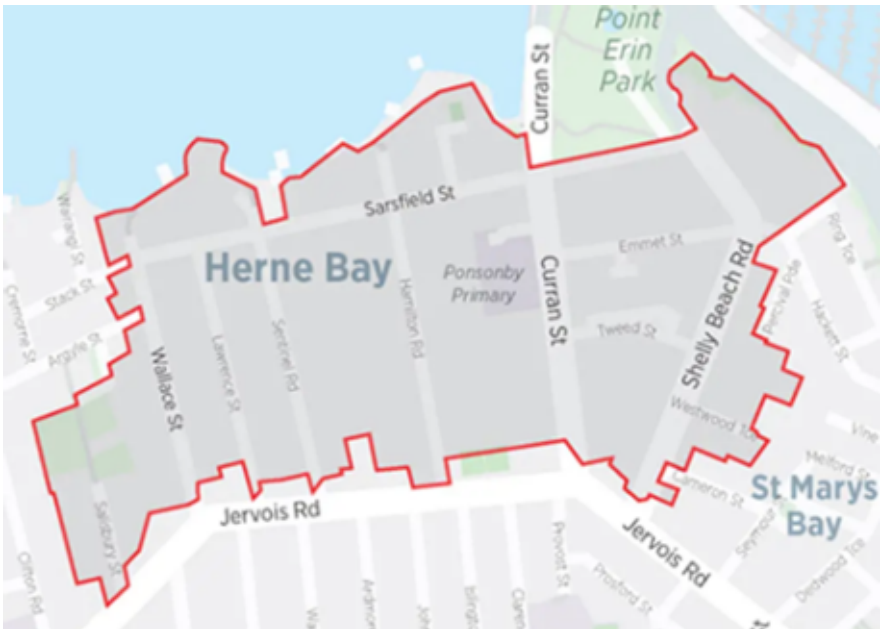

Figure 2: Resident parking permit Herne Bay Area. Source: Herne Bay resident parking (at.govt.nz)

5.16 Resident parking permits are not required on the other streets on the Project route since there are no time restrictions that residents need to be exempt from.

5.17 Resident parking permits currently cost $70 per annum, with the renewal date being the 27 April of each year. Permits are capped to 85% of the number of parking spaces in the zone and are allocated one at a time, based on the following priorities (where 1 = highest and 6 = lowest).

1. House on a single title without off-street parking. Or an apartment building built before 1944 without off-street parking.

2. House on a single title with one off-street parking space.

3. All other houses or townhouses.

4. Apartments.

5. Community groups, schools, education providers.

6. Businesses.

5.18 The resident parking permit system operates on a first-in, first-served basis and does not guarantee that a parking space will be available and in particular does not guarantee that a space will be available adjacent to the resident's property. Furthermore, the Council Residential Parking Policy2 recognises that there is no inherent legal right for vehicle owners to park on public roads and that the resident parking permit is considered a privilege rather than a right.

5.19 Subsequent to the ITA and Draft CTMP, a survey of the usage of existing on street parking along the Project route was commissioned. The results are presented in **Appendix A** and discussed in paragraph 7.75 below.

6. PROPOSED ACTIVITIES

6.1 A summary of the proposed construction traffic activities associated with the Project is provided below. A more detailed description of the proposed activities relevant to this evidence can be found at section 3 and Appendix C of the ITA, and in the evidence of Mr Bishop.[3]

6.2 The Project works involve:

(a) Installation of approximately 1.5 km of 2.1m internal diameter trunk sewer line, constructed via a closed face tunnel-boring machine ("**TBM**");

2 Residential Parking Policy November 2001 (at.govt.nz).

3 Evidence of Mr Bishop dated 2 February 2024 at section 4.

(b) Installation of approximately 150m of 600mm diameter trunk sewer within Marine Parade, constructed via open cut trenching;

(c) Construction of eight primary tunnel shafts, ranging in diameter from 3.5m to 11m, along with four 3.5m diameter intercepting shafts for engineered overflow points (**"EOP"**) connections;

(d) Installation of eight connections to existing EOPs, including three interception pipes;

(e) Occupation of two CSAs at Salisbury Reserve and 94a – 94b Shelly Beach Road, referred to as CSA1 and CSA2 respectively; and

(f) Relocation and reinstatement of utilities as required.

6.3 As detailed in section 7 of my evidence below, the construction activities result in some sections of roads being closed temporarily and hence the potential for construction effects has been assessed both on the Project route and any resultant diversion routes.

6.4 For the assessment of transport effects, I highlight the following key points:

(a) The two CSAs will act as hubs for the satellite shaft sites (ie where the shafts are being constructed) and will provide for short term storage of plant and materials. This will enable a reduction of materials and equipment stored at each satellite site and reduce the size and number of trucks on the local residential street network.

(b) At each satellite site, a construction site will be established with the footprint minimised by using the CSAs for material and plant storage, thus minimising the impact on local resident vehicle and pedestrian access.

(c) As works are completed at each satellite site, the construction site will be de-established and returned to public use, thus minimising the number of construction sites open at any one time.

(d) It is anticipated that two or more satellite site works may be carried out concurrently where there is no overlap of traffic management arrangements.

6.5 General construction works are proposed to occur between 7am and 6pm, Monday to Friday and 8am – 6pm on Saturdays. Site mobilisation and pack down works are proposed to occur 30 minutes before and after these

windows. Works outside of standard hours will be limited as far as is practicable. Based on experience at other Watercare sites, should this occur then it will take place intermittently and for a limited period of time. From a transport effects perspective, I consider that movements outside of peak times will have less effect on traffic movements on the surrounding roads, and as such, the ITA did not further consider out of hours traffic movements.

7. ASSESSMENT OF POTENTIAL EFFECTS

7.1 The potential traffic effects of construction works on the road network, (including impacts on pedestrians, cyclists, parking and property access) have been assessed which I outline below. Section 8 of my evidence provides details of proposed mitigation, as outlined in the Draft CTMP.

Construction traffic volumes

7.2 The Project transport movements will be associated with activities including delivery of plant and construction materials, staff access, site establishment, piling, removal of material excavated during the construction of the shafts, concrete pours, TBM removal, trenching, demobilisation and site remediation. Light vehicle movements for construction, management and supervision staff, inbound and outbound, are likely to be tidal due to staff arrivals at the start of the shift (ie 6:30am) and departures at the end of the shift (ie 6:30pm) which occur before and after the adjacent transport network AM and PM peak periods.

7.3 Within the ITA I estimated that on a typical day, there would be the following construction traffic volumes:

(a) On the residential streets within the Project area east of Salisbury Reserve there will be an additional 46 vehicles/day with the construction traffic. Over a 12 hour working day this represents four vehicles per hour or one vehicle approximately every 15 minutes.

(b) On the residential streets within the Project area west of Salisbury Reserve there will be an additional 21 vehicles/day with the construction traffic. Over a 12 hour working day this represents under two vehicles per hour.

(c) On key Arterials and Collectors such as Curran Street, Sarsfield Street and Shelly Beach Road, there will be an additional 23 vehicles/day with the construction traffic. Over a 12 hour working

day this represents just under two vehicles per hour or one vehicle approximately every 30 minutes.

(d) On SH1 and the on/off ramps at the Onewa interchange, there will be an additional 15 vehicles/day with the construction traffic. Over a 12 hour working day this represents just over one vehicle per hour.

Assessment of transport effects of the Project construction vehicles

7.4 I consider that the traffic impact of the temporary additional construction vehicles associated with the Project on the surrounding road network during usual construction hours to be less than minor as set out below:

(a) **Residential streets within the Project area** – On these existing low flow roads, construction traffic will temporarily increase traffic volumes by between 3% and 13%. There are no existing congestion issues on these roads and hence the additional construction traffic will not impact the capacity of these roads. These increases represent approximately two additional vehicles every hour, which I consider is negligible. The negligible increase in overall hourly and daily traffic movements therefore should not result in a noticeable increase in congestion or unreasonable delays for road users on these residential roads.

(b) **Collectors, Arterials and SH1** - Construction traffic will temporarily increase traffic volumes by typically less than 1% and this increase in vehicles is well within the range of typical day to day fluctuations in traffic flow of 5% to 10% that regularly occur on the road network. These roads are already performing a movement function. I consider this to be a negligible increase in daily traffic movements which should not result in a noticeable increase in congestion or unreasonable delays for road users on the Collectors, Arterials and SH1.

7.5 I consider that the traffic impact of the temporary additional construction vehicles on the surrounding road network outside of usual construction hours is minimal since these activities will take place at off peak times on the surrounding road network (when there is no congestion).

7.6 In terms of road safety impact, given the low number of the additional construction vehicles on the surrounding road network, I consider this to have a negligible impact on the safety of the surrounding residential road network.

Updated construction traffic volumes and re-assessment of effects of construction traffic

7.7 As detailed in Section 6.1 of the draft CTMP, subsequent to submission of the ITA, there were minor updates to the anticipated number of construction vehicles. The draft CTMP provides a summary of these changes and includes an assessment of whether this altered the ITA findings on the assessment of transport effects. In summary:

(a) On the residential streets within the Project area, east of Salisbury Reserve there will be an additional 76 vehicles/day with the construction traffic. Over a 12-hour working day this represents just over six vehicles per hour (noting the ITA, as summarised at paragraph 7.3, above indicated four vehicles per hour) or one vehicle approximately every 10 minutes.

(b) On the residential streets within the Project area, west of Salisbury Reserve there will be an additional 51 vehicles/day with the construction traffic. Over a 12-hour working day this represents just over four vehicles per hour (noting the ITA, as summarised at paragraph 7.3, above indicated two vehicles per hour) or one vehicle approximately every 15 minutes.

(c) On Arterials and Collectors such as Curran Street, Sarsfield Street and Shelly Beach Road, there will be an additional 27 vehicles/day with the construction traffic. Over a 12-hour working day this represents just over two vehicles per hour (noting the ITA, as summarised at paragraph 7.3, above indicated just under two vehicles per hour).

(d) On SH1 and on/off ramps at Onewa interchange, there will be an additional 21 vehicles/day with the construction traffic. Over a 12-hour working day this represents just under two vehicles per hour

(noting the ITA, as summarised in paragraph 7.3, above indicated just over one vehicle per hour).

7.8 In terms of overall increases in traffic on the project route, these additional trips will only contribute an increase of up to 1% of total movements on the Northern Motorway and Arterials (no change to ITA findings presented in paragraph 7.4 above), and between 2% and 16% on residential streets (noting this is only a minor change to the ITA findings presented in paragraph 7.4 above). Overall, I consider that the number of construction vehicles on the Project route with the revised construction vehicle numbers is very similar to that used in the assessment of traffic effects reported in the ITA. As such, I consider that the assessment of effects is unchanged to that reported in the ITA.

Assessment of effects at each construction site and associated diversion routes

7.9 I set out below the findings from the ITA (updated where required to include the subsequent s92 responses) for the assessment of effects for each construction site using the following categories of effects:

(a) Vehicle access to residential properties.

(b) Pedestrians and cyclists.

(c) Pedestrian access to reserves/parks.

(d) Public Transport ("**PT"**).

(e) On street parking.

(f) Refuse/delivery access.

CSA1

7.10 CSA1 will be in operation for no more than two years and no road closures are required. My assessment of potential transport related temporary effects of CSA1 as detailed in the ITA is presented below in Table 1:

Table 1: Assessment of potential temporary effects of CSA1

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	No impact	Residential access not impacted.
Pedestrians and cyclists	Pedestrians – minimal Cyclists - no impact	One of the three existing pedestrian accesses to Salisbury Reserve will be closed for circa two years but pedestrian access remains at the existing other two pedestrian accesses. Existing raised platform will be removed for circa two years and reinstated upon completion of works. No impact on shared path through the reserve. No impact on Sarsfield Street AT classification as a quiet road for cycling.
Pedestrian access to reserves/parks	Minimal	One of the three existing pedestrian accesses to Salisbury Reserve will be closed for circa two years but pedestrian access remains at the existing other two pedestrian accesses. The two existing pedestrian accesses are only circa 50m apart and the increased walking time of circa 40 seconds for those using the secondary access is considered to be a minimal impact for pedestrians.
Public Transport	No impact	No existing PT services.
On street parking	Minimal	Will result in loss of some on street parking adjacent to the proposed CSA1 access for circa two years but residential properties have off street parking.
Refuse/delivery access	No impact	No closures/restrictions.
Overall Assessment	**Less than minor impact**	

CSA2

7.11 CSA2 will be in operation for no more than two years. The site has been previously used by Healthy Waters as a shaft construction site for the St Marys Bay Water Quality Improvement project and no road closures are required. My assessment of potential temporary effects of CSA2 as detailed in the ITA is presented below in Table 2:

Table 2: Assessment of potential temporary effects of CSA2

Criteria	Impact Assessment	Comments
Vehicle access to residential properties.	No impact	No residential properties.
Pedestrians and cyclists	No impact	No pedestrian or cycle routes. Pedestrian access to the area east of the CSA will be restricted to ensure pedestrians walking in Point Erin Park and along the path adjacent to SH1, do not enter the site.
Pedestrian access to reserves/parks	No impact	No pedestrian access to Point Erin Park.
Public transport.	No impact	No impact on bus services using Curran Street.
On street parking.	No impact	No existing parking.
Refuse/delivery access	No impact	No impact.
Overall Assessment	**Less than minor impact**	

Shaft 1 Sarsfield Street (east of Curran Street) - traffic effects on Sarsfield Street

7.12 As detailed in sections 4.2 and 6.5.5 of the ITA, the Project Shaft 1 construction works and the Point Erin CI construction works could potentially overlap. To ensure that the worst-case effects were considered, a cumulative assessment of both projects proceeding at the same time was carried out.

7.13 The predicted duration for the construction works at Shaft 1 is 247 days which will require approximately 100 days of Sarsfield Street being closed in both directions between Curran Street and Shelly Beach Road. Resident access and Point Erin Park vehicle access will be retained to/from Shelly Beach Road. For the remaining 147 days, Sarsfield Street will need to be closed eastbound (ie from Curran Street to Shelly Beach Road) with resident access and Point Erin Park vehicle access retained to/from Shelly Beach Road and to Curran Street.

7.14 In terms of the impact on the Project route for both full closure and eastbound closure of Sarsfield Street my assessment of temporary effects as detailed in the ITA is presented below in Table 3:

Table 3: Potential temporary effects of Shaft 1 construction on Sarsfield Street

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minimal	**Sarsfield Street Full closure** Sarsfield Street residents will, for circa 100 days, only be able to enter and exit their properties to and from Shelly Beach Road. The temporary diversion route outlined will need to be used to access to/from Curran Street. This will add an additional 560m to 750m journey distance or circa 1 minute additional journey time to/from Curran Street. This is considered minimal. Note # 28 and 30 Sarsfield Street driveways are off Curran Street and not directly impacted. **Sarsfield Street Eastbound closure** In addition to the above, for 147 days residents will be able to egress via Curran Street and hence the only movement that residents will not be able to make is ingress from Curran Street - the impact is considered to be minimal.
Pedestrians and cyclists	Pedestrians – minimal Cyclists – no impact	**Sarsfield Street full and eastbound closure** Sarsfield Street north side footpath temporarily closed for a distance of 100m east of Curran Street, as part of the Point Erin CI works. The effects of this closure have been assessed within the CI resource consent application. Raised platform on Sarsfield Street to be temporarily removed and reinstated upon completion of the works. Cyclists will need to use diversion route (or wheel their bike on the south side footpath). Note this section of road is not part of the AT classified quiet road for cycling.
Pedestrian access to reserves/parks	Minimal	**Sarsfield Street full and eastbound closure** Footpath into Point Erin Park by Curran Street will be closed

Criteria	Impact Assessment	Comments
		as part of the Point Erin CI works. Pedestrians will need to use the temporary park access proposed as part of the Point Erin CI works. For full closure, vehicular ingress to the Point Erin Park public car park and Point Erin Pool (open end of November to end of March) will be via Shelly Beach Road. Should drivers be accessing the car park to/from Curran Street then this will add an additional 560m journey distance or circa 1 minute additional journey time to/from Curran Street. This is considered minimal. For eastbound closure vehicles will be able to egress from the pools to both Curran Street and Shelly Beach Road.
Public transport	No impact	No existing PT services.
On street parking	Minimal	**Sarsfield Street full and eastbound closure** Result in temporary loss of circa 100m of on street parking on Sarsfield Street north side. Residential properties have off street parking but potential temporary impact on vehicles parking for Point Erin Park and Point Erin Pool.
Refuse/delivery access	Minimal	**Sarsfield Street Full closure** For the full closure, deliveries/refuse collection to Sarsfield Street only able to enter and exit the properties via Shelly Beach Road. This will add an additional 560m – 750m journey distance or circa 1 minute additional journey time to/from Curran Street. This is considered minimal. **Sarsfield Street Eastbound closure** For eastbound closure vehicles will be able to egress properties from both Curran Street and Shelly Beach Road.
Overall Assessment	**Less than minor impact on Sarsfield Street**	

Shaft 1 assessment of temporary effects on the diversion routes with full closure of Sarsfield Street

7.15 For the temporary closure of Sarsfield Street in both directions, it is anticipated that traffic will be re-routed via Emmett Street and Curran Street (between Emmett Street and Sarsfield Street). Alternative diversion routes are available to drivers depending on their origin and destination. For example drivers to/from the south (Jervois Road) area could re-route via Jervois Road/Curran Street (although this would increase traffic volumes across the Ponsonby Primary school access and pedestrian crossing) and drivers to/from the residential areas to the east could re-route via Tweed Street (although this is a narrower road and potentially unsuitable for large vehicles). On this basis I considered Emmett Street to be the preferred signed diversion route. This can be considered to be a worst case assessment since this assumes that all of the existing Sarsfield Street traffic will use the diversion route. In reality with Sarsfield Street closed, and depending on the end destination and trip purpose, drivers may re-route to an alternative choice of SH1 interchange eg, Wellington Street on ramp or Cook Street off ramp.

7.16 As identified in section 6.5.5.1 of the ITA, the temporary additional traffic from a combination of the re-routed existing Sarsfield Street traffic, the Project construction traffic and the Point Erin CI construction traffic would equate to up to 4,279 additional vehicles/day on Emmett Street. As a result of the closure of Sarsfield Street, traffic volumes will increase to 4,811, which is a 9-fold increase. Heavy vehicles will increase from the existing five heavy vehicles day to 230 heavy vehicles/day. I consider that this level of increase in traffic results in a temporary significant adverse transport impact on Emmett Street in terms of a significant increase in both the volume of traffic and of heavy vehicles, which could impact on the uncongested traffic flow conditions currently experienced and could also impact on residents' ability to safely manoeuvre in and out of their driveways.

7.17 However, it should be noted that:

(a) This is a temporary impact for only 100 days.

(b) The driveways on Emmett Street are predominantly on the north side, which reduces the amount of potential conflict points.

(c) The overall traffic level would be similar to that currently experienced on Sarsfield Street (between Shelly Beach Road and Curran Street) and there are no reported crashes on this section of Sarsfield Street, and neither am I aware of any reported issues raised by residents

having difficulty accessing their driveways. I therefore expect that Emmett Street will function safely as Sarsfield Street does currently with this level of traffic flow.

7.18 As identified in section 6.5.5.1 of the ITA, the temporary additional traffic from a combination of the re-routed existing Sarsfield Street traffic, the Project construction traffic and the Point Erin CI construction traffic would equate to up to 4,279 additional vehicles/day on Curran Street (between Emmett Street and Sarsfield Street) which is an increase of 52%. Heavy vehicles will increase from the existing 654 heavy vehicles/day to 884 heavy vehicles/day. I consider that this level of increase in traffic would result in a temporary significant adverse transport impact on Curran Street in terms of a large increase in both volumes of traffic and heavy vehicles which could impact on Ponsonby Primary School, existing peak period congestion, bus journey times and reliability on Curran Street and could also impact on Curran Street residents' ability to safely manoeuvre in and out of their driveways. However, it should be noted that:

(a) This is a temporary impact only for only 100 days.

(b) The diverted traffic flow is a maximum, worst case traffic flow since it has been assumed that all of the existing Sarsfield Street traffic will use the diversion route. In reality with Sarsfield Street closed and depending on the end destination and trip purpose, drivers may re-route to an alternative choice of SH1 interchange eg, Wellington Street on ramp/Cook Street off ramp.

(c) There would not be an increase in traffic through the existing school main access and pedestrian controlled crossing for the school, thus reducing any potential impact on school children walking to school.

(d) Section 2.3.3 of the ITA identified that very few school children walked to school on Sarsfield Street and Curran Street, thus reducing any potential impact on school children walking to school.

(e) Ponsonby Primary School operates a walking bus from Clarence Street and Jervois Road to the school, which would not be impacted by the additional traffic.

7.19 Overall, I consider that construction of Shaft 1 (which will require full closure of Sarsfield Street and diversion routes for traffic) will result in a temporary significant adverse transport impact on both Emmett Street and Curran Street (between Emmett Street and Sarsfield Street).

Shaft 1 – assessment of temporary effects on the diversion routes with partial (eastbound) Sarsfield Street closure

7.20 For the temporary eastbound closure of Sarsfield Street, it is anticipated that traffic would be re-routed via Curran Street (between Emmett Street and Sarsfield Street) and Emmett Street. As demonstrated in the ITA, the predominant direction of flow on Sarsfield Street is westbound towards Curran Street and hence the eastbound closure will result in a much lower level of traffic on the diversion routes. Furthermore, an eastbound closure will not result in any re-routing of the Project construction traffic nor of any re-routing of the Point Erin CI construction traffic. As a result of the eastbound closure of Sarsfield Street, traffic volumes will increase from 532 vehicles/day to 1074 vehicles/day and heavy vehicles will increase from the existing five heavy vehicles/day to 25 heavy vehicles/day. I consider this level of increase in traffic would result in a temporary more than minor transport impact on Emmett Street in terms of the increase in the overall volume of traffic for 147 days, but this level of increase is not expected to impact on the uncongested traffic flow conditions currently experienced nor impact on resident's ability to safely manoeuvre in and out of their driveways.

7.21 As a result of the eastbound closure of Sarsfield Street, traffic volumes will increase by 4% on Curran Street. This increase in vehicles is well within the range of typical day to day fluctuations in traffic flow of 5% to 10% that regularly occur on the road network. I consider that this negligible increase in daily traffic movements should not result in a noticeable increase in congestion or unreasonable delays for road users on Curran Street, will not impact on bus journey times and reliability (since the increase in traffic is in the opposite direction) and is unlikely to impact on residents ability to access their properties.

7.22 Overall, I consider that the period of time (147 days) when construction of Shaft 1 will require partial closure of Sarsfield Street, will result in a less than minor impact on Curran Street and a temporary more than minor impact on Emmett Street.

SE01 Interception shaft (Sarsfield Street/Hamilton Road intersection)

7.23 The predicted duration of works for SE01 is 50 days with full closure of the intersection for 20 days and partial closure for 30 days. As detailed in the ITA, my assessment of the temporary effects of SE01 on the Project route, is presented in Table 4 below:

Table 4: Potential temporary effects of SE01 Interception shaft

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minimal	Access retained, noting Hamilton Road (north) residents will have one lane for access east via Sarsfield Street.
Pedestrians and cyclists	Pedestrians – minimal Cyclists – minimal	For full closure north footpath closed but south footpath remains open. Raised platform to be partially removed and reinstated upon completion of the works. Cyclists temporarily unable to cycle on the AT designated Quiet Road of Sarsfield Street. However, cyclists can wheel their bikes the short distance of the road closure on the footpath or use the diversion route.
Pedestrian access to reserves/parks	No impact	Pedestrian access to Hamilton Beach Reserve retained.
Public transport	No impact	No existing PT services.
On street parking	Minimal	Will result in temporary loss of small amount of on street parking on Sarsfield Street and Hamilton Road. Residential properties have off street parking. On street parking will remain available to use on Sarsfield Street and Hamilton Road either side of the shaft construction.
Refuse/delivery access	Minimal	Use diversion routes.
Overall Assessment	**Less than minor impact**	

7.24 For the temporary closure of Sarsfield Street/Hamilton Road intersection, it is anticipated that traffic would be re-routed via Sentinel Road, Jervois Road or Curran Street. As detailed in the ITA, when the full closure is in place, the diverted additional traffic could increase delays in the peak periods on Jervois Road and Curran Street. However, given the short duration (20 days) of this full closure, the short section of Jervois Road impacted and the uncongested nature of these routes in the off peak, I consider the impact is minimal. On the uncongested Sentinel Road, I consider the additional traffic for a temporary period to only have a minimal impact on the capacity of this road and should not result in a noticeable increase in congestion or unreasonable delays for road users. Partial closure will result in westbound Sarsfield Street traffic being unaffected.

7.25 I consider the number and severity of crashes on Sentinel Road and Curran Street to be low and therefore there are no inherent safety issues present. Overall, I consider that the additional traffic for a temporary period will have a negligible impact on the safety of these roads. There are a large number of crashes on Jervois Road, however given the short period of time for when the closure is in place I consider that this additional traffic will only have a minimal impact on the safety of Jervois Road.

7.26 Overall, I consider that the potential impact from construction of SE01 is less than minor.

SE02 Interception shaft (Sarsfield Street/Sentinel Street intersection)

7.27 The predicted duration of works for SE02 is 55 days with full closure of the intersection for 20 days and partial closure for 35 days. As detailed in the ITA, my assessment of temporary effects of SE02 on the Project route is presented in Table 5 below:

Table 5: Potential temporary effects of SE02 Interception shaft

Criteria	Impact Assessment	Comments
Vehicle access to residential properties.	Minimal	Access retained, noting Sentinel Road (north) residents access via Sarsfield Street (East).
Pedestrians and cyclists	Pedestrians – no impact Cyclists – minimal	Footpaths remain open. Raised platform may be partially removed. Cyclists temporarily unable to cycle on the AT designated Quiet Road of Sarsfield Street. However, cyclists can wheel their bikes the short distance of the road closure on the footpath or use the diversion route.
Pedestrian access to reserves/parks	No impact	Pedestrian access to Sentinel Beach Reserve retained.
Public transport.	No impact	No existing PT services.
On street parking.	Minimal	Will result in temporary loss of small amount of on street parking. Residential properties have off street parking. On street parking will remain available to use on Sarsfield Street and Sentinel Street either side of the shaft construction.
Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Less than minor impact**	

7.28 For the temporary closure of Sarsfield Street/Sentinel Road intersection, it is anticipated that traffic would be re-routed via Lawrence Street, Jervois Road or Hamilton Road. As detailed in the ITA, when the full closure is in place additional traffic from the diverted traffic could increase delays in the peak periods on Jervois Road. However, given the short duration (20 days) of this full closure, the short section of Jervois Road impacted and the uncongested nature of Jervois Road in the off peak, I consider the impact to be minimal. On the uncongested Lawrence Road and Hamilton Road, I consider the additional traffic for a temporary period to only have a minimal impact on the capacity of these roads and should not result in a noticeable increase in congestion or unreasonable delays for road users. Partial closure will result in Sentinel Street northbound left to Sarsfield Street and ahead to Sentinel Street (north) being unaffected.

7.29 I consider the number and severity of crashes on Lawrence Road and Hamilton Road to be low and there are no inherent safety issues present. Therefore, I consider the additional traffic for a temporary period would have a negligible impact on the safety of these roads. There are a large number of crashes on Jervois Road, however given the short period of time for when the closure is in place, then I consider this additional traffic to only have a minimal impact on the safety of Jervois Road.

7.30 Overall, I consider that the potential impact from construction of SE02 is less than minor.

SE03 Interception shaft (Sarsfield Street/ Lawrence Street intersection)

7.31 The predicted duration of works for SE03 is 47 days with full closure of the intersection for 20 days and partial closure for 27 days. As detailed in the ITA, my assessment of temporary effects of SE03 on the Project route is presented in Table 6 below:

Table 6: Potential temporary effects of SE03 Interception shaft

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minimal	Access retained, noting that 91 Sarsfield Street vehicle access diverted via existing footpath with access via Sarsfield Street (west).
Pedestrians and cyclists	Pedestrians – no impact Cyclists – minimal	Footpaths remain open. Cyclists temporarily unable to cycle on the AT designated Quiet Road of Sarsfield Street. However, cyclists can wheel their bikes the short distance of the road closure on the footpath or use the diversion route.
Pedestrian access to reserves/parks	No impact	No existing access to a reserve or beach.
Public transport	No impact	No existing PT services.
On street parking	Minimal	Will result in temporary loss of small amount of on street parking on Sarsfield Street and Lawrence Street. Residential properties have off street parking. On street parking will remain available to use on Sarsfield Street and Lawrence Street either side of the shaft construction.

Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Less than minor impact**	

7.32 For the temporary closure of Sarsfield Street /Lawrence Street intersection, it is anticipated that traffic would be re-routed via Sentinel Road, Jervois Road or Wallace Street. For the short period of time when the closure is in place, then additional traffic from the diverted traffic could increase delays in the peak periods on Jervois Road. However, given the short duration of this full closure (20 days), the short section of Jervois Road impacted and the uncongested nature of Jervois Road in the off peak, I consider the impact to be minimal. On the uncongested Sentinel Road and Wallace Street, I consider the additional traffic for a temporary period of 20 days to only have a minimal impact on the capacity of these roads and should not result in a noticeable increase in congestion or unreasonable delays for road users. Partial closure will result in Lawrence Street northbound left turn to Sarsfield Street being unaffected.

7.33 I consider the number and severity of crashes on Sentinel Road and Wallace Street to be low and there are no inherent safety issues present. Therefore, I consider the additional traffic for a temporary period to only have a negligible impact on the safety of these roads. There are a large number of crashes on Jervois Road, however given the short period of time for when the closure is in place then I consider this additional traffic to only have a minimal impact on the safety of Jervois Road.

7.34 Overall, I consider that the potential impact from construction of SE03 is less than minor.

Shaft 2 (Sarsfield Street/Wallace Street/Stack Street intersection)

7.35 The predicted duration of works for Shaft 2 is 251 days with full closure of the intersection for 120 days and partial closure for 131 days. Subsequent to the assessment of effects of Shaft 2 presented in the ITA, discussions have been held with the owner of 51 Wallace Street who has confirmed that the existing vehicle crossing and garage door to the rear of their property is not used for vehicle access since the rear area is used as a patio. As such, I have updated the ITA assessment for access to 51 Wallace Street from a more than minor impact to a less than minor impact and my assessment of temporary effects of Shaft 2 on the Project route is presented in Table 7 below:

Table 7: Potential temporary effects of Shaft 2

Criteria	Impact Assessment	Comments
Vehicle access to residential properties.	Minimal.	Access retained, noting 60 Wallace Street access via Stack Street. 51 Wallace Street vehicle crossing – not used as a vehicle access.
Pedestrians and cyclists	Pedestrians – no impact Cyclists – minimal	Footpaths open. Raised platform may be partially removed. Cyclists temporarily unable to cycle on the AT designated Quiet Road of Sarsfield Street. However, cyclists can wheel their bikes the short distance of the road closure on the footpath or use the diversion route.
Pedestrian access to reserves/parks	No impact	Pedestrian access to Home Bay Beach Reserve retained.
Public transport.	No impact	No existing PT services.
On street parking.	Minimal	Will result in temporary loss of small amount of on street parking on Sarsfield Street, Wallace Street and Stack Street. Residential properties have off street parking. On street parking will remain available to use on Sarsfield Street, Wallace Street and Stack Street either side of the shaft construction.
Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Temporary less than minor impact**	

7.36 For the temporary closure of the Sarsfield Street/Wallace Street/Stack Street intersection, it is anticipated that traffic would be re-routed via Cremorne Street, Argyle Street, Wallace Street, Lawrence Street or Jervois Road.

7.37 The full and partial closure will occur over a relatively long period of time (251 days) and the additional traffic from the diverted traffic could increase delays in the peak periods on Jervois Road although this will be over a short section of Jervois Road and during the off peak when there is no congestion. On this basis I consider the impact to be a temporary more than minor impact. On Cremorne Street, Argyle Street, Wallace Street and Lawrence Street, I

consider the additional traffic to result in a temporary more than minor transport impact in terms of the increase in the overall volume of traffic for 251 days but this level of increase is not expected to impact on the uncongested traffic flow conditions currently experienced nor impact on residents ability to safely manoeuvre in and out of their driveways.

7.38 I consider the number and severity of crashes on Cremorne Street, Argyle Street, Wallace Street and Lawrence Street to be low and there are no inherent safety issues present. Therefore, I consider the additional traffic to only have a negligible impact on the safety of these roads. There are a large number of crashes on Jervois Road, and since the full and partial closure will occur over a relatively long period of time (251 days) I consider the impact of the additional traffic to be a temporary more than minor impact.

7.39 Overall, I consider that the potential impact from construction of Shaft 2 is a temporary more than minor impact.

Shaft 3 (Wallace Street/Argyle Street intersection)

7.40 The predicted duration of works for Shaft 3 is 340 days. As detailed in the ITA, my assessment of temporary effects of Shaft 3 on the Project route is presented in Table 8 below:

Table 8: Potential temporary effects of Shaft 3

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minimal	Access retained, noting: • 41 and 43 Wallace Street access from Wallace Street (north). • 50A Wallace Street access from Wallace Street.
Pedestrians and cyclists	Pedestrians – minimal Cyclists – minimal	Footpath from Argyle Street to Wallace Street (south) closed during shaft construction and open during tunnelling works. Raised platform may be partially removed. Cyclists temporarily unable to cycle on the AT designated Quiet Road of Sarsfield Street. However, cyclists can wheel their bikes the short distance of the road closure on the footpath or use the diversion route.
Pedestrian access to reserves/parks	No impact	No existing access to beach or reserve.

Public transport	No impact	No existing PT services.
On street parking	Minimal	Will result in temporary loss of small amount of on street parking on Wallace Street and Argyle Street. Residential properties have off street parking. On street parking will remain available to use on Wallace Street and Argyle Street either side of the shaft construction.
Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Less than minor impact**	

7.41 For the temporary closure of the Wallace Street/Argyle Street intersection, it is anticipated that traffic would be re-routed via Cremorne Street, Stack Street, Clifton Road, Lawrence Street or Jervois Road.

7.42 The closure will occur over a relatively long period of time (340 days) and the additional traffic from the diverted traffic could increase delays in the peak periods on Jervois Road, although this will be over a short section of Jervois Road and during off peak hours when there is no congestion. On this basis I consider the impact to be a temporary more than minor impact. On Cremorne Street, Stack Street, Clifton Road and Lawrence Street, I consider the additional traffic to result in a temporary more than minor transport impact in terms of the increase in the overall volume of traffic for 340 days but this level of increase is not expected to impact on the uncongested traffic flow conditions currently experienced nor impact on residents ability to safely manoeuvre in and out of their driveways.

7.43 I consider the number and severity of crashes on Cremorne Street, Stack Street, Clifton Road and Lawrence Street is low and there are no inherent safety issues present. Therefore, I consider the additional traffic for a temporary period to only have a negligible impact on the safety of these roads. There are a large number of crashes on Jervois Road, and since the full and partial closure will occur over a relatively long period of time (340 days) I consider the impact of the additional traffic to be a temporary more than minor impact.

7.44 Overall, I consider that the potential impact from the construction of Shaft 3 is a temporary more than minor impact.

SE04 Interception shaft (Argyle Street west of Clifton Road)

7.45 The predicted duration of works for SE04 is 37 days. As detailed in the ITA, my assessment of temporary effects of SE04 on the Project route is presented in Table 9 below:

Table 9: Potential temporary effects of SE04 Interception shaft

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minimal	Access retained, noting: • 46 Argyle Street – eastbound out only. • 48 Argyle Street – westbound out only. • 45 Argyle Street – westbound out (temporary crossing). • 43 Argyle Street – eastbound out only.
Pedestrians and cyclists	Pedestrians – minimal Cyclists – minimal	Footpath on south side closed. Cyclists will need to use diversion route (or wheel their bike on the footpath). Note this section of road is not part of the AT classified quiet road for cycling.
Pedestrian access to reserves/parks	No impact	No existing access to beach or reserve.
Public transport	No impact	No existing PT services.
On street parking	Minimal	Will result in temporary loss of small amount of on street parking on Argyle Street. Residential properties have off street parking. On street parking will remain available to use on Argyle Street either side of the shaft construction.
Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Less than minor impact**	

7.46 For the temporary closure of Argyle Street, it is anticipated that traffic would be re-routed via Masons Avenue, Clifton Road or Jervois Road.

7.47 For the short period of time when the closure is in place, then additional traffic from the diverted traffic could increase delays in the peak periods on Jervois Road. However, given the short duration (37 days) of this closure, the short section of Jervois Road impacted and the uncongested nature of Jervois Road in the off peak, I consider the impact to be minimal. On the uncongested Masons Avenue and Clifton Road, I consider the additional traffic for a temporary period to only have a minimal impact on the capacity of these roads

and should not result in a noticeable increase in congestion or unreasonable delays for road users.

7.48 I consider the number and severity of crashes on Masons Avenue and Clifton Road to be low and that there are no inherent safety issues present. Therefore, I consider the additional traffic for a temporary period to only have a negligible impact on the safety of these roads. There are a large number of crashes on Jervois Road, however given the short period of time for when the closure is in place then I consider this additional traffic to only have a minimal impact on the safety of Jervois Road.

7.49 Overall, I consider that the potential impact from construction of SE04 is less than minor.

Shaft 4 (Argyle Street/Herne Bay Road intersection)

7.50 The assumed duration of works for Shaft 4 is 201 days. As detailed in the ITA, my assessment of temporary effects of Shaft 4 on the Project route is presented in Table 10 below:

Table 10: Potential temporary effects of Shaft 4

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minimal	Access retained, noting: • 79 Argle Street – northbound out only. • 72 Argyle Street – eastbound out only.
Pedestrians and cyclists	Pedestrians – minimal Cyclists – minimal	Footpath on Herne Bay Road west side will be closed. Cyclists will need to use diversion route (or wheel their bike on the footpath). Note this section of road is not part of the AT classified quiet road for cycling.
Pedestrian access to reserves/parks	No impact	No existing access to beach or reserve.
Public transport	No impact	No existing PT services.
On street parking	Minimal	Will result in temporary loss of small amount of on street parking on Argyle Street and Herne Bay Road. Residential properties have off street parking. On street parking will remain available to use on Argyle Street and Herne Bay Road either side of the shaft construction.

Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Less than minor impact**	

7.51 For the temporary closure of Argyle Street and Herne Bay Road intersection it is anticipated that traffic would be re-routed via Galatea Terrace, Masons Avenue, Bella Vista Road or Jervois Road.

7.52 The closure will occur over a relatively long period of time (201 days) and the additional traffic from the diverted traffic could increase delays in the peak periods on Jervois Road although this will be over a short section of Jervois Road and during the off peak when there is no congestion. On this basis I consider the impact to be a temporary more than minor. On Galatea Terrace, Masons Avenue and Bella Vista Road, I consider the additional traffic to result in a temporary more than minor transport impact in terms of the increase in the overall volume of traffic for 201 days, but this level of increase is not expected to impact on the uncongested traffic flow conditions currently experienced nor impact on residents ability to safely manoeuvre in and out of their driveways.

7.53 I consider the number and severity of crashes on Bella Vista Road, Masons Avenue and Clifton Road to be low and there are no inherent safety issues present. Therefore, I consider the additional traffic for a temporary period to only have a negligible impact on the safety of these roads. There are a large number of crashes on Jervois Road, and since the full and partial closure will occur over a relatively long period of time (340 days), I consider the impact of the additional traffic to be a temporary more than minor.

7.54 Overall, I consider that the potential impact from construction of Shaft 4 is a temporary more than minor impact.

Shaft 5 (Upton Street/Herne Bay Road intersection)

7.55 The predicted duration of works for Shaft 5 is 233 days. As detailed in the ITA, my assessment of temporary effects of Shaft 5 on the Project route is presented in Table 11 below:

Table 11: Potential temporary effects of Shaft 5

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minimal	Access retained, noting: • 31 Herne Bay Road southbound only. • 72 Argyle Street eastbound out only. • 36 Upton Street – east entry closed, westbound out of west entry.
Pedestrians and cyclists	Pedestrians – minimal Cyclists – minimal	Footpath on Upton Street north side will be closed. Cyclists will need to use diversion route (or wheel their bike on the footpath). Note this section of road is not part of the AT classified quiet road for cycling.
Pedestrian access to reserves/parks	No impact	No existing access to beach or reserve.
Public transport.	No impact	No existing PT services.
On street parking	Minimal	Will result in temporary loss of small amount of on street parking on Upton Street and Herne Bay Road. Residential properties have off street parking. On street parking will remain available to use on Upton Street and Herne Bay Road either side of the shaft construction.
Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Less than minor impact**	

7.56 For the temporary closure of Herne Bay Road and Upton Street, it is anticipated that traffic would be re-routed via Galatea Terrace, Marine Parade and Bella Vista Road.

7.57 On the uncongested Galatea Terrace, Marine Parade and Bella Vista Road, I consider the additional traffic for a temporary period to only have a minimal impact on the capacity of these roads and should not result in a noticeable increase in congestion or unreasonable delays for road users.

7.58 I consider the number and severity of crashes on Galatea Terrace, Marine Parade and Bella Vista Road to be low and there are no inherent safety issues present. Therefore, I consider the additional traffic for a temporary period to only have a negligible impact on the safety of these roads.

7.59 Overall, I consider that the potential impact from construction of Shaft 5 is less than minor.

Shaft 6 (Marine Parade/Upton Street/Annan Street intersection)

7.60 The predicted duration of works for Shaft 6 is 170 days with full closure of the intersection for 100 days and partial closure for 70 days. As detailed in the ITA, my assessment of temporary effects of Shaft 6 on the Project route is presented in Table 12 below:

Table 12: Potential temporary effects of Shaft 6

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minimal	Access retained, noting: • 14 Upton Street Eastbound out only. • 33A Marine Parade southbound out only. • 31 Marine Parade northbound out only.
Pedestrians and cyclists	Pedestrians – minimal Cyclists – minimal	Marine Parade west side footpath closed. Cyclists will need to use diversion route (or wheel their bike on the footpath). Note this section of road is not part of the AT classified quiet road for cycling.
Pedestrian access to reserves/parks	Less than minor	Aim to keep pedestrian access to Marine Parade Reserve open if safe to do so during working hours. Outside of working hours access unlikely to be restricted
Public transport	No impact	No existing PT services.
On street parking	Minimal	Will result in temporary loss of small amount of on street parking on Marine Parade, Upton Street and Annan Street. Residential properties have off street parking. On street parking will remain available to use on Marine Parade, Upton Street and Annan Street either side of the shaft construction.
Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Less than minor impact**	

7.61 For the temporary closure of Marine Parade, Annan Street and Upton Street it is anticipated that traffic would be re-routed via Galatea Terrace and Bella Vista Road.

7.62 On the uncongested Galatea Terrace and Bella Vista Road, I consider the additional traffic for a temporary period to only have a minimal impact on the capacity of these roads and should not result in a noticeable increase in congestion or unreasonable delays for road users.

7.63 I consider the number and severity of crashes on Galatea Terrace and Bella Vista Road to be low and there are no inherent safety issues present. Therefore, I consider the additional traffic for a temporary period to only have a negligible impact on the safety of these roads.

7.64 Overall, I consider that the potential impact from construction of Shaft 6 is less than minor.

Shaft 7 Marine Parade (between Annan Street and Bella Vista Road)

7.65 The assumed duration of works for Shaft 7 is 94 days. As detailed in the ITA, my assessment of temporary effects of Shaft 7 on the Project route is presented in Table 13 below:

Table 13: Potential temporary effects of Shaft 7

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minimal	Access retained, noting: • 22 Marine Parade southbound out only. • 39 Marine Parade northbound out only. • 41 Marine Parade southbound out only.
Pedestrians and cyclists	Pedestrians – minimal Cyclists – minimal	Footpath on east side to be closed. Cyclists will need to use diversion route (or wheel their bike on the footpath). Note this section of road is not part of the AT classified quiet road for cycling.
Pedestrian access to reserves/parks	No impact	No existing access to beach or reserve.
Public transport	No impact	No existing PT services.
On street parking	Minimal	Will result in temporary loss of small amount of on street parking on Marine Parade. Residential

		properties have off street parking. On street parking will remain available to use on Marine Parade either side of the shaft construction.
Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Less than minor impact**	

7.66 For the temporary closure of Marine Parade, it is anticipated that traffic would be re-routed via Bella Vista Road and Annan Street.

7.67 On the uncongested Annan Street and Bella Vista Road, I consider the additional traffic for a temporary period to only have a minimal impact on the capacity of these roads and should not result in a noticeable increase in congestion or unreasonable delays for road users.

7.68 I consider the number and severity of crashes on Annan Street and Bella Vista Road to be low and there are no inherent safety issues present. Therefore, I consider the additional traffic for a temporary period to only have a negligible impact on the safety of these roads.

7.69 Overall, I consider that the potential impact from construction of Shaft 7 is less than minor.

Shaft 8 Marine Parade/Bella Vista Road intersection

7.70 The predicted duration of works for Shaft 8 is 60 days. As detailed in the ITA, my assessment of temporary effects of Shaft 8 on the Project route is presented in Table 14 below:

Table 14: Potential temporary effects of Shaft 8

Criteria	Impact Assessment	Comments
Vehicle access to residential properties	Minor impact	Access to private property will be temporary affected, and will need to be managed individually as trenching passes in front of each property with the owners and occupiers to reduce disruption. The effects of this disruption to property access during these works will be significant, however they will be short term – estimated to be up to five days per property, or a total of 30 days for the full trenching programme and 30 days for the construction of Shaft 8. Watercare

		and the Project constructors will engage with these property owners early to ensure that access is managed sufficiently, which is likely to involve providing a temporary platform over the excavated trench before and after construction hours. This will ensure that some vehicle access to the affected properties is still provided during these works.
Pedestrians and cyclists	Pedestrians – minimal Cyclists – minimal	One side of the Marine Parade footpath will be closed. Cyclists will need to use diversion route (or wheel their bike on the footpath). Note this section of road is not part of the AT classified quiet road for cycling.
Pedestrian access to reserves/parks	No impact	No existing access to beach or reserve.
Public transport	No impact	No existing PT services.
On street parking	Minimal	Will result in temporary loss of small amount of on street parking Marine Parade and Bella Vista Road. Residential properties have off street parking. On street parking will remain available to use on Marine Parade and Bella Vista Road either side of the shaft construction.
Refuse/delivery access	Minimal	Use diversion route.
Overall Assessment	**Temporary minor impact**	

7.71 For the temporary closure of Marine Parade/Bella Vista Road intersection, it is anticipated that traffic would be re-routed via Bella Vista Road, Wolseley Road and Annan Street.

7.72 On the uncongested Annan Street and Bella Vista Road, I consider the additional traffic for a temporary period to only have a minimal impact on the capacity of these roads and should not result in a noticeable increase in congestion or unreasonable delays for road users.

7.73 I consider the number and severity of crashes on Annan Street and Bella Vista Road to be low and there are no inherent safety issues present. Therefore, I consider the additional traffic for a temporary period to only have a negligible impact on the safety of these roads.

7.74 Overall, I consider that the potential impact from construction of Shaft 8 to be a temporary minor impact.

Findings from the on street parking survey

7.75 As detailed in paragraph [5.19] above, surveys were undertaken in November 2023 of on street parking on the route of the Project and on the proposed Shaft 1 diversion route. Having reviewed this data, for each of the construction sites I conclude:

(a) Shaft 1 (impact of diversion route on Curran Street) – In addition to parking within a property (eg driveway/garage) there is sufficient parking space available on one side of Curran Street to accommodate the observed parking demand with the temporary removal of parking on one side of Curran Street as detailed in the Draft CTMP.

(b) Shaft 1 (impact of diversion route on Emmett Street) – In addition to parking within a property (eg driveway/garage) there is sufficient parking space available on the south side of Emmett Street to accommodate the observed parking demand with the temporary removal of parking on one side of Emmett Street as detailed in the Draft CTMP.

(c) Shaft 1, SE01, SE02, SE03, Shaft 2 and Shaft 3 (Sarsfield Street and Wallace Street) – In addition to parking within a property (eg driveway/garage) there is sufficient on street parking available within a short walking distance (less than 150m or a 1 to 2 minute walk time) for any on street parking temporarily displaced resulting from the construction work.

(d) CSA1 (Argyle Street) – In addition to parking within a property (eg driveway/garage) there is sufficient on street parking available within a short walking distance (less than 180m or 2 minute walk time) of properties for any on street parking temporarily displaced resulting from the CSA1 access.

(e) Shafts 4, 5, 6, 7 and 8 – Herne Bay Road/Upton Street/Marine Parade – In addition to parking within a property (eg driveway/garage) there is sufficient on street parking available adjacent to the properties for any on street parking temporarily displaced resulting from the construction work.

7.76 Overall, I consider that the parking survey demonstrates that there is sufficient on street parking available to accommodate any displaced on street parking arising from the Project construction work. As such, in relation to parking, I consider that the assessment of effects is unchanged to that reported in the ITA.

8. MITIGATION MEASURES

8.1 As indicated in section 7 there are potentially temporary adverse effects resulting from the Project which can be managed through a CTMP.

8.2 In response to the Council's s92 request, I have prepared a draft CTMP (dated 24 October 2023) which was submitted to Council. A requirement to submit a CTMP to Council is included in Proposed Conditions 45 to 56 which are appended to Ms Drury's evidence.

8.3 The objectives of the draft CTMP are to:

(a) Ensure construction traffic movements on the transport network are appropriately managed.

(b) Provide for the safety of everyone at all times.

(c) Minimise disruption and maintain pedestrian and vehicle access to/from surrounding residential properties.

(d) Minimise disruption from construction traffic on the travelling public and road users along the identified sections of the construction routes (noting this would also include minimising impacts to on street parking).

(e) Seek to avoid full road closures and minimise any partial or managed closures.

(f) Manage integration with other construction projects and AT /Waka Kotahi projects.

8.4 The CTMP remains a draft and will be updated and finalised prior to construction commencing, should consent be granted for the Project. The preparation of a CTMP and certification of the same by Council is a requirement of the Proposed Conditions detailed in section 11 of my evidence and in the Proposed Conditions of consent included in the planning evidence of Ms Drury.

8.5 The draft CTMP submitted to Council outlines the standards, agreed approach and measures that will be taken to avoid, remedy, mitigate, minimise or manage the traffic effects associated with construction works for the duration of this Project. The draft CTMP describes the general measures required to reduce the impacts of construction and maintain the safety of road users, active road users (pedestrians and cyclists), residents and businesses that may result from potential road closures, temporary restrictions, detours or diversions for general traffic and buses. The draft CTMP will be updated and developed into a final CTMP following necessary approvals.

8.6 The draft CTMP is consistent with the NZTA New Zealand Guide to Traffic Management ("**NZGTTM**") and Code of Practice for Temporary Traffic Management ("**CoPTTM"**). The Draft CTMP details roles and responsibilities, approvals, construction methodology and programme, concurrent projects, traffic management strategies, stakeholder management/communications and review/monitoring.

8.7 Tables 7.1 and 7.2 of the Draft CTMP identify general and site specific management strategies for the Project and I have appended these to **Appendix B** of my evidence. In my opinion, implementation of these strategies will mitigate the temporary traffic effects of the Project construction activities on the project route and on the diversion routes.

9. RESPONSE TO COUNCIL OFFICER'S REPORT

9.1 I have reviewed the section 42A report and the Council and AT specialist memos which relate to transport and traffic related matters. I note that the Reporting Planner, Council specialist and AT specialist agree with my modelling and predicted levels of effects on the transport network from construction of the Project. In particular, it is concluded at page 38 that adverse construction traffic effects can generally be managed via the submission of a final CTMP that expands upon and strengthens the details outlined in the submitted draft CTMP.

9.2 I have no further specific comments on the contents of the report.

10. RESPONSE TO SUBMISSIONS

10.1 I have read the submissions received on the Project that relate to traffic matters. A number of submissions express concern relating to the potential impacts of local road closures and loss of parking from construction of the Project. I respond to those concerns individually below.

Ministry of Education

10.2 In my ITA I explain that the increase in traffic on Curran Street is considered to result in a temporary significant adverse transport impact on Curran Street and note that this traffic passes Ponsonby Primary School.[4] However, to mitigate potential effects from this additional traffic on Ponsonby Primary School, the ITA recommended that provisions for restricting movements of the construction traffic during peak school drop-off and pick-up times should be included within the CTMP. This is reflected in the Proposed Conditions for the CTMP (Proposed Condition 46) as detailed in section 11 of my evidence.

10.3 The Ministry of Education ("**Ministry**") has submitted on the Application and has expressly acknowledged the effort Watercare has made to engage with the Ministry and the school to address and actively manage the Ministry's concerns relating to construction traffic from the Project. The Ministry is neutral on the Application, provided minor amendments are made to reflect the school's peak before and after school travel times, which are included in Proposed Condition 46 (q) in Attachment 1 to Ms Drury's evidence.

10.4 I reviewed those proposed minor amendments and support them from a traffic effects perspective and have incorporated these within the Draft CTMP. As such, I consider that the Proposed Conditions will appropriately mitigate potential traffic effects on Ponsonby Primary School and, in particular, will maintain student safety.

Herne Bay Residents Association

<u>Impact on residents parking</u>

10.5 The Herne Bay Residents Association submission expresses concern that parking in the local area will be adversely impacted as a result of the Project. In particular, the submission states that residents pay for parking permits, and these will be affected. The submission considers that parking needs to be considered in any traffic management plan and parking within the working zones should be maximised.

10.6 As far as possible, temporary removal of on street parking will be minimised and vehicle access to properties and their associated off-street parking will be maintained. As detailed in paragraph [5.14] to [5.18] above, properties located adjacent to the proposed construction sites have off street parking available in garages and/or driveways.

4 ITA, page 46.

10.7 However, as identified in Appendix C and Sections 6.5.2 to 6.5.16 of my ITA, the construction works will temporarily require short sections of removal of existing on street parking. This is an unavoidable impact of the construction works and will require residents to park either off street within their properties or park on street a short walking distance from their properties. As detailed in paragraphs [5.14] to [5.18] residents on Sarsfield Street and Wallace Street are within the Herne Bay resident parking zone and, subject to payment, are able to purchase a resident parking permit to enable them to park in a time restricted parking area without the need to comply with the restriction. Resident parking permits are not required on the other streets on the Project route since there are no time restrictions that residents need to be exempt from.

10.8 It should be noted that even for those residents with a parking permit, parking on street is on a first-in, first-served basis and does not guarantee that a parking space will be available and in particular does not guarantee that a space will be available adjacent to the resident's property. Furthermore, the Council Residential Parking Policy recognises that there is no inherent legal right for vehicle owners to park on public roads and that the resident parking permit is considered a privilege rather than a right.

10.9 Furthermore, the findings from the parking survey (see paragraph [7.75] above) demonstrates that there is sufficient on street parking available to accommodate any displaced on street parking arising from the Project construction work.

10.10 Table 7.1 of the Draft CTMP (attached to my evidence as **Appendix B**) outlines how removal of the parking spaces will be communicated and managed. Following approvals of the project and further refinement of the construction methodology, the Draft CTMP will be updated to address management of each construction site and the specific on street parking removal requirements.

<u>Contractor vehicle parking</u>

10.11 The submission also requests a condition of consent that contractors and Watercare staff non-operational vehicles park at Point Erin Park or ,at Salisbury Reserve.

10.12 As set out in the revised land requirement plan for Salisbury Reserve, which is attached to Mr Bishop's evidence at Attachment 1, there will be 15 parking spaces at CSA1 and four at CSA2. As indicated in 5.2.1 of the ITA, 24

construction staff are expected at CSA1 and two at CSA2. It is anticipated though that some of the construction worker vehicles will need to park on street at the construction sites since contractors will need access to equipment, tools, personal protective equipment etc. Furthermore, supervision staff will need to visit the construction sites and hence park on street. Therefore, it is anticipated there will be a mixture of some contractor vehicles remaining parked within CSA1 and CSA2 all day and car sharing with other contractors, contractors parking on street at the construction sites, and supervision staff parking within CSA1 and CSA2, and parking on street to periodically inspect work at the construction sites. Therefore, as far as is reasonably practicable, vehicles will park within CSA1 and CSA2 but some will need to park on street for operational reasons.

10.13 The findings from the parking survey (see paragraph [7.75] above) demonstrates that there is sufficient on street parking available to accommodate any contractor vehicles parking on street.

10.14 In my opinion it is not reasonable that all workers be required to park within CSA1 or CSA2, as this will be both impractical for Auckland Council to enforce, and there will be operational requirements for some contractors and supervision staff to park on street at the construction sites.

10.15 I do not consider that it is practicable for non-operational vehicles to park at Point Erin Park since, as demonstrated in the ITA prepared for the CI resource consent, the public car park is fully occupied when the Point Erin Pools are open (between the end of November and the end of March). Furthermore, parking within the public car park is time restricted to 240 minutes.

Community input

10.16 The submission considers that there needs to be ongoing community input on local road closures and impacts on street parking to ensure road use and disruption is minimised.

10.17 As detailed in section 9.1 of the Draft CTMP, I have identified owners and occupiers of neighbouring properties as key stakeholders. In section 9.2.2, I outline a suggested neighbour notification letter drop, in section 9.2.3 I outline a suggested incident response procedure and in section 9.2.4 I outline a suggested complaints register procedure.

10.18 Proposed Conditions 45 to 56 in Attachment 1 to Ms Drury's evidence relate to the submission and implementation of the CTMP. Associated with the successful implementation of the CTMP, I also note the following conditions:

(a) Proposed Condition 5 relating to appointment of a Community Liaison person.

(b) Proposed Conditions 6 and 7 relating to preparation and implementation of a Communications Plan.

10.19 Considering the above, I am of the opinion that community input is suitably addressed in the proposed conditions and draft CTMP.

Salisbury Reserve Residents' Group and 44 Wallace Street

10.20 The Salisbury Reserve Residents' Group and the owners of 44 Wallace Street raise concerns about the traffic safety in the streets surrounding Salisbury Reserve. In particular, they note that the streets are relatively narrow and the proposed activity will result in significant additional traffic in quiet residential streets. The evidence of Ms Yung[5] addresses the potential noise effects from the additional traffic and the evidence of Ms Wick[6] addresses the potential effects on amenity. I do not cover the matters addressed by those experts but comment on the potential traffic effects.

10.21 As detailed in the ITA and paragraph [5.4] above, the width of the streets on the Project route typically range from 7.5m to 11m, which I consider is a suitable width to safely accommodate existing traffic plus construction traffic. As detailed in the ITA and paragraph [7.8] above, I consider the traffic impact of the additional construction vehicles on the Project route will be less than minor.

10.22 The owners of 44 Wallace Street note the existence of the Bayfield Primary School and Herne Bay Playcentre around the Reserve and consider there has been no assessment or consideration of the potential effects on the school or playcentre. Bayfield Primary School is accessed directly off Clifton Road near its intersection with Jervois Road, whilst the Herne Bay Playcentre is accessed directly off Jervois Road opposite the Jervois Road/West End Road roundabout intersection.

10.23 I would not expect that the Project construction traffic would need to route via Clifton Road or Jervois Road to access the Shaft 3 and SE04 construction sites, since construction traffic will access Shaft 3 via Argyle Street or Sarsfield Street and will access SE04 via Argyle Street.

5 Evidence of Ms Yung dated 2 February 2024.

6 Evidence of Ms Wick dated 2 February 2024.

10.24 As detailed in the ITA and paragraphs [7.40] to [7.49] above, the impact of the Project on Jervois Road and Clifton Road including Bayfield Primary School and the Herne Bay Playcentre has been assessed in relation to re-routed traffic as a result of the following Project construction works:

(a) Shaft 3 construction works results in a temporary more than minor transport impact.

(b) SE04 construction works results in a less than minor transport impact.

10.25 Therefore, I consider that the traffic and road safety impacts have been assessed on Clifton Road and Jervois Road, including at the Bayfield Primary School and Herne Bay Playcentre and, where relevant, appropriate mitigation measures have been identified in the Draft CTMP.

2 Stack Street

10.26 The owner of 2 Stack Street (Malcolm Legget) has queried how the impacts of road closures on access to their property will be managed during the construction period. I have assumed that the submitter is primarily interested in the full and partial road closures that will be required during the construction of Shaft 2 (near the Sarsfield Street/Wallace Street/Stack Street intersection).

10.27 At section 6.5.9 of my ITA, I set out the full and partial road closures required during the construction of Shaft 2. In summary, access to all residential properties (including the submitters residence) will be maintained at all times.

92, 94, 96 and 98 Sarsfield Street

<u>Access to the properties</u>

10.28 The owners of 92, 94, 96 and 98 Sarsfield Street collectively raise concerns regarding the potential impact on access to their properties during construction of the Project.

10.29 As set out in the construction plans at Appendix C to my ITA (page 116), access to these properties will be unaffected and will be maintained at all times.

<u>Parking</u>

10.30 The submitters also express concerns relating to potential impacts on resident parking.

10.31 As set out in the construction plans shown in Appendix C of my ITA (page 116), on street parking adjacent to these properties will be unaffected by the proposed Project works.

9 Argyle Street

10.32 The owner of 9 Argyle Street (Gary Lane) considers that there has been no quantification of the additional traffic effects, as compared to the effects on neighbourhood amenity and the natural environment, from converting Salisbury Reserve to a CSA.

10.33 By this submission, I understand the submitter to be concerned about additional or different traffic impacts that would be generated if the Project was limited to one CSA in Point Erin Park (referred to in the ITA and Draft CTMP as CSA2), and that this should be compared or assessed against the potential amenity and other effects of also utilising Salisbury Reserve as a second CSA as proposed by Watercare.

10.34 I have assessed the potential traffic and transportation effects of the Project as proposed by Watercare in its consent application, which includes the use of Salisbury Reserve as a second CSA. I have not assessed the traffic and transportation effects of utilising Point Erin Park as the only CSA.

10.35 That said, at a high-level the traffic and transportation effects of the Project would obviously be different in the event only one CSA at Point Erin Park (CSA2) were to be utilised. For example, construction traffic volumes on the Curran Street/SH1 on ramp, SH1 and Shelly Beach Road off ramp would increase since all of the construction workers and all of the daily equipment movements for each of the satellite sites would need to access this compound. With only one CSA at Point Erin Park, the volumes of large trucks would increase on the project route west of the proposed Salisbury Reserve CSA since deliveries would need to be made directly to the construction sites from CSA2. Overall construction volumes on the residential roads east of the proposed Salisbury Reserve CSA would increase since the construction traffic would all need to access the Point Erin Park CSA.

10.36 Furthermore, the two CSAs are proposed as each site will have a distinct function, and neither site is large enough to contain all of the support facilities required to construct such a complex Project. Without two CSA sites, the individual shaft construction sites would need to be larger to incorporate site office/welfare facilities and the storage of materials, which would require a much larger footprint on the road reserve.

10.37 I therefore conclude that provision of both CSAs is required from a transport perspective.

57 Sentinel Road

10.38 The owner of 57 Sentinel (Rebecca Kimpton) has expressed concerns regarding the potential impact of the Project on pedestrian access outside of their property. As shown in the Construction plans included at Appendix C to my ITA (page 112), pedestrian access to 57 Sentinel Road will be unaffected and the footpaths will remain open.

10.39 The owner is also concerned with how the Project will affect parking outside their property. The Construction plans shown in Appendix C to my ITA (page 112) show that parking adjacent to 57 Sentinel Road will be unaffected.

11. CONDITIONS

11.1 Proposed Conditions of consent are included as Attachment 1 to Ms Drury's evidence. I note:

(a) Proposed Condition 5 relating to appointment of a Community Liaison person.

(b) Proposed Conditions 6 and 7 relating to preparation and implementation of a Communications Plan.

(c) Proposed Conditions 45 to 56 relating to submission and implementation of a CTMP.

11.2 I support the Proposed Conditions insofar as they relate to transport matters.

12. CONCLUSION

12.1 In my opinion there are no transport engineering or transport planning reasons that would preclude construction works associated with the Project. I consider that any effects can be appropriately managed and mitigated through the implementation of the CTMP. I therefore consider that the resource consents being sought by Watercare for the Project should be approved.

Colin Robert Shields

2 February 2024

Appendix A - On street parking survey

Memo

To:	Watercare	**Job No:**	1090120
From:	Colin Shields	**Date:**	22 January 2024
cc:			
Subject:	Herne Bay Tunnel – Review of on street parking survey		

1 Introduction

Surveys of the occupancy of on street parking was carried out on the following streets on the route of the Herne Bay Tunnel (HBT) project works:

- Sarsfield Street- between Shelly Beach Road and Wallace Street (noting this is a P120 Monday to Friday 0800 to 1800 and residents parking permits can be used here).
- Wallace Street between Sarsfield Street and Argyle Street (noting this is a P120 Monday to Friday 0800 to 1800 and residents parking permits can be used here).
- Argyle Street between Wallace Street and Herne Bay Road (no parking restrictions and no resident parking permits).
- Herne Bay Road between Argyle Street and Upton Street (no parking restrictions and no resident parking permits).
- Upton Street between Herne Bay Road and Marine Parade (no parking restrictions and no resident parking permits).
- Marine Parade between Upton Street and Bella Vista Road (no parking restrictions and no resident parking permits).

Surveys were also carried out on the proposed diversion route resulting from the closure of Sarsfield Street for the Shaft 1 works on:

- Emmett Street between Curran Street and Shelly Beach Road (noting this is a P120 Monday to Friday 0800 to 1800 and residents parking permits can be used here).
- Curran Street between Sarsfield Street and Emmett Street (noting this is a P120 Monday to Friday 0800 to 1800 on the east side and on the west side is P2 0830 to 0900 and 1455 to 1525 (school times) and P120 outside of those times. Residents parking permits can be used here.

The location of the HBT project construction works and the streets surveyed is shown in Figure 1 below:

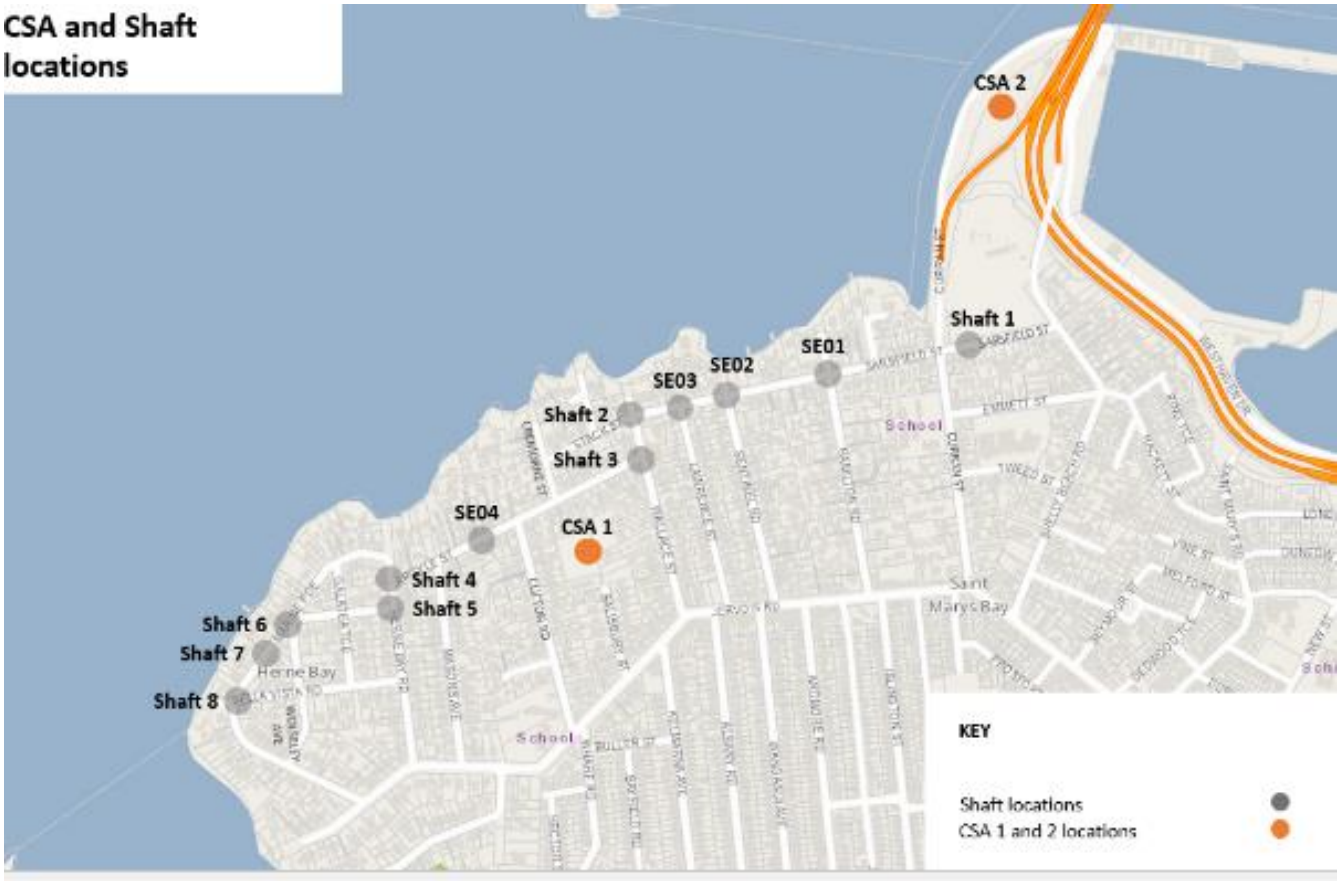

Figure 1: Roads adjacent to the Shaft locations and Construction Support Areas (CSAs).

The occupancy of on street parking was surveyed on both sides of the streets at 30 minute frequencies between 0600 and 1800 on Thursday 23 November 2023 and Saturday 25 November 2023. The amount of available parking took into account any existing parking restrictions (denoted by broken yellow lines) and locations of vehicle crossings/driveways where on street parking is not permitted. Weather conditions on both survey days was fine. The survey on the Thursday was during school term time and the Saturday survey coincided with the opening day of the Point Erin Pools and hence potentially increasing the demand for on street parking on Sarsfield Street (between Shelly Beach Road and Curran Street).

The survey results are for on street parking and in addition there is parking available to residents within their property e.g. on a driveway or garage.

The survey data is attached at Appendix A**.**

2 Survey Results

The results from the surveys at each of the proposed HBT construction sites is detailed below.

2.1 Shaft 1 - impact of diversion route on Curran Street on street parking

As detailed in section 6.5.5 of the ITA, on street parking is proposed to be removed on Curran Street (between Sarsfield Street and Emmett Street) as part of the HBT CTMP to better accommodate the additional temporary traffic which will divert onto Curran Street as part of the closure of Sarsfield Street. The parking survey results indicated that for a weekday (outside of the school drop off and pick up times) there is sufficient parking space available on one side of Curran Street to accommodate the observed parking demand with the temporary removal of parking on one side of Curran Street. As part of the close liaison with Ponsonby Primary school, alternative drop off and pick up arrangements will be discussed and agreed given the removal of on street parking on one side of Curran Street. The parking survey indicated that on a Saturday there is a sufficient parking available to meet demand on one side of Curran Street.

2.2 Shaft 1- impact of diversion route on Emmett Street on street parking

As detailed in section 6.5.5 of the ITA, on street parking is proposed to be removed on Emmett Street as part of the HBT CTMP to better accommodate the additional temporary traffic which will divert onto Emmett Street as part of the closure of Sarsfield Street. The parking survey results for both the Thursday and Saturday indicated that there is sufficient parking space available on the south side of Emmett Street to accommodate all of the observed parking demand on Emmett Street, with the temporary removal of parking on the north side.

2.3 Shaft 1 - Sarsfield Street

As detailed in section 6.5.5 of the ITA, approximately 100m of on street parking on the north side of Sarsfield Street (east of Curran Street) will be temporarily removed during construction of Shaft 1. The parking survey indicated that a maximum of 8 cars parked on this section of Sarsfield Street on a Thursday. The survey indicated that at the time of this maximum number of vehicles parked, there were two empty spaces opposite on the south side of Sarsfield Street and 16 free parking spaces available on both sides of Sarsfield Street immediately east. It is a similar situation on the Saturday where all of the parking spaces are occupied but there is available parking on Sarsfield Street to the east. Therefore, it is considered that there is sufficient on street parking available within a short walking distance (less than 100 m or 1 minute walk time) for any on street parking temporarily displaced resulting from the Shaft 1 construction work.

2.4 SEO1 interception shaft – Sarsfield Street

As detailed in section 6.5.6 of the ITA, construction of SE01 will result in the temporary loss of a small amount of on street parking on Sarsfield Street, noting that most of the works are within the area of existing broken yellow lines where parking is not permitted. The results from the parking survey indicated that there are sufficient spare parking spaces on Sarsfield Street within a short walk (up to 150 m) on both a weekday and a Saturday to accommodate any temporary displaced parking from the SE01 works.

2.5 SEO2 interception shaft – Sarsfield Street

As detailed in section 6.5.7 of the ITA, construction of SE02 will result in the temporary loss of a small amount of on street parking on Sarsfield Street, noting that most of the works are within the area of existing broken yellow lines where parking is not permitted. The results from the parking survey indicated that there are sufficient spare parking spaces on Sarsfield Street within a short walk (up to 90 m) on both a weekday and a Saturday to accommodate any temporary displaced parking from the SE02 works.

2.6 SEO3 interception shaft – Sarsfield Street

As detailed in section 6.5.8 of the ITA, construction of SE03 will result in the temporary loss of a small amount of on street parking on Sarsfield Street, noting that some of the works are within the area of existing broken yellow lines where parking is not permitted. The results from the parking survey indicated that there are sufficient spare parking spaces on Sarsfield Street within a short walk (up to 85 m) on both a weekday and a Saturday to accommodate any temporary displaced parking from the SE03 works.

2.7 Shaft 2 – Sarsfield St/Wallace Street/Slack Street

As detailed in section 6.5.9 of the ITA, construction of Shaft 2 will result in the temporary loss of a small amount of on street parking on Sarsfield Street and Wallace Street, noting that some of the works are within the area of existing broken yellow lines where parking is not permitted. The results from the parking survey indicated that there are sufficient spare parking spaces on Sarsfield Street and Wallace Street within a short walk (up to 75 m) on both a weekday and a Saturday to accommodate any temporary displaced parking from the Shaft 2 works.

2.8 Shaft 3 –Wallace Street/Argyle Street

As detailed in section 6.5.10 of the ITA, construction of Shaft 3 will result in the temporary loss of a small amount of on street parking on Argyle Street and Wallace Street, noting that some of the works are within the area of existing broken yellow lines where parking is not permitted. The results from the parking survey indicated that there are insufficient spare parking spaces on Argyle Street to accommodate the existing parking demand but within a short walk (up to 65 m) there is available parking on Wallace Street on both a weekday and a Saturday to accommodate any temporary displaced parking from the Shaft 3 works.

2.9 CSA1 – Salisbury Reserve

As detailed in section 6.5.2 of the ITA, some on street parking adjacent to the proposed CSA1 site access will be temporarily removed to allow the safe movement of vehicles to/from CSA1. The parking survey indicated that there are circa 25 on street parking spaces on Argyle Street adjacent to CSA1 between Cremorne St and property #2 Argyle Street. The survey indicated that on a weekday there are up to 11 parking spaces available on street during the day but noting the amount of parking available between 0900-1200 was observed to be lower. On a Saturday, at a minimum there are at least 8 on street parking spaces available. Therefore, it is considered that there is sufficient on street parking available within a short walking distance (less than 100 m or 1 minute walk time) for any on street parking temporarily displaced resulting from the CSA1 access. Slightly further afield (180 m or a 2 minute walk time) the survey indicated up to 12 on street parking spaces are free during the weekday on Argyle Street between Cremorne Street and Clifton Road (but noting the amount of parking available between 0900-1200 was lower) and at least 6 spaces free on a Saturday. It should be noted that resident parking permits do not apply on Argyle Street.

2.10 SE04 –Argyle Street

As detailed in section 6.5.11 of the ITA, construction of SE04 will result in the temporary loss of a small amount of on street parking on Argyle Street. The results from the parking survey indicated that there are sufficient spare parking spaces on Argyle Street on both a weekday and a Saturday adjacent to the works to accommodate any temporary displaced parking from the SE04 works.

2.11 Shaft 4 –Argyle Street/Herne Bay Road

As detailed in section 6.5.12 of the ITA, construction of Shaft 4 will result in the temporary loss of a small amount of on street parking on Argyle Street and Herne Bay Road. The results from the parking survey indicated that there are sufficient spare parking spaces on Argyle Street and Herne Bay Road

on both a weekday and a Saturday adjacent to the works to accommodate any temporary displaced parking from the Shaft 4 works.

2.12 Shaft 5 –Upton Street/Herne Bay Road

As detailed in section 6.5.13 of the ITA, construction of Shaft 5 will result in the temporary loss of a small amount of on street parking on Upton Street and Herne Bay Road. The results from the parking survey indicated that there are sufficient spare parking spaces on Upton Street and Herne Bay Road on both a weekday and a Saturday adjacent to the works to accommodate any temporary displaced parking from the Shaft 5 works.

2.13 Shaft 6 –Upton Street/Marine Parade

As detailed in section 6.5.14 of the ITA, construction of Shaft 6 will result in the temporary loss of a small amount of on street parking on Upton Street and Marine Parade. The results from the parking survey indicated that there are sufficient spare parking spaces on Upton Street and Marine on both a weekday and a Saturday adjacent to the works to accommodate any temporary displaced parking from the Shaft 6 works.

2.14 Shaft 7 –Marine Parade

As detailed in section 6.5.15 of the ITA, construction of Shaft 7 will result in the temporary loss of a small amount of on street parking on Marine Parade. The results from the parking survey indicated that there are sufficient spare parking spaces on Marine Parade on both a weekday and a Saturday adjacent to the works to accommodate any temporary displaced parking from the Shaft 7 works.

2.15 Shaft 8 –Marine Parade/Bella Vista Road

As detailed in section 6.5.16 of the ITA, construction of Shaft 8 will result in the temporary loss of a small amount of on street parking on Marine Parade. The results from the parking survey indicated that there are sufficient spare parking spaces on Marine Parade adjacent to the works to accommodate the existing parking on both a weekday and a Saturday to accommodate any temporary displaced parking from the Shaft 8 works.

2.16 Summary

Based on the results from a survey of on street parking on the route of the HBT project and on the proposed Shaft 1 diversion route, on a weekday and Saturday the following is concluded:

- Shaft 1 (impact of diversion route on Curran Street) - In addition to parking within a property (e.g. driveway/garage) there is sufficient parking space available on one side of Curran Street to accommodate the observed parking demand with the temporary removal of parking on one side of Curran Street as part of the CTMP. As part of the close liaison with Ponsonby Primary school, alternative drop off and pick up arrangements will be discussed and agreed given the removal of on street parking on one side of Curran Street. Residents Parking Permits operate on Curran Street.
- Shaft 1 (impact of diversion route on Emmett Street) - In addition to parking within a property (e.g. driveway/garage) there is sufficient parking space available on the south side of Curran Street to accommodate the observed parking demand with the temporary removal of parking on one side of Emmett Street as part of the CTMP. Residents Parking Permits operate on Emmett Street.
- Shaft 1, SE01, SE02, SE03, Shaft 2 and Shaft 3 (Sarsfield Street and Wallace Street) - In addition to parking within a property (eg driveway/garage) there is sufficient on street parking available within a short walking distance (less than 150 m or 1 to 2 minute walk time) for any on street parking temporarily displaced resulting from the construction work. Residents Parking Permits operate on Sarsfield Street and Wallace Street.
- CSA1 (Argyle Street) - In addition to parking within a property (eg driveway/garage) there is sufficient on street parking available within a short walking distance (less than 180 m or 2 minute walk time) for any on street parking temporarily displaced resulting from the CSA1 access. It should be noted that resident parking permits do not apply on Argyle Street.
- Shafts 4, 5, 6, 7 and 8 – Herne Bay Road/Upton Street/Marine Parade - In addition to parking within a property (eg driveway/garage) there is sufficient on street parking available adjacent to the construction sites for any on street parking temporarily displaced resulting from the construction work. It should be noted that resident parking permits do not apply on Argyle Street.

It is concluded that there is sufficient on street parking available to accommodate any displaced on street parking arising from the HBT project construction work.

Appendix A Appendix A - On street parking survey

Herne Bay Parking Survey **Weather Fine** **Thur 23/11/2023**

Northern Side P120 Southern side P120 0800 to 1800 Mon-Fri (Except authorised vehicles)

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street	Sarffield St																							
Area	Between Shelly Beach Road & No14 Sarsfield St				Between No14 Sarsfield St & Curran St				Between Curran St & Hamilton Rd				Between Hamilton Rd & Sentinel Rd				Between Sentinel Rd & Lawrence St				Between Lawrence St & Wallace St			
Time	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces
Spaces	11		16		7		11		17		12		16		22		7		7		6		6	
6:00	6	5	6	10	2	5	3	8	13	4	15	-3	8	8	14	8	2	5	3	4	2	4	2	4
6:30	7	4	6	10	2	5	1	10	14	3	10	2	13	3	13	9	8	-1	4	3	1	5	2	4
7:00	7	4	6	10	2	5	2	9	12	5	10	2	7	9	15	7	1	6	3	4	3	3	1	5
7:30	7	4	5	11	3	4	2	9	13	4	10	2	8	8	16	6	1	6	6	1	4	2	1	5
8:00	6	5	5	11	4	3	2	9	14	3	10	2	12	4	16	6	2	5	5	2	3	3	3	3
8:30	7	4	4	12	3	4	3	8	13	4	10	2	9	7	14	8	2	5	4	3	5	1	2	4
9:00	7	4	1	15	4	3	2	9	14	3	11	1	6	10	13	9	3	4	4	3	4	2	2	4
9:30	4	7	6	10	1	6	2	9	12	5	11	1	7	9	15	7	2	5	3	4	3	3	4	2
10:00	4	7	6	10	1	6	2	9	13	4	10	2	7	9	13	9	1	6	2	5	4	2	2	4
10:30	2	9	3	13	4	3	4	7	13	4	6	6	9	7	12	10	1	6	2	5	3	3	1	5
11:00	4	7	5	11	3	4	2	9	12	5	8	4	5	11	14	8	2	5	2	5	2	4	2	4
11:30	2	9	4	12	5	2	4	7	11	6	8	4	5	11	16	6	2	5	2	5	2	4	1	5
12:00	1	10	4	12	4	3	4	7	9	8	8	4	4	12	9	13	1	6	2	5	3	3	1	5
12:30	1	10	2	14	4	3	5	6	11	6	6	6	4	12	8	14	2	5	4	3	2	4	3	3
13:00	1	10	2	14	4	3	5	6	10	7	9	3	6	10	10	12	2	5	4	3	2	4	4	2
13:30	1	10	1	15	4	3	6	5	12	5	8	4	5	11	11	11	1	6	4	3	1	5	2	4
14:00	1	10	1	15	3	4	6	5	14	3	9	3	4	12	11	11	1	6	4	3	3	3	3	3
14:30	2	9	2	14	5	2	6	5	13	4	8	4	4	12	15	7	1	6	3	4	3	3	2	4
15:00	5	6	6	10	5	2	8	3	18	-1	13	-1	4	12	13	9	3	4	2	5	3	3	2	4
15:30	4	7	2	14	6	1	6	5	15	2	7	5	8	8	12	10	4	3	2	5	3	3	3	3
16:00	2	9	2	14	6	1	6	5	15	2	9	3	8	8	11	11	4	3	2	5	3	3	2	4
16:30	1	10	1	15	5	2	7	4	14	3	10	2	9	7	12	10	6	1	2	5	2	4	2	4
17:00	3	8	1	15	5	2	6	5	15	2	9	3	10	6	12	10	4	3	3	4	2	4	0	6
17:30	2	9	2	14	6	1	5	6	13	4	8	4	8	8	12	10	3	4	4	3	3	3	0	6
18:00	4	7	7	9	4	3	2	9	14	3	8	4	5	11	10	12	3	4	4	3	3	3	0	6

Herne Bay Parking Survey **Weather Fine** **Thur 23/11/2023**

Eastern Side P120 (Except authorised vehicles) Western Side P2 0830 to 0900 and 1455 to 1525 P120 outside those times

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street	Curran St			
Area	Between Sarsfield St & Emmett St			
Time	Eastern Side	Free Spaces	Western Side	Free Spaces
Spaces	8		7	
6:00	4	4	0	7
6:30	4	4	0	7
7:00	3	5	1	6
7:30	3	5	2	5
8:00	7	1	6	1
8:30	7	1	8	-1
9:00	4	4	3	4
9:30	2	6	2	5
10:00	1	7	2	5
10:30	2	6	2	5
11:00	0	8	2	5
11:30	3	5	2	5
12:00	3	5	4	3
12:30	5	3	5	2
13:00	4	4	1	6
13:30	3	5	2	5
14:00	3	5	2	5
14:30	3	5	5	2
15:00	8	0	7	0
15:30	3	5	3	4
16:00	3	5	1	6
16:30	2	6	2	5
17:00	3	5	2	5
17:30	2	6	2	5
18:00	3	5	3	4

Herne Bay Parking Survey **Weather Fine** **Thur 23/11/2023**

Northern Side P120 Southern side P120 (Except authorised vehicles)

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street	Emmett Street			
Area	Between Curran St & Shelly Beach Rd			
Time	Northern Side	Free Spaces	Southern Side	Free Spaces
Spaces	25		38	
6:00	13	12	11	27
6:30	14	11	12	26
7:00	18	7	12	26
7:30	10	15	16	22
8:00	8	17	6	32
8:30	8	17	13	25
9:00	8	17	12	26
9:30	7	18	12	26
10:00	8	17	12	26
10:30	9	16	12	26
11:00	10	15	15	23
11:30	17	8	8	30
12:00	7	18	16	22
12:30	7	18	15	23
13:00	8	17	12	26
13:30	9	16	13	25
14:00	10	15	13	25
14:30	10	15	11	27
15:00	16	9	27	11
15:30	10	15	11	27
16:00	10	15	11	27
16:30	6	19	11	27
17:00	9	16	13	25
17:30	10	15	15	23
18:00	7	18	14	24

Herne Bay Parking Survey **Weather Fine** **Thur 23/11/2023**

Spaces at unmarked parked spaces based on 6m spacing 1m from the driveway

Street	Wallace St			
Area	Between Sarsfield St & Argyle St			
Time	Eastern Side	Free Spaces	Western Side	Free Spaces
Spaces	5		6	
6:00	2	3	3	3
6:30	3	2	2	4
7:00	2	3	2	4
7:30	2	3	3	3
8:00	2	3	3	3
8:30	2	3	3	3
9:00	2	3	3	3
9:30	2	3	2	4
10:00	3	2	3	3
10:30	1	4	3	3
11:00	1	4	3	3
11:30	2	3	4	2
12:00	3	2	4	2
12:30	3	2	4	2
13:00	3	2	4	2
13:30	3	2	3	3
14:00	3	2	3	3
14:30	3	2	3	3
15:00	2	3	4	2
15:30	1	4	4	2
16:00	1	4	3	3
16:30	1	4	3	3
17:00	2	3	3	3
17:30	3	2	3	3
18:00	3	2	3	3

Herne Bay Parking Survey **Weather Fine** **Thur 23/11/2023**

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street									
Area	Between Wallace St & No.2 Argyle St				Between No2 Argyle St & Cremorne St				Betwe
Time	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side
Spaces	3		3		11		14		8
6:00	3	0	3	0	4	7	10	4	6
6:30	2	1	3	0	10	1	10	4	6
7:00	2	1	4	-1	8	3	10	4	5
7:30	3	0	4	-1	6	5	10	4	4
8:00	3	0	3	0	8	3	10	4	4
8:30	4	-1	3	0	6	5	10	4	5
9:00	4	-1	3	0	9	2	12	2	7
9:30	4	-1	2	1	11	0	11	3	7
10:00	4	-1	2	1	11	0	14	0	6
10:30	4	-1	3	0	11	0	13	1	7
11:00	3	0	3	0	11	0	14	0	8
11:30	3	0	3	0	10	1	13	1	7
12:00	3	0	3	0	8	3	13	1	5
12:30	3	0	3	0	6	5	13	1	4
13:00	3	0	3	0	5	6	13	1	4
13:30	3	0	3	0	4	7	12	2	3
14:00	3	0	2	1	5	6	11	3	5
14:30	3	0	1	2	6	5	11	3	5
15:00	3	0	2	1	7	4	13	1	3
15:30	3	0	2	1	6	5	11	3	3
16:00	3	0	1	2	6	5	11	3	2
16:30	4	-1	2	1	6	5	11	3	3
17:00	2	1	2	1	6	5	9	5	2
17:30	3	0	3	0	7	4	8	6	3
18:00	4	-1	2	1	5	6	10	4	3

Argyle St

en Cremorne St & Clifton Rd			Between Clifton Rd to Masons Ave				Between Masons Ave & Herne		
Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side
3	9		14		13		7		9
2	4	5	10	4	5	8	2	5	2
2	4	5	8	6	5	8	2	5	2
3	4	5	8	6	10	3	2	5	3
4	4	5	8	6	10	3	2	5	1
4	4	5	8	6	11	2	2	5	2
3	4	5	8	6	11	2	1	6	3
1	7	2	10	4	10	3	1	6	2
1	10	-1	7	7	8	5	1	6	4
2	8	1	8	6	8	5	2	5	2
1	8	1	11	3	10	3	3	4	4
0	8	1	12	2	12	1	3	4	3
1	8	1	12	2	10	3	3	4	3
3	7	2	11	3	9	4	3	4	4
4	7	2	11	3	8	5	3	4	4
4	7	2	11	3	7	6	3	4	4
5	5	4	9	5	8	5	3	4	3
3	5	4	10	4	9	4	3	4	2
3	5	4	10	4	9	4	3	4	3
5	5	4	11	3	10	3	3	4	4
5	5	4	10	4	7	6	5	2	4
6	3	6	10	4	7	6	4	3	2
5	2	7	9	5	4	9	4	3	3
6	3	6	11	3	8	5	5	2	2
5	3	6	12	2	8	5	4	3	1
5	3	6	15	-1	9	4	3	4	2

e Bay Rd
Free Spaces
7
7
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7
8
7

Herne Bay Parking Survey **Weather Fine** **Thur 23/11/2023**

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street	Herne Bay Rd			
Area	Between Argyle St & Upton St			
Time	Eastern Side	Free Spaces	Western Side	Free Spaces
Spaces	5		6	
6:00	0	5	2	4
6:30	0	5	1	5
7:00	0	5	3	3
7:30	0	5	3	3
8:00	0	5	5	1
8:30	0	5	5	1
9:00	0	5	4	2
9:30	0	5	4	2
10:00	0	5	1	5
10:30	0	5	4	2
11:00	0	5	3	3
11:30	0	5	3	3
12:00	0	5	3	3
12:30	0	5	2	4
13:00	0	5	3	3
13:30	1	4	2	4
14:00	0	5	4	2
14:30	0	5	6	0
15:00	2	3	6	0
15:30	2	3	5	1
16:00	1	4	6	0
16:30	1	4	6	0
17:00	1	4	6	0
17:30	0	5	6	0
18:00	0	5	4	2

Herne Bay Parking Survey **Weather Fine** **Thur 23/11/2023**

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street	Upton St							
Area	Between Herne Bay Rd & Galatea Tce				Between Galatea Tce & Marine Pde			
Time	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces
Spaces	10		10		9		8	
6:00	4	6	0	10	2	7	0	8
6:30	4	6	0	10	2	7	1	7
7:00	4	6	0	10	2	7	1	7
7:30	3	7	0	10	2	7	1	7
8:00	4	6		10	2	7	1	7
8:30	4	6	1	9	3	6	1	7
9:00	1	9	0	10	3	6	1	7
9:30	1	9	0	10	3	6	1	7
10:00	2	8	0	10	3	6	2	6
10:30	2	8	0	10	2	7	1	7
11:00	2	8	0	10	3	6	1	7
11:30	3	7	0	10	3	6	1	7
12:00	3	7	0	10	2	7	2	6
12:30	2	8	0	10	2	7	3	5
13:00	1	9	0	10	2	7	4	4
13:30	1	9	0	10	1	8	3	5
14:00	1	9	1	9	2	7	2	6
14:30	1	9	1	9	2	7	2	6
15:00	0	10	1	9	2	7	2	6
15:30	1	9	1	9	2	7	2	6
16:00	2	8	1	9	2	7	2	6
16:30	2	8	0	10	2	7	2	6
17:00	2	8	1	9	4	5	1	7
17:30	3	7	0	10	3	6	0	8
18:00	3	7	0	10	3	6	1	7

Herne Bay Parking Survey **Weather Fine** **Thur 23/11/2023**

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street	Marine Parade			
Area	Between Upton St & Bella Vista			
Time	Eastern Side	Free Spaces	Western Side	Free Spaces
Spaces	17		12	
6:00	4	13	4	8
6:30	4	13	4	8
7:00	3	14	4	8
7:30	3	14	5	7
8:00	3	14	5	7
8:30	3	14	8	4
9:00	1	16	5	7
9:30	1	16	5	7
10:00	2	15	9	3
10:30	1	16	7	5
11:00	1	16	5	7
11:30	1	16	5	7
12:00	1	16	4	8
12:30	1	16	8	4
13:00	1	16	8	4
13:30	1	16	6	6
14:00	1	16	6	6
14:30	1	16	6	6
15:00	1	16	4	8
15:30	1	16	5	7
16:00	2	15	2	10
16:30	2	15	4	8
17:00	3	14	7	5
17:30	3	14	4	8
18:00	4	13	6	6

Herne Bay Parking Survey **Weather Fine** **Sat 25/11/2023**

Northern Side P120 Southern side P120 0800 to 1800 Mon-Fri (Except authorised vehicles)

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street	Sarffield St																							
Area	Between Shelly Beach Road & No14 Sarsfield St				Between No14 Sarsfield St & Curran St				Between Curran St & Hamilton Rd				Between Hamilton Rd & Sentinel Rd				Between Sentinel Rd & Lawrence St				Between Lawrence St & Wallace St			
Time	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces
Spaces	11		16		7		11		17		12		16		22		7		7		6		6	
6:00	5	6	5	11	4	3	5	6	14	3	10	2	6	10	15	7	6	1	4	3	2	4	2	4
6:30	3	8	6	10	5	2	5	6	14	3	10	2	6	10	15	7	6	1	4	3	5	1	2	4
7:00	3	8	7	9	6	1	4	7	15	2	10	2	8	8	15	7	6	1	4	3	2	4	2	4
7:30	3	8	8	8	5	2	4	7	14	3	11	1	8	8	13	9	6	1	4	3	3	3	2	4
8:00	4	7	6	10	3	4	8	3	12	5	11	1	8	8	13	9	6	1	4	3	2	4	1	5
8:30	2	9	5	11	6	1	4	7	12	5	11	1	6	10	5	17	6	1	3	4	3	3	1	5
9:00	6	5	4	12	4	3	6	5	11	6	11	1	5	11	10	12	6	1	3	4	1	5	0	6
9:30	3	8	4	12	6	1	3	8	13	4	11	1	5	11	10	12	5	2	3	4	4	2	0	6
10:00	7	4	4	12	2	5	6	5	12	5	10	2	4	12	11	11	5	2	2	5	5	1	1	5
10:30	3	8	3	13	7	0	5	6	12	5	11	1	6	10	10	12	5	2	2	5	5	1	1	5
11:00	3	8	4	12	9	-2	4	7	15	2	11	1	6	10	11	11	5	2	2	5	3	3	1	5
11:30	8	3	7	9	4	3	3	8	13	4	11	1	8	8	10	12	5	2	2	5	3	3	2	4
12:00	4	7	8	8	5	2	7	4	13	4	12	0	8	8	10	12	5	2	2	5	3	3	2	4
12:30	4	7	4	12	7	0	6	5	12	5	11	1		16	9	13	5	2	2	5	4	2	3	3
13:00	4	7	7	9	3	4	4	7	13	4	11	1	7	9	9	13	5	2	2	5	3	3	7	-1
13:30	4	7	4	12	8	-1	10	1	12	5	13	-1	9	7	10	12	5	2	3	4	4	2	4	2
14:00	3	8	6	10	8	-1	11	0	14	3	11	1	9	7	10	12	5	2	2	5	3	3	4	2
14:30	7	4	11	5	2	5	10	1	15	2	11	1	9	7	9	13	4	3	2	5	4	2	4	2
15:00	4	7	6	10	9	-2	9	2	13	4	11	1	8	8	10	12	4	3	2	5	4	2	2	4
15:30	8	3	10	6	8	-1	10	1	15	2	11	1	8	8	12	10	3	4	2	5	4	2	2	4
16:00	4	7	7	9	9	-2	9	2	13	4	11	1	12	4	13	9	2	5	3	4	5	1	2	4
16:30	4	7	5	11	8	-1	7	4	13	4	11	1	12	4	13	9	2	5	3	4	5	1	2	4
17:00	4	7	5	11	8	-1	7	4	12	5	10	2	12	4	15	7	2	5	3	4	5	1	2	4
17:30	5	6	2	14	4	3	7	4	14	3	10	2	12	4	16	6	2	5	4	3	5	1	2	4
18:00	2	9	6	10	5	2	5	6	13	4	13	-1	17	-1	13	9	2	5	4	3	6	0	2	4

Herne Bay Parking Survey **Weather Fine** **Sat 25/11/2023**

Eastern Side P120 (Except authorised vehicles) Western Side P2 0830 to 0900 and 1455 to 1525 P120 outside those times

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street	Curran St			
Area	Between Sarsfield St & Emmett St			
Time	Eastern Side	Free Spaces	Western Side	Free Spaces
Spaces	8		7	
6:00	2	6	2	5
6:30	2	6	2	5
7:00	1	7	2	5
7:30	1	7	3	4
8:00	1	7	2	5
8:30	1	7	3	4
9:00	1	7	3	4
9:30	0	8	3	4
10:00	0	8	4	3
10:30	0	8	4	3
11:00	0	8	3	4
11:30	0	8	1	6
12:00	0	8	1	6
12:30	0	8	3	4
13:00	0	8	3	4
13:30	1	7	5	2
14:00	1	7	3	4
14:30	2	6	2	5
15:00	2	6	2	5
15:30	2	6	2	5
16:00	1	7	2	5
16:30	1	7	2	5
17:00	0	8	1	6
17:30	0	8	1	6
18:00	1	7	2	5

Herne Bay Parking Survey **Weather Fine** **Sat 25/11/2023**

Northern Side P120 Southern side P120 (Except authorised vehicles)

Spaces at unmarked parked spaced based on 6m spacing 1m from the driveway

Street	Emmett Street			
Area	Between Curran St & Shelly Beach Rd			
Time	Northern Side	Free Spaces	Southern Side	Free Spaces
Spaces	25		38	
6:00	10	15	2	36
6:30	9	16	2	36
7:00	10	15	2	36
7:30	11	14	3	35
8:00	10	15	2	36
8:30	11	14	3	35
9:00	10	15	3	35
9:30	9	16	3	35
10:00	8	17	4	34
10:30	10	15	4	34
11:00	16	9	3	35
11:30	8	17	1	37
12:00	15	10	1	37
12:30	8	17	3	35
13:00	7	18	3	35
13:30	7	18	5	33
14:00	6	19	3	35
14:30	8	17	2	36
15:00	7	18	2	36
15:30	10	15	2	36
16:00	10	15	2	36
16:30	10	15	2	36
17:00	11	14	1	37
17:30	11	14	1	37
18:00	11	14	2	36

Herne Bay Parking Survey **Weather Fine** **Sat 25/11/2023**

Spaces at unmarked parked spaces based on 6m spacing 1m from the driveway

Street	Wallace St			
Area	Between Sarsfield St & Argyle St			
Time	Eastern Side	Free Spaces	Western Side	Free Spaces
Spaces	5		6	
6:00	2	3	4	2
6:30	2	3	4	2
7:00	4	1	4	2
7:30	2	3	4	2
8:00	2	3	3	3
8:30	2	3	3	3
9:00	2	3	3	3
9:30	2	3	3	3
10:00	2	3	3	3
10:30	2	3	3	3
11:00	2	3	3	3
11:30	3	2	4	2
12:00	3	2	3	3
12:30	3	2	3	3
13:00	1	4	3	3
13:30	3	2	3	3
14:00	3	2	4	2
14:30	3	2	4	2
15:00	3	2	3	3
15:30	3	2	4	2
16:00	4	1	4	2
16:30	4	1	4	2
17:00	4	1	5	1
17:30	4	1	5	1
18:00	5	0	3	3

Herne Bay Parking Survey **Weather Fine** **Sat 25/11/2023**

Spaces at unmarked parked spaces based on 6m spacing 1m from the driveway

Street	Argyle St																			
Area	Between Wallace St & No.2 Argyle St				Between No2 Argyle St & Cremorne St				Between Cremorne St & Clifton Rd				Between Clifton Rd to Masons Ave				Between Masons Ave & Herne Bay Rd			
Time	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces
Spaces	3		3		11		14		8		9		14		13		7		9	
6:00	3	0	3	0	4	7	10	4	4	4	3	6	8	6	7	6	2	5	3	6
6:30	3	0	3	0	6	5	10	4	5	3	6	3	2	12	4	9	2	5	0	9
7:00	4	-1	3	0	4	7	10	4	5	3	3	6	8	6	7	6	1	6	3	6
7:30	4	-1	2	1	5	6	9	5	3	5	3	6	8	6	6	7	2	5	4	5
8:00	4	-1	2	1	4	7	7	7	3	5	3	6	8	6	7	6	2	5	3	6
8:30	4	-1	3	0	4	7	8	6	3	5	3	6	8	6	8	5	2	5	3	6
9:00	4	-1	3	0	3	8	7	7	4	4	5	4	8	6	8	5	2	5	3	6
9:30	3	0	3	0	4	7	7	7	3	5	5	4	8	6	7	6	2	5	3	6
10:00	3	0	3	0	7	4	7	7	2	6	3	6	8	6	6	7	1	6	3	6
10:30	3	0	3	0	6	5	7	7	3	5	2	7	8	6	7	6	2	5	3	6
11:00	3	0	2	1	6	5	7	7	3	5	2	7	8	6	6	7	3	4	3	6
11:30	3	0	2	1	6	5	3	11	3	5	2	7	7	7	5	8	2	5	6	3
12:00	2	1	1	2	4	7	8	6	2	6	1	8	7	7	6	7	1	6	4	5
12:30	2	1	2	1	7	4	2	12	3	5	1	8	8	6	7	6	1	6	4	5
13:00	2	1	1	2	7	4	9	5	4	4	2	7	7	7	7	6	2	5	5	4
13:30	3	0	2	1	8	3	7	7	4	4	2	7	7	7	7	6	2	5	4	5
14:00	2	1	1	2	7	4	9	5	5	3	2	7	9	5	7	6	2	5	4	5
14:30	2	1	2	1	7	4	8	6	4	4	2	7	11	3	7	6	2	5	3	6
15:00	2	1	2	1	7	4	8	6	4	4	2	7	11	3	6	7	2	5	4	5
15:30	2	1	1	2	8	3	9	5	4	4	2	7	10	4	7	6	4	3	4	5
16:00	3	0	1	2	5	6	9	5	3	5	3	6	11	3	7	6	2	5	4	5
16:30	3	0	1	2	5	6	9	5	3	5	3	6	11	3	7	6	2	5	4	5
17:00	3	0	1	2	6	5	9	5	2	6	3	6	10	4	8	5	2	5	3	6
17:30	3	0	1	2	6	5	8	6	3	5	4	5	11	3	7	6	2	5	3	6
18:00	3	0	3	0	7	4	6	8	8	0	9	0	3	11	2	11	0	7	3	6

Herne Bay Parking Survey **Weather Fine** **Sat 25/11/2023**

Spaces at unmarked parked spaces based on 6m spacing 1m from the driveway

Street	Herne Bay Rd			
Area	Between Argyle St & Upton St			
Time	Eastern Side	Free Spaces	Western Side	Free Spaces
Spaces	5		6	
6:00	0	5	3	3
6:30	0	5	3	3
7:00	0	5	3	3
7:30	0	5	3	3
8:00	0	5	3	3
8:30	0	5	3	3
9:00	0	5	3	3
9:30	0	5	3	3
10:00	0	5	2	4
10:30	0	5	3	3
11:00	1	4	5	1
11:30	0	5	6	0
12:00	0	5	6	0
12:30	0	5	6	0
13:00	0	5	5	1
13:30	1	4	4	2
14:00	0	5	4	2
14:30	1	4	5	1
15:00	3	2	4	2
15:30	0	5	3	3
16:00	0	5	4	2
16:30	0	5	4	2
17:00	0	5	4	2
17:30	0	5	5	1
18:00	3	2	2	4

Herne Bay Parking Survey **Weather Fine** **Sat 25/11/2023**

Spaces at unmarked parked spaces based on 6m spacing 1m from the driveway

Street	Upton St							
Area	Between Herne Bay Rd & Galatea Tce				Between Galatea Tce & Marine Pde			
Time	Southern Side	Free Spaces	Northern Side	Free Spaces	Southern Side	Free Spaces	Northern Side	Free Spaces
Spaces	10		10		9		8	
6:00	4	6	1	9	2	7	0	8
6:30	4	6	1	9	2	7	0	8
7:00	4	6	1	9	2	7	0	8
7:30	4	6	1	9	2	7	0	8
8:00	3	7	1	9	2	7	0	8
8:30	3	7	1	9	2	7	0	8
9:00	3	7	2	8	1	8	0	8
9:30	4	6	1	9	1	8	0	8
10:00	4	6	1	9	1	8	0	8
10:30	4	6	1	9	1	8	0	8
11:00	4	6	0	10	2	7	0	8
11:30	4	6	0	10	2	7	0	8
12:00	2	8	0	10	3	6	0	8
12:30	2	8	0	10	3	6	0	8
13:00	4	6	0	10	3	6	0	8
13:30	4	6	0	10	3	6	0	8
14:00	3	7	0	10	2	7	0	8
14:30	4	6	0	10	1	8	0	8
15:00	3	7	0	10	1	8	0	8
15:30	4	6	0	10	1	8	0	8
16:00	4	6	0	10	1	8	0	8
16:30	4	6	0	10	1	8	0	8
17:00	4	6	0	10	2	7	0	8
17:30	4	6	0	10	2	7	0	8
18:00	4	6	0	10	2	7	0	8

Herne Bay Parking Survey **Weather Fine** **Sat 25/11/2023**

Spaces at unmarked parked spaces based on 6m spacing 1m from the driveway

Street	Marine Parade			
Area	Between Upton St & Bella Vista			
Time	Eastern Side	Free Spaces	Western Side	Free Spaces
Spaces	17		12	
6:00	6	11	5	7
6:30	6	11	5	7
7:00	6	11	5	7
7:30	6	11	4	8
8:00	5	12	5	7
8:30	5	12	4	8
9:00	5	12	4	8
9:30	6	11	4	8
10:00	5	12	6	6
10:30	4	13	5	7
11:00	3	14	6	6
11:30	2	15	5	7
12:00	3	14	6	6
12:30	3	14	3	9
13:00	3	14	4	8
13:30	3	14	5	7
14:00	3	14	5	7
14:30	3	14	6	6
15:00	3	14	4	8
15:30	3	14	4	8
16:00	3	14	3	9
16:30	3	14	3	9
17:00	3	14	3	9
17:30	3	14	3	9
18:00	3	14	3	9

Appendix B - Draft CTMP measures

Table 7.1 of CTMP - site specific management strategies for the Project.

Traffic management activity	General management strategies
Partial and/or full road closures	• Partial and/or full road closures will be avoided where possible. The ITA has assessed the impact of proposed partial or full road closures. • SSTMPs will be developed to manage and mitigate the effects of partial and/or full road closures.
Site access and egress	• Construction driver education programmes will be implemented, particularly in relation to access and egress of sites adjacent to significant pedestrian generators, such as Ponsonby Primary School. • Traffic marshals are required for all sites near significant pedestrian generators. • Any damage to the road corridor directly caused by heavy vehicles entering or exiting construction sites shall be repaired within two weeks or within an alternative timeframe to be agreed with AT. • Stop/Go traffic management is recommended to assist with the transport of large loads to the sites. • Left-In-Left-Out of site access points is proposed to mitigate uncontrolled right turns, as far as reasonably practicable.
Construction vehicle movements, routes and hours of operation	• Truck routes will generally follow Arterial/Collector roads closest to the site with right turns occurring at either signalised intersections or roundabouts when available. • Where possible, truck layover areas will be provided within the site. • Temporary removal of parking on surrounding streets will occur if a truck layover area is unable to be provided on site. • All over dimension vehicle routes to be agreed with AT/Waka Kotahi. • Procedures shall be developed to ensure any spill of materials being transported to or from the site are contained. • Major construction activities that generate peaks of traffic, such as significant concrete pours will, as far as practicable, be scheduled to avoid the morning and peak evening periods. • Any works that may need to take place outside of the specified days or hours shall provide a report to Council, within five working days prior to the commencement of such work, detailing how the work was authorised.
Traffic signals and roads and intersections performance	Monitor the performance of the key roads and intersection performances identified in the ITA with AT/Waka Kotahi and review signal phasing and timing if required.
Parking	• There will be minor temporary loss of on street parking at all sites to accommodate heavy vehicle entry and exit to CSA1 and at the Satellite Sites. • Contractors will provide staff and visitor parking within CSA 1 and CSA 2. • If required, site staff overflow parking will be on residential streets near the construction sites.

Traffic management activity	General management strategies
	• Should any street parking need to be occupied, these parking spaces need to be coned off a minimum of 24 to 48 hours prior to these works commencing by displaying the appropriate 'No Parking' signage at least every 6m along the road. A notice will also be placed under the windscreen wipers of cars in the affected work site area. • Full reinstatement of any car park spaces that have been impacted during construction activities.
Emergency vehicle access	• Emergency vehicle access will include provisions for Fire and Emergency Services New Zealand and other specialised emergency services. • If requested by the emergency services, any vehicles within the sites will be removed to provide for emergency vehicle access. Vehicles will not be moved unless load is secured and safe to move. • Emergency vehicles will have unrestricted access to the site for any emergencies that occur at ground level and when the site is attended. • The emergency services (notably the Fire Service and Emergency NZ) will be notified of the appropriate contact for 24hr site access prior to the works through the Construction Management Plan and individual Traffic Management Plan application processes.
Active user requirements	• SSTMPs will be developed to manage this effect with alternative access arrangements to be implemented. • Temporary access in accordance with NZGTTM/CoPTTM. • Temporary detours that are as short as possible and as convenient as practicable, having regard to safety of all users. • Full reinstatement of any footpaths, shared paths or cycle paths that have been impacted during construction.
Parks and reserves	Access to parks and reserves shall be maintained at all times.
Public transport	There are no public transport services on the Project route, AT Metro to be advised of diversion routes which may increase traffic flows on the bus routes on Jervois Road and Curran Street.
CSA1 and 2 and satellite site access	The following requirements will be met as part of the Project site access works: • SSTMPs will cater for safe and effective site access point use. • If vehicles are required to stop or reverse in a live lane to gain access to site, Manual Traffic Control (MTC) will be implemented using an approved SSTMP during off peak hours. • Vehicle-mounted flashing beacons must be switched on prior to a work vehicle entering or leaving a closure. • Construction and delivery drivers will call ahead to the STMS by radio or mobile phone when approaching the worksite access to ensure that the gate is clear of obstructions and they can enter the site without blocking flowing traffic. • Traffic Control (TC) will be in place at each site access to remove cones and allow vehicle into site. • TTM must be designed to allow the safe and efficient movement to and from the closure of visitors or workers either in work vehicles or on foot.

Traffic management activity	General management strategies
	• Maintaining the safety of the site access is the responsibility of all and will be managed by the STMS.
Kerbside refuse collections	To be managed by the TTM team. Residents will be advised to leave bins outside their properties as usual and Traffic Controllers onsite will move bins to the nearest accessible location for collection. Collectors to be advised where these locations are via the Contractor Stakeholder Manager and Newsletters as per the Communication Plan.
Wait areas	Any trucks waiting to enter the sites will need to park on adjacent roads in accordance with NZ laws and Council regulations and be called to the site if there is insufficient room to accommodate multiple trucks on-site.
Materials storage	Materials are to be stored at CSA1, CSA2 and at Satellite sites.
Workers and sub-contractors vehicles	There will be enough room within CSA2 for contractors and visitors to park. There will be space in CSA1 for some contractors to park and, where required, Contractors will be advised to park within the road regulations on street. It is recommended that a secure lock up facility for contractors tools is provided on-the sites so that workers do not have to drive to the site in the morning and evening to drop off/ pick up tools. This would allow contractors to make use of the public transport provisions that include regular bus services in the area.
Utility services	Some limited disruption to utility services may occur but it is not foreseen that outside of these works there will be a need to restrict access to utility services.
Pedestrian safety	• At all times, pedestrians will be managed in accordance with NZGTTM/CoPTTM. Where possible, footpaths will remain open. • For some works (vehicle crossing works, etc) pedestrians will be managed in accordance with NZGTTM/CoPTTM and footpaths temporarily closed (if required) with appropriate signage and ramps provided to direct pedestrians. It is considered prudent that a fence is put in place around the perimeter of the sites to prevent inadvertent / unauthorised access into the site by pedestrians. • At the interface of the construction areas with the existing network there are many places where pedestrian and/or cyclist facilities exist. These will be safely managed using a hierarchy of measures as follows: – Carry out construction whilst maintaining access to existing footpath with no impact to pedestrians. – Realign or redirect the facility onto temporary surfacing on the same side of the road. – Close the facility, with an alternative facility provided on the opposite side of the road. Safe crossing points will be provided and signage. – Temporarily close the facility, with an alternative route signposted and communicated to the public.
Delay	Under COPTTM, delays caused by the TTM are generally not permitted to be greater than 5 minutes in typical traffic conditions. All practical steps shall be undertaken to minimise traffic effects caused by construction activities or TTM measures. The impact of TTM shall be considered in each SSTMP, including the calculation of the expected level of delay in order to satisfy that the impacts are understood. Where delays are deemed to be

Traffic management activity	General management strategies
	unacceptable, construction staging methodologies will be revised to reduce the duration or impact of the activity
Vehicle Environmental Controls	Dust suppression and detritus control is to be provided by the Contractor. If earth worked materials are carried onto the surrounding road network (dropped from vehicles carting materials to and from site), the Contractor shall be responsible for cleaning and repairing the road back to its original condition each evening during the earthworks period. In doing this, the Contractor shall ensure that approved TTM measures are in place to undertake this work safely and that no materials are washed or swept into any stormwater drains or natural drainage systems. The Contractor shall take all practicable measures to minimise the discharge of dust and detritus from the site. These measures shall include, but not be limited to: • Training staff and contractors on practices relating to minimising dust emissions, dust control and procedures for reporting and dealing with dust emissions if they arise; • Minimising the areas of exposed ground; • Mulching, re-grassing and/or planting of bare areas such as topsoil piles and completed batters as soon as reasonably practicable; • Using water and/or dust suppressants on all disturbed surfaces including roads when required; • Applying a speed restriction on all internal roads and not exceeding 30 km/hr at all times and erecting a sign at the entrance to the site advising of this; and • Provision of wheel cleaning facilities including hoses, brooms and shovels or maintaining a contingency of sweeper equipment on call at all times to clean up material which may have been accidently spilt onto public roads. The Contractor is to adhere to any further guidance given by the Traffic Management Co-ordinator and/or AT/Waka Kotahi in relation to dust suppression and removal of detritus material.
Private properties	Pedestrian and vehicle access will be maintained to all private properties for residents and/or stakeholders at all times, by way of using steel plates to cover any excavations, building footpaths/driveways in two halves, or by constructing a temporary route. In the situation where vehicle access is not possible suitable notice will be provided and pedestrian access will be maintained and an alternative parking location provided. There are very few properties that will have specific requirements for their current access to be blocked, however if this is required, communications will be undertaken in accordance with the Communication and Consultation Plan. Below are the key areas where a specific method is required. If changes to access are required, access plans for properties for residents and/or stakeholders are to be developed and agreed upon by the TTMWG prior to closure implementation. The process is: • Sensitive receptor plan development – Stakeholder Manager to speak with all residents affected by upcoming works to determine if special access is required (eg frequent Ambulance visits, mobility access needs) • Plan developed to maintain access to properties

Traffic management activity	General management strategies
	• Plan discussed with construction team and distributed to TTM team and emergency services. • Residents/businesses advised where and how to access site safely – this is during attended and unattended hours. Discussions with the occupants of the affected properties will take place at least 48 hours in advance to identify: • Any times of day that are better than others for the work; • Any alternative routes that can be established; and • Any need for shuttles etc. to or from transport on either side of the work area. These processes will avoid any unreasonable inconvenience to landowners and minimise disruption to private property access.
Site Staff	All staff involved in the Project will attend a Project induction prior to the commencement of work to ensure a common basis for approaching their work. The induction will include environmental, health and safety and hazard management in relation to the Project area, along with temporary traffic control. Training will include the following: • Specific training will be provided to those involved in temporary traffic management as appropriate to their role and responsibilities. • Regular toolbox talks will provide a forum to reinforce and educate Project staff around specific temporary traffic control issues and actions during the Project. • The STMS will also conduct briefings on-site prior to every TTM operation to identify hazards pertaining to the work site and controls to be implemented to protect the safety of Project staff and public.
Driver induction	The STMS is responsible to undertake a site induction with all transport operators contracted to transport materials to the site. The induction is to cover (but not be limited to): • The routes of travel to and from site; • Permissible times of deliveries; • Requirement for and use of possible communication systems; • Requirements to abide by local speed restrictions for dust and detritus management; • Requirement for courteous driving; and • Requirements to report hazards on the transport route.
Personal Protective Equipment	As a minimum, all personnel working on site must wear a day or night compliant high visibility garment. Construction workers will therefore be clearly visible, and will set a consistent high level of Personal Protective Equipment and appearance across the site.
Other permits or approvals	• Over-dimension and over-weight permits if applicable. • Approvals from road controlling authority, such as approved CAR application.

Table 7.2 of CTMP - site specific management strategies for the Project.

Site specific activity	Description of impact	Mitigation measures
CSAs 1 and 2	• Construction traffic routing	• Traffic to and from the Sarsfield Reserve CSA1 will be from Argyle Street (east of the CSA and Sarsfield Street). • Ingress to CSA2 94A and 94B Shelly Beach Road will be from the Curran Street on ramp. Egress will be onto the Curran Street on ramp and should vehicles need to travel south, then they will need to turn around at the Onewa Road interchange.
	• Site access	• All temporary accesses into the CSA's will be designed in accordance with relevant AT and Waka Kotahi design standards (including sight lines, accessway widths and gradients). • CSA2 94A and 94B Shelly Beach Road - the design of the access shall ensure it does not impact on the effective, efficient and safe operation of the Curran Street SH1 on ramp.
	• Operation	• All CSA's will be securely fenced to prevent public access. • Existing east footpath at Salisbury Reserve to be fenced off to prevent public access. Once the works are complete, the footpath will be reinstated. • Salisbury Reserve CSA1 - Traffic Management (TM) supervisor to ensure safe movement of truck ingress and egress at Argyle Street. • 94A and 94B Shelly Beach Road CSA2 - TM supervisor to ensure ingress/egress does not impact on the effective, efficient and safe operation of the Curran Street SH1 on ramp. This could involve temporary traffic management to make drivers aware of the CSA ingress and egress (e.g., through warning signs, lane narrowing and potentially a temporary reduction in the existing 80 km/h speed limit). To minimise impacts of the CSA vehicle movements in the peak periods, it is proposed that ingress and egress to the site will only be permitted outside of the weekday AM peak (0700-0900) and PM peak (1600-1800) periods. Construction vehicles will exit the site to the north on to SH1 beyond the existing on ramp signals. To ensure trucks and other vehicles are exiting the site safely, the Site Traffic Management Supervisor (STMS) will ensure a vehicle can leave safely and is not conflicting with general traffic. • Wheel wash facilities to be set up at the exit points of the CSA 1 and 2.
Satellite Sites	• Construction traffic routing	• Traffic to and from the Satellite Sites will be from Sarsfield Street, Argyle Street, Herne Bay Road, Upton Street or Marine Parade only.

Site specific activity	Description of impact	Mitigation measures
	• Pedestrians and cyclists	• For all satellite sites where works impact on existing footpaths, temporary footpaths shall be provided that meet mobility impaired standards, where practicable. Where footpaths are closed, fencing will be used to prevent access to any closed off sections of the footpath and diversion signs will be provided. These temporary measures should be safe, clearly identifiable and seek to minimise significant detour. • Signage should be provided on the section of Argyle Street and Sarsfield Street (from the Salisbury Reserve to the Curran Street shared path) to advise cyclists using this AT designated quiet road cycle route, of alternative routes when there are road closures.
	• Residents access	• Where required, design and provide temporary accessways and vehicle crossings to residential properties (for instance on road berms/footpaths) and site fencing to ensure residents have 24 hour access to their homes.
	• Management of construction traffic	• Site Traffic Management Supervisor will safely manage the movements of construction traffic to and from the road network to ensure the safety of all road users is maintained and that construction vehicles can negotiate access and egress to avoid any additional queueing on the adjacent road network in the peak periods on Collectors, Arterials and SH1. • Site Traffic Management Supervisor will co-ordinate (for example via radio control) trucks accessing the Satellite sites to ensure that construction vehicles arriving and departing the sites can do safely and that a suitable truck layover area is provided within the Salisbury Reserve CSA1 where required, for example for delivery trucks. • At each Satellite site, as activities change and the type of plant is replaced, the traffic management will be revised accordingly to ensure traffic disruptions are minimised and to allow the safe movement of vehicles and people. When the works are complete traffic management and site fencing will be removed. • The CTMP will implement a construction driver education programme given the close proximity to residential properties and pedestrians. • Where raised platforms are removed they will be reinstated to a design standard agreed with AT. • For raised platforms not removed, but where construction traffic passes over these, should any damage occur as a result of the construction vehicles, then remedial works will be carried out by the Contractor. • All final reinstatement and remedial works will be carried out at the completion of the project to ensure no damage to any of the reinstated works occurs.

Site specific activity	Description of impact	Mitigation measures
		• Movements of specialised machinery or large components (e.g., cranes and the TBM removal) will not occur on a day to day basis. Separate to the Resource Consent application, bespoke SSTMPs and CAR's will be developed once exact details of the machinery and vehicles required is known, as they have successfully been carried out for other key waste water projects. Agreement with AT and (where relevant) Waka Kotahi will be required and over-dimension rules and associated permitting processes will need to be complied with.
	• Communications	• Communication campaigns should be undertaken in relation to traffic management activities throughout construction activities (including letter drops to affected residents, flier drops, project signage, web based resources, etc.). • Appropriate temporary traffic management measures should be incorporated by AT to advise other road users of the construction traffic.
Emmett Street for Shaft 1 Sarsfield Street temporary closure	• Temporary closure	• Vehicle tracking of the Project and Point Erin CI construction vehicles will need to be carried out and any temporary physical works improvements at the Emmett Street intersections with Shelly Beach Road and Curran Street will need to be identified and implemented prior to the temporary closure taking effect. This could include temporary removal of on street parking on Curran Street and Shelly Beach Road to assist vehicles turning at the intersections and to provide improved sight lines. • Given the narrow width of Emmett Street, to accommodate this level of traffic, temporary removal of on street parking is recommended along the whole length of Emmett Street. • Temporary 30 km/h speed limit is implemented to reduce vehicle speeds and hence injury severity in the event of an accident. • Continuous communications with residents on Emmett Street will be essential to rapidly address any traffic issues should they arise. • Clear signing of the diversion routes and in particular, of the existing right turn ban from Emmett Street to Shelly Beach Road and the need to use Tweed Street for this manoeuvre.
Curran Street (between Emmett Street and Sarsfield Street) for Shaft 1	• Temporary closure	• Vehicle tracking of the Project and Point Erin CI construction vehicles will need to be carried out and any temporary physical works improvements at the Sarsfield Street/Curran Street intersection will need to be identified and implemented prior to the temporary closure taking effect.

Site specific activity	Description of impact	Mitigation measures
Sarsfield Street temporary closure		• To accommodate this level of traffic, temporary removal of on street parking is recommended along the whole length of Curran Street between Emmett Street and Sarsfield Street. • Temporary 30 km/h speed limit is implemented to reduce vehicle speeds and hence injury severity in the event of an accident. • Work with the school to establish whether any temporary crossing patrols are required to assist pedestrians crossing Curran Street. • Provisions for restricting movements of construction traffic during peak school drop-off and pick-up times (as subsequently advised by MoE this period would be 0805-0850 and 1500 and 1530). • Continuous communications with residents on Curran Street and the Primary School will be essential to rapidly address any traffic issues should they arise. • Clear signing of the diversion routes.
Standard TTM design criteria	• Design criteria for Local Roads	• Minimum Speed limit = 30 km/h • Minimum lane width = 3 m • Temporary barrier systems in place where possible • Minimum footpath width = 1.2m