



If calling, please ask for Democratic Services

Council

Thursday 24 December 2021, 9.30am

Remotely, via Microsoft Teams

Members

Cr Ponter (Chair)

Cr Staples (Deputy Chair)

Cr Blakeley

Cr Brash

Cr Connelly

Cr Gaylor

Cr Hughes

Cr Kirk-Burnnand

Cr Laban

Cr Lamason

Cr Lee

Cr Nash

Cr van Lier

Recommendations in reports are not to be construed as Council policy until adopted by Council

Council

Thursday 24 February 2022, 9.30am

Remotely, via Microsoft Teams

Public Business

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3.	Public Participation		
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Resolution to Exclude the Public

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Public Excluded Business

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Please note these minutes remain unconfirmed until the Council meeting on 24 February 2022.

Report 21.596

Public minutes of the Council meeting on 16 December 2021

All members participating remotely at 9.30am.

Members Present

Councillor Ponter (Chair)
Councillor Staples (Deputy Chair)
Councillor Blakeley
Councillor Brash
Councillor Connelly
Councillor Hughes
Councillor Kirk-Burnnand
Councillor Laban
Councillor Lamason
Councillor Lee
Councillor Nash
Councillor van Lier

All members participated at this meeting remotely, and counted for the purpose of quorum, as per clause 25B of Schedule 7 to the Local Government Act 2002.

Karakia timatanga

The Council Chair opened the meeting with a karakia timatanga.

Public Business

1 Apologies

Moved: Cr Staples / Cr Lamason

That the Council accepts the apology for absence from Councillor Gaylor.

The motion was **carried**.

2 Declarations of conflicts of interest

There were no declarations of conflicts of interest.

3 Public participation

There was no public participation.

4 Confirmation of the Public minutes of the Council meeting of 9 December 2021 - Report 22.6

Moved: Cr Lamason / Cr Kirk-Burnnand

That the Council confirms the Public minutes of the Council meeting of 9 December 2021 – Report 22.6

The motion was **carried**.

Governance

5 Adoption of the 2020/21 Annual Report – Report 21.574

Nigel Corry, Chief Executive, advised that he was withdrawing the report from the agenda, and that an updated report would be submitted for consideration at the Extraordinary Council meeting on 21 December 2021.

6 Resolution to exclude the public – Report 21.594

Moved: Cr van Lier / Cr Hughes

That the Council excludes the public from the following parts of the proceedings of this meeting, namely:

Kaitoke Flume Bridge Seismic Upgrade Project – Budget Approval – PE21.590

The general subject of each matter to be considered while the public is excluded, the reasons for passing this resolution in relation to each matter, and the specific ground/s under section 48)1 of the Local Government Official Information and Meetings Act 1987 (the Act) for the passing of this resolution are as follows:

Kaitoke Flume Bridge Seismic Upgrade Project – PE21.590	
<i>Reason/s for passing this resolution in relation to each matter</i>	<i>Ground/s under section 48(1) for the passing of this resolution</i>
Certain information contained in this report relates to the award of a contract for the delivery of the Kaitoke Flume Bridge seismic upgrade project and information relevant to the pricing of	The public conduct of this part of the meeting is excluded as per section 7(2)(b)(ii) as the making available of the information would be likely unreasonably to prejudice the

<p>the contract. Release of this information would be likely unreasonably to prejudice the commercial position of Wellington Water Limited.</p> <p>Greater Wellington has not been able to identify a public interest favouring disclosure of this particular information in public proceedings of the meeting that would override the need to withhold the information.</p>	<p>commercial position of the person who supplied or is the subject of the information.</p>
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This resolution is made in reliance on section 48(1)(a) of the Act and the particular interest or interests protected by section 6 or section 7 of that Act or section 6 or section 7 or section 9 of the Official Information Act 1982, as the case may require, which would be prejudiced by the holding of the whole or the relevant part of the proceedings of the meeting in public.

The motion was **carried**.

The public part of the meeting closed at 9.35am.

Councillor D Ponter

Chair

Date:



Please note these minutes remain unconfirmed until the Council meeting on 24 February 2022.

Report 21.601

Public minutes of the Emergency Council meeting on Thursday 23 December 2021

All members participating remotely at 3.30pm.

Members Present

Councillor Ponter (Chair)
Councillor Staples (Deputy Chair)
Councillor Blakeley
Councillor Brash (from 3.34pm)
Councillor Connelly
Councillor Hughes
Councillor Kirk-Burnnand
Councillor Laban
Councillor Lee (from 3.35pm)
Councillor Nash

All members participated at this meeting remotely, and counted for the purpose of quorum, as per clause 25B of Schedule 7 to the Local Government Act 2002.

Karakia timatanga

The Council Chair opened the meeting with a karakia timatanga.

Public Business

1 Apologies

Moved: Cr Hughes / Cr Kirk-Burnnand

That the Council accepts the apology for absence from Councillors Gaylor, Lamason and van Lier.

The motion was **carried**.

2 Declarations of conflicts of interest

There were no declarations of conflicts of interest.

3 Public participation

There was no public participation.

Governance

4 Greater Wellington Regional Council's 2020/21 Annual Report – Report 21.574

Zofia Miliszewska, Team Leader, Corporate Planning and Reporting, Alison Trustrum-Rainey, Chief Financial Officer, and Clint Ramoo, Audit Director, Audit New Zealand, spoke to the report. The final Annual Report and Summary (Attachments 1 and 2) were tabled.

Mr Ramoo advised that Audit New Zealand would be issuing a qualified audit report, noting Inland Revenue's binding decision on CentrePort Limited's tax position. Officers commented that advice of the Inland Revenue ruling was received by Council on Monday 20 December, leaving insufficient time to make changes to the Annual Report and also meet the statutory deadline to adopt the Annual Report by 31 December 2021.

Moved: Cr Kirk-Burnnand / Cr Hughes

That Council:

- 1 Adopts Greater Wellington Regional Council's Annual Report (Attachment 1) and the Summary of the Annual Report (Attachment 2) for the year ended 30 June 2021.
- 2 Authorises the Chief Executive to make minor changes that may arise as part of finalising the audited Annual Report and Summary of the Annual Report for the year ended 30 June 2021.

The motion was **carried**.

Councillor Brash joined the meeting at 3.34pm during the above item.

Councillor Lee joined the meeting at 3.35pm, during the above item.

Karakia whakamutunga

The Council Chair closed the meeting with a karakia whakamutunga.

The public meeting closed at 4pm.

Councillor D Ponter

Chair

Date:

Council
24 February 2022
Report 21.606



For Decision

LET'S GET WELLINGTON MOVING – THORNDON QUAY HUTT ROAD SINGLE STAGE BUSINESS CASE

Te take mō te pūrongo

Purpose

1. To advise Council on the Let's Get Wellington Moving – Thorndon Quay Hutt Road Single Stage Business Case.

He tūtohu

Recommendations

That Council:

1. **Approves** the Let's Get Wellington Moving – Thorndon Quay Hutt Road Single Stage Business Case provided in Attachment 1 to this report.
2. **Notes** that Greater Wellington is not required to contribute funding to undertake the work in the next phase (pre-implementation) under the current Let's Get Wellington Moving Relationship and Funding Agreement.
3. **Notes** upgrades to bus stop infrastructure is currently excluded from project scope and cost estimates; any upgrade opportunities identified during the detailed design phase will be funded through either existing Metlink bus infrastructure budgets or provided for in the annual plan.
4. **Notes** that the business case has been developed with involvement from Greater Wellington officers and has been subject to the Waka Kotahi NZ Transport Agency investment quality assurance process and an independent technical peer review process.

Summary

2. This report asks Council to approve the Let's Get Wellington Moving (LGWM) – Thorndon Quay Hutt Road, Single Stage Business Case (SSBC) provided in Attachment 1 to this report. Approval from all three LGWM partners is required before moving to the next stage.
3. The Thorndon Quay Hutt Road (TQHR) project, whilst primarily concerned with Thorndon Quay and Hutt Road, includes work in three main areas that are covered in the SSBC, all at different stages of development. These areas are:
 - a. The Thorndon Quay and Hutt Road corridor

- b The 'Connection' between Hutt Road and Te Ara Tupua (Petone to Ngauranga) shared path
 - c Aotea Quay intersections
4. The TQHR corridor is strategically important within the Wellington transport network, providing a key connection and gateway to the central city from the north. It is the busiest bus corridor outside the city centre and the busiest cycle route in Wellington, with many more cyclists expected following the opening of Te Ara Tupua. Hutt Road is also a national freight route providing the only access to the inter-island ferry terminal at Kaiwharawhara.
 5. With strong growth in Wellington's northern suburbs, travel demand along this corridor is expected to increase. Without investment, we are likely to see poor safety outcomes (particularly for people walking and cycling), slow and unreliable travel times (including for bus passengers and freight) and the aspirations to make Thorndon Quay a more attractive place to spend time won't be met.
 6. To respond to future growth and meet LGWM's vision of a great harbour city, accessible to all, with attractive places, shared streets and efficient local and regional journeys – we need to increase the capacity of the corridor for moving people (rather than vehicles) by prioritising and investing in public transport, active modes, safety and public realm improvements – and addressing alternative freight access to the ferry.
 7. This SSBC presents the case for change, including the option development and assessment process that was applied to identify a preferred option. It also presents the cost estimation and economic appraisal for this option
 8. Development of the SSBC started in early 2020. The work during this phase included the development of the strategic case, a long list of options which were refined to a short-list, public engagement on the short-list and a Multi Criteria Assessment (MCA) on those options to identify a preferred option for Thorndon Quay and Hutt Road.
 9. The preferred option (Option 4A) includes peak time bus lanes in both directions, upgrading and extending a two-way cycle path and dedicated footpath along the entire corridor, bus priority at key intersections, a raised median to prevent right turns between Aotea Quay and Ngauranga, bus stop optimisation, and other pedestrian safety and amenity improvements. The preferred option was endorsed by the LGWM Board in August 2021.
 10. In September 2021, Wellington City Council (WCC) replaced the existing angle parking with parallel parking on Thorndon Quay due to safety reasons. These parking changes are aligned with the road layout proposals in the TQHR preferred option.
 11. A high-level design for the project (preliminary design) was developed following approval of the preferred option. This design has undergone a Road Safety Audit and been used to develop the project costs.
 12. The project will deliver faster and more reliable bus journeys, improved pedestrian access and safety, encourage more cycling trips, support fewer crashes, and will improve amenity. The total benefits of the project are an estimated \$96 million (BCR 1.8) under the core modelled scenario, with a range between \$20 million and \$150 million, depending upon the level of general traffic dis-benefits under various traffic re-

routing or re-timing scenarios. The estimated cost is \$56 million (P50), with a range of \$43 million (base) to \$67 million (P95).

13. A variation to the TQHR project considered the connection between Hutt Road and Te Ara Tupua Petone to Ngauranga shared cycle and pedestrian path. Work on this variation has followed a similar process to that of the TQHR SSBC and is included in an addendum to the SSBC. Two options are recommended to be progressed for 'The Connection' until further information is obtained, and trials are completed. No approval is being sought beyond the detailed design phase for the Connection at this time. This section is expected to be fully funded by Waka Kotahi.
14. Some initial design work has been progressed regarding intersections on Aotea Quay - an important pre-requisite to the TQHR proposals by providing turnaround facilities for heavy vehicles accessing Hutt Road properties and alternative ferry terminal access for freight. This has combined requirements for both the TQHR project and the Single User Terminal (catering for the new larger ferries being purchased by KiwiRail). This has highlighted the need for improvements at two intersections on Aotea Quay. Given the benefits to both projects, KiwiRail is expected to fund the signalised intersection. The additional cost range above that included in the SSBC for the roundabout is \$2.0 million (base) to \$3.0 million (expected, P50).
15. Expected funding envelopes for TQHR (\$59 million) and the Connection (\$3.0 million) have been estimated. This does not include implementation of the Connection or any costs associated with the signalised intersection on Aotea Quay. Pre-implementation costs exceed the Waka Kotahi allowance in the 2021-24 National Land Transport Plan (NLTP) for the pre-implementation phase by a total of \$5.6m, and Waka Kotahi will need to confirm funding alongside approval of the SSBC. Implementation costs in the funding envelopes currently exceed the WCC budget (\$2.0 million shortfall) and the Waka Kotahi allowance in the 2021-24 NLTP (\$9 million shortfall). This is due to general cost escalations and updated cost estimates as the design is refined. LGWM will need to work with partners to which these shortfalls relate to prior to Workstream Funding Approval being sought.
16. The approval of the SSBC will release the remaining funding for the next stage(s) of the project, detailed design also referred to as pre-implementation. Implementation funding will also be released for Aotea Quay roundabout.
17. Subject to business case approval by partners and release of the remaining pre-implementation funding by the middle of March 2022, we expect that detailed design for Aotea Quay roundabout will be completed to enable construction to begin in late 2022 with Thorndon Quay and Hutt Road to commence in early 2023 once Aotea Quay roundabout is complete.
18. Integration with all adjacent projects will continue, including discussions with KiwiRail regarding possible funding arrangement for improvements on Aotea Quay.

Te tāhū kōrero

Background

19. LGWM is a joint initiative between WCC, Greater Wellington Regional Council (GWRC), and Waka Kotahi together with mana whenua partners Taranaki Whānui ki Te Upoko o Te Ika and Ngāti Toa.
20. The focus of the LGWM programme is from Ngauranga Gorge to Miramar including the central city, the state highway, access to the port, and connections to Wellington Hospital and the airport. A number of core multi-modal corridors connecting the central city with suburbs to the north, south, east, and west are also covered by parts of the programme. This area has an important role for both local and regional journeys.
21. A draft LGWM programme business case was completed in 2018, which identified a Recommended Programme of Investment (RPI).
22. Discussions with central government about funding, financing, and staging led to the announcement of an Indicative Package (IP) with central government funding in May 2019.
23. On 26 June 2019, Council endorsed the LGWM long term vision and RPI, welcomed the government funding announcement as part of the IP, and agreed to move to the next stage of investigations (Report 19.258 – LGWM programme endorsement, funding and next steps). WCC similarly endorsed the LGWM vision in June and the Waka Kotahi Board subsequently endorsed the programme's next steps.
24. In December 2019, Council agreed the funding and partnering approach for the next phase (Report 19.485 – Funding and partnering for the next phase of LGWM). WCC and Waka Kotahi similarly endorsed the funding and partner agreement.
25. Since then, the next business case stages for the various packages have been significantly progressed. These include a draft Indicative Business Case for the Mass Rapid Transit (MRT) and Strategic Highway Improvements (SHI) elements, and a programme of early delivery projects to public transport, active modes, safety and amenity, with a strong focus on the central city and effective and efficient connections between the central city and key sub-urban centres
26. The TQHR project is one of the early delivery projects within the LGWM Three Year Programme and will contribute to LGWM's overarching vision of a great harbour city, accessible to all, with attractive places, shared streets and efficient local and regional journeys. It will improve safety, comfort and amenity for people who live and work on Thorndon Quay; will have significant benefits for people travelling to, through, and along the corridor on foot, by bike and by bus.

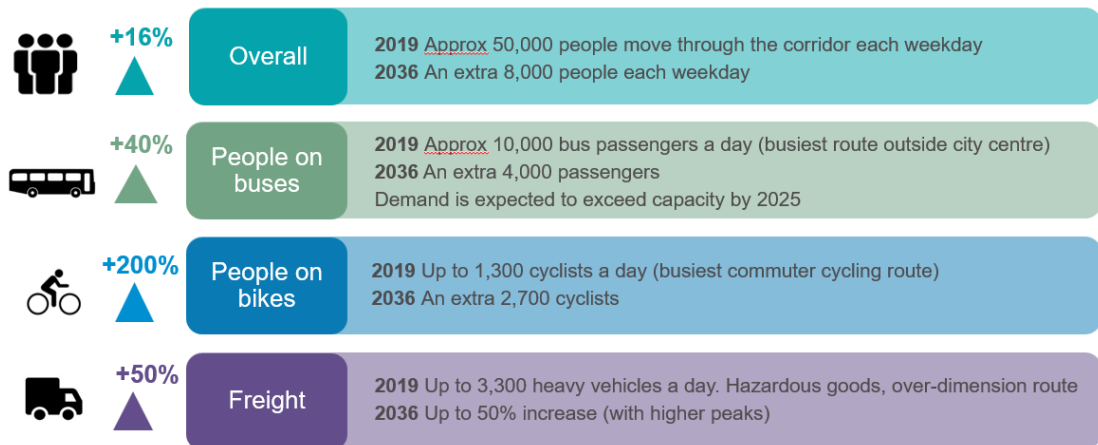
Te tātaritanga

Analysis

Strategic Case

27. The TQHR project aligns with LGWM's overarching vision of a great harbour city, accessible to all, with attractive places, shared streets and efficient local and regional journeys.

28. Thorndon Quay is the busiest bus corridor outside the city centre and the busiest cycle route in Wellington. TQHR provides a connection between the new Te Ara Tupua shared path and Wellington City, with significantly more cycle trips expected between the regions two largest cities. Hutt Road provides the only access to the ferry terminal at Kaiwharawhara, a national freight route.
29. The population of Wellington City is forecast to grow, with the northern suburbs expected to increase by over 20 percent (11,000 people)¹. Over 40 percent of the current 235,000 jobs in the Wellington Region are in the central city. The high concentration of employment in the central city attracts commuters from the wider Wellington Region placing pressure on the transport system especially for travel to and from the north of the city. Future travel demand by all modes along this corridor is projected to increase as set out in Section 2.3.3 of the SSBC (refer **Attachment 1**) and summarised below.



30. This predicted growth and ferry connection are important context to the investment objectives identified for the project.
31. The investment objectives that this project is seeking to achieve are to:



32. Table 4-3 in the SSBC (refer to **Attachment 1**) shows the alignment between the Thorndon Quay Hutt Road project and LGWM objectives.
33. The LGWM Programme Steering Group approved the strategic case and investment objectives in October 2020.

¹ Based on ID³ projections (developed November 2019) <https://forecast.idnz.co.nz/wellington>

Options - Thorndon Quay Hutt Road

34. The process used to develop the short-listed and preferred options is shown below.



35. The problems, benefits, and investment objectives, as well as assessment of evidence and feedback from previous stakeholder engagement, was used to develop an initial list of potential interventions such as bus lanes, cycleway options, improvements to intersections and pedestrian crossings. These interventions were reviewed against the investment objectives and some elements were rejected if they did not contribute towards achieving these. The remaining elements were packaged into a long list of options.

36. The long list of options was assessed using a high level multi criteria assessment process to assess and compare options against a range of objectives and criteria, to arrive at four options for short list assessment. A safety assessment identified that the provision of a bus lane or Special Vehicle Lane² on Hutt Road added additional risks when considering the traffic turning into and out of properties along the road. To mitigate this risk, options that included a central median and a service lane sub-option were developed. The options also included a new roundabout on Aotea Quay to provide a turnaround facility for trucks which may be impacted by the provision of a central median or service lane.

37. The short list options and sub-options are summarised below:

² Priority lane for buses and freight

Option	Elements Thorndon Quay bus lanes	Thorndon Quay cycle paths	Hutt Road bus lanes	Common elements
1	Southbound	Bi-directional	Southbound	Speed limit review Intersection upgrades
2	Both directions	Uni-directional	Both directions	Pedestrian crossing improvements
3	Southbound	Uni-directional	Southbound	Bus stop rebalancing Thorndon Quay amenity
4	Both directions	Bi-directional	Both directions	Hutt Road Safety Audit recommendations
Sub-options:				
A: Addition of roundabout / turning facility on Aotea Quay				
B: Addition of service lane on Hutt Road				

38. The key differences between the short-listed options were:
- Whether bus lanes should be into the city or both into and out of the city
 - Whether the cycle path on Thorndon Quay should be bi-directional (i.e. a facility on one side of the road providing for cyclists travelling in both directions) or uni-directional (i.e. a facility on both sides of the road, each providing for cyclists traveling in one direction)
 - Whether there should be a roundabout on Aotea Quay
 - Whether Hutt Road should have a flush median, raised median or separate service lane.
39. A multi criteria assessment was completed for the short list to inform the selection of a preferred option. The main considerations in the assessment were the extent to which the option met the project investment objectives, the effects of the option, and its delivery cost/timescale/operations implications.
40. The evaluation of the short list options is shown in Tables 4 and 5 of the Alternatives and Options Report (refer Appendix H of the SSBC). Options 4A and 4B (with northbound and southbound peak bus lanes, bi-directional cycleway on Thorndon Quay and a raised median (A) or service lane (B) on Hutt Road) scored equally highest with strong alignment to the investment objectives. While these options scored similarly overall, the provision of a service lane (sub-option B) was discounted as being more disruptive and carrying larger implementation risk.
41. The short-listed options were packaged together for public engagement as the emerging proposals. These proposals included all the decision elements of the short-listed options for both Thorndon Quay and Hutt Road. Public engagement was undertaken between 11 May and 8 June 2021.
42. Overall, the engagement was well received, and the feedback was supportive of the proposals. No additional options emerged from the process which had not been considered before. However, many business owners and people that worked in the area responded that the changes would have a negative impact. Some local businesses and retailers along the Thorndon Quay did not support any change to the status quo (angle

parking) primarily due to their concern that any changes that remove parking will be detrimental to their business. Some Hutt Road businesses were concerned with access to their properties. The project team will work proactively with business owners, stakeholders, and the community to address concerns where possible through the next detailed design phase.

43. Following stakeholder and public engagement, a second multi criteria assessment workshop was held on 30 June 2021. The purpose of this workshop was to consider the impact of engagement feedback on the interim assessment scores, update scores based on any further information, as well as to incorporate the mana whenua values assessment into the assessment framework. Option 4A was subsequently confirmed as the preferred option.
44. The key reasons for Option 4A being recommended as preferred is its strong alignment with the investment objectives including:
 - a Bus lanes in both directions will improve bus travel times and reliability during peak hours, making buses a more attractive travel option and will allow for future growth and mode shift. Proposed bus priority measures will also make it more efficient for buses to access the Lambton Bus Interchange and will improve travel times through the Ngauranga/Jardin Mile intersection – a major pinch point for bus services to the city from Wellington's northern suburbs during the morning peak.
 - b A bi-directional cycle path on one side of TQHR will provide a consistent experience and level of service for expected growth in cyclists along the length of the corridor, including those connecting from Te Ara Tupua (Wellington to Hutt Valley) shared path to the north, and will provide safer passing opportunities for cyclists traveling at different speeds.
 - c A raised central median to prevent right turns along the section of Hutt Road between Aotea Quay and Ngauranga will significantly reduce the safety risk associated with these movements, particularly for people walking, cycling and on motorbikes.
 - d Changes proposed under this option will encourage more people to walk, shop and spend time on Thorndon Quay.
 - e Safety will be improved for everyone by removing the angle parking, providing a dedicated cycle path and improving pedestrian crossings.
45. The preferred option was approved by the LGWM Board in August 2021.

Preliminary design - Thorndon Quay Hutt Road

46. A preliminary design of the preferred option was undertaken to estimate likely costs and benefits; investigate linkages/dependencies with other projects; understand high level utilities interaction and identify and assess project risks for further investigation into the next phase of detailed design. The proposed road layout and associated high level plans are included in the SSBC and these will be further refined and developed in the next stage.

47. To guide the design of the preferred option, the project team has developed a Design Philosophy Statement that sets out standards, guidelines and assumptions to guide the design of the preferred option (refer Appendix J of the SSBC).
48. Mana Whenua has provided a set of draft cultural design values (refer Appendix J - section 2.2) to help guide the design in the next phase of the project. These are:
- Whakapapa - A sense of Place
 - Wai-ora - Respect the Role of Water
 - Pūngao-ora – Energy
 - Hau-ora – Optimising Health & Wellbeing
 - Whakamahitanga - Use of Materials
 - Manaakitanga – Support a Just and Equitable Society
 - Whakāhuatanga - Celebrate Beauty in Design
 - Whakamatautautanga - monitoring
49. The key design features of the preferred option are:
- a Peak period³ bus lanes in both directions on Thorndon Quay and extending the two-way cycle path from Hutt Road to the Lambton interchange at Mulgrave Street. Bus priority will be provided at Mulgrave Street. The footpaths and street environment will be improved to make it a more pleasant place to visit.
 - b Peak period bus lanes in both directions on Hutt Road and bus priority at the Ngauranga/Jarden Mile intersection.
 - c The shared path between the Ngauranga/Jarden Mile intersection and Caltex will be upgraded to a two-way cycle path and dedicated footpath. The new paths will connect with the existing paths on Hutt Road and the bike path will connect with the proposed new cycle path on Thorndon Quay.
 - d A raised central median between intersections is proposed to prevent right turns along this section of Hutt Road.
 - e A roundabout on Aotea Quay will provide drivers of large vehicles intending to travel north from a business on Hutt Road a safe place to turn and an alternative route (via State Highway 1) access to the ferry terminal at Kaiwharawhara.
50. Indicative cross sections for both Hutt Road and Thorndon Quay are provided as Figure 5-21 and 5-22 in the SSBC.
51. The next design phase will further develop the Design Philosophy Statement and refine the design in collaboration with programme partners (including mana whenua), public and key stakeholders.

³ It is expected that bus lanes will initially operate at peak times, in the peak direction - however this will be confirmed during the next phase.

'The Connection' between Thorndon Quay Hutt Road corridor and Te Ara Tupua shared path

52. A variation was made to the TQHR project to look at the connection between the northern end of Hutt Road and Te Ara Tupua (Petone to Ngauranga) shared path. There is an existing shared path in this location (approx. 400m long) however it is not of the same width and standard of the proposed works of the projects on both sides. The current state of this shared path limits its attractiveness and may constrain future active mode uptake due to potential conflicts between users walking, cycling, travelling at different speeds, accessing the stock effluent facility, bus stop, Ngā Ūranga station, and KiwiRail yards
53. The work on this connection has been included as an addendum to the SSBC. This work followed a similar process to the main SSBC with specific objectives identified consistent with both the TQHR project objectives and those of the Te Ara Tupua project.
54. Feedback from cycle groups was sought as input to a multi criteria assessment that was completed with officers from the LGWM partners including mana whenua, KiwiRail and the representatives from the Te Ara Tupua project.
55. Five options with three sub-options options were identified and evaluated. Four were discounted due to impacts on KiwiRail operations. It is therefore proposed to proceed with investigating two options in parallel:
 - a converting the Hutt Road off-ramp slip lane from State Highway 2 at Ngauranga to provide additional width for the shared path and safety barrier. The existing exit from both the stock effluent disposal facility, and the KiwiRail laydown area would be consolidated into a single exit.
 - b providing a new underpass under State Highway 2 in the vicinity of the existing off-ramp for a separate shared path
56. These options scored positively against the do-minimum, providing an improved connection between Hutt Road and Te Ara Tupua.
57. It is proposed to take both options forward whilst further work is undertaken to determine whether there are fatal flaws with the first option. Localised transport modelling suggests that the first option should be acceptable in terms of queue lengths on SH2 southbound, however this does not take account of wider network changes such as the Transmission Gully motorway opening and the changes to Aotea Quay. Further modelling will be undertaken, and a trial is also recommended, once Transmission Gully is open and post-COVID restrictions when general traffic is near 'normal'. This trial will be a temporary installation that can be installed and removed overnight and will not preclude any other works progressing.
58. The second option will require significant structural and constructability work to be undertaken and would take considerably longer to design and construct. It is therefore recommended to continue this in parallel with the first option to maximise time prior to Te Ara Tupua opening to work through the design, construction methodology and construction if required.
59. This approach has been endorsed by LGWM Programme Leadership Team and Programme Director.

60. Given funding constraints, it is proposed that only the detailed design phase for this section will be progressed at this time. This will result in a confirmed option and associated design which could then be implemented when funding is available. The Connection is expected to be fully funded by Waka Kotahi.

Aotea Quay intersections

61. The LGWM programme received advance funding to progress some detailed design work for Aotea Quay intersections ahead of approval of the full Single Stage Business Case. This advance work has focussed on changes to Aotea Quay for the following reasons:
- a A turning facility for large trucks will be required prior to the installation of a raised median on Hutt Road. This construction cannot occur in parallel with work on Hutt Road and Thorndon Quay without causing significant disruption to the city.
 - b KiwiRail are progressing work to allow for new, larger ferries at Kaiwharawhara and the two projects need to be aligned.
62. Whilst a design was proposed for the roundabout on Aotea Quay as part of the TQHR project, functionality and design assessments were completed with project partners, KiwiRail and CentrePort considering the needs of both projects. This assessment concluded that the intersection at the exit to the ferry terminal should be improved and the roundabout on Aotea Quay should be larger.
63. LGWM is working with KiwiRail to determine funding arrangements for these two improvements on Aotea Quay. In the interim, funding is only being sought for the larger roundabout.

Preferred option costs

64. An initial cost estimate for the project was provided based on generic cross-sections on Thorndon Quay and Hutt Road and an existing Wellington City Council roundabout design for Aotea Quay. The cost estimate for the project has been updated following the preliminary design.
65. The table below sets out the expected cost estimate for the preferred option for Thorndon Quay and Hutt Road:

Cost source	Estimate (\$millions)
Pre-Implementation (Design) Phase	
<i>Main consultancy / contract including comms and engagement</i>	\$4.3
<i>Internally managed costs (reviews, audits, advertising, cultural assessment, ad-hoc fees, trials, early contractor involvement)</i>	\$2.5
Implementation (Construction) Phase	
<i>MSQA consultancy supervision</i>	\$2.5
<i>Internally managed costs (consent monitoring fee, audits, reviews, advertising costs, bonus allowance for contractor)</i>	\$2.8

<i>Physical works</i>	\$29.7
<i>Property</i>	\$1.3
Total Project Base Cost	\$43.1
Project Contingency (30%)	\$12.8
Total Expected Project Cost (P50)	\$55.8

66. This includes:
- a an allowance of \$6 million for urban design and landscaping,
 - b extra-ordinary pre-implementation managed costs for trials around vulnerable users and an allowance for early involvement of a contractor, and
 - c extra-ordinary construction phase managed costs for a bonus payment for the physical works contractor for meeting broader social outcomes targets.
67. The cost estimate for the second (more expensive) option for the Connection is:

Cost source	Estimate (\$millions)
Single Stage Business Case Phase	
<i>Main consultancy / contract and internally managed costs (reviews, audits)</i>	\$0.2
Pre-Implementation (Design) Phase	
<i>Main consultancy / contract including comms and engagement</i>	\$0.9
<i>Internally managed costs (reviews, audits, advertising, cultural assessment, ad-hoc fees, trials, early contractor involvement)</i>	\$0.7
Total Project Base Cost	\$1.8
Project Contingency	\$0.8
Total Expected Project Cost (P50)	\$2.6

68. Given funding constraints, the LGWM Board has only endorsed proceeding to detailed design for the Connection. The estimated implementation cost is \$12m (P50), with a range of \$7m (base) to \$22m (P95) (refer to Connection Addendum, Appendix A of Attachment 1). This has not been included within the expected funding envelope.
69. The cost estimate for the work on Aotea Quay roundabout is:





Cost source	Estimate (\$millions)
Pre-Implementation (Design) Phase	
<i>Main consultancy / contract including comms and engagement</i>	\$0.6
<i>Internally managed costs (reviews, audits, advertising, cultural assessment, ad-hoc fees, trials, early contractor involvement)</i>	\$0.4
Implementation (Construction) Phase	
<i>MSQA consultancy supervision</i>	\$0.4

<i>Internally managed costs (consent monitoring fee, audits, reviews, advertising costs, bonus allowance for contractor)</i>	\$0.4
<i>Physical works</i>	\$4.2
<i>Property</i>	\$1.1
Total Project Base Cost	\$6.9
Project Contingency (30%)	\$3.2
Total Expected Project Cost (P50)	\$9.0

70. The estimated signalised intersection cost is \$6m (P50), with a range of \$4m (base) to \$9m (P95). This has not been included within the expected funding envelope.

Preferred options economics

71. A breakdown of the benefits associated with delivering the Thorndon Quay Hutt Road preferred option is provided below.

Objective	Benefit Stream	Estimated benefits (based on 40-year evaluation period) (rounded)	Explanation
	Bus travel time savings	\$20-21 million	Bus travel times along the corridor of 7 minutes compared to general traffic time of 9 minutes in the AM peak period. Bus travel time savings of 8 minutes compared with a future do-minimum scenario.
	Bus reliability benefits	\$9 million	Based on an estimated 30 second reduction in average late time for southbound buses in the AM peak period
	Cyclists' health benefits	\$72 million	Based on an estimated 450 new cycle trips per day (plus a 50% increase in existing cycle demand due to the Ngā Ūranga ki Pito-One Shared Path Project)
	Crash cost savings	\$6 million	Crash numbers estimated to be reduced due to both the linear treatments (e.g. changing angled parking to parallel parking, raised median, etc.) and point treatments (e.g. raised safety platforms) proposed
	Pedestrian amenity benefits	\$2 million	A 3% growth in pedestrian demand was assumed to 2036 (tapering off after 2036 to 2046). A 3km/h reduction in average speed along the corridor was also assumed.

72. Bus travel time savings of around eight minutes associated with the dedicated peak bus lanes and priority measures under the preferred option are conservative and there are several other elements that will make travelling by bus a more attractive option. Bus stop locations along the corridor will be relocated and optimised to better balance access and travel time. Improved bus stop design will mean shorter dwell times at stops. New pedestrian crossings facilities and bus stop locations will enhance access and interchange for passengers (including at Ngauranga/Jarden Mile interchange and adjacent Aotea Quay for ferry passengers). These elements will all contribute to increased public transport benefits and mode shift.
73. There are also expected to be dis-benefits to general traffic due to the introduction of bus lanes and reduction in general traffic capacity as part of the preferred option. The extent of rerouting on factors such as the level of congestion, location of destination in the CBD and user preferences, therefore two scenarios have been assessed to understand the range of potential impacts:
 - a Top end (Core modelled scenario) – a modelled level of diversion from TQHR to SH1 and alternative routes; people travel at the same time, but some choose a different route to avoid congestion on TQHR
 - b Bottom end – no diversion from TQHR to SH1 and alternative routes; people travel at the same time and continue to take the route they currently use (Hutt Rd)
74. This analysis suggests a range of dis-benefits between -\$90 million (Bottom end) and -\$13 million (Top end) and an associated overall BCR between 0.4 and 1.8.
75. It should be noted that a 90 second increase in state highway travel time under the core scenario, in the context of an average morning peak commuter car trip between Johnsonville and the CBD taking 20 to 25 minutes with significant variability from one day to the next, would be unlikely to be perceived by the average road user.
76. Further analysis was completed to consider the effect of people who drive re-timing their trip to travel earlier or later in response to the reduced traffic capacity. This scenario assumed that there are no economic disbenefits associated with trip re-timing due to flexible working arrangements. This scenario would result in \$30 million general traffic benefits and a BCR of 2.7.
77. Other sensitivity testing has also been completed as shown in Table 5-9 of the SSBC. Of note are:
 - a Bus patronage. A conservative growth rate has been assumed for bus patronage of 3 percent between 2026 and 2036 and thereafter a 2 percent growth. A 20 percent change in this assumption will alter the BCR by +/- 0.1.
 - b Growth in people cycling. Approximately 450 new cycle trips per day have been assumed for the economics. A high cycle growth rate (900 additional trips per day) would increase the BCR to 4.5 whilst a low cycle growth rate (260 new cycle trips per day) would result in a BCR of 1.0.
78. In addition, the potentially for greater levels of mode shift to bus and active modes along the corridor due to wider improvements as part of the LGWM transformation programme should be acknowledged.

79. It should be noted that, with the provision of a roundabout on Aotea Quay, road freight will be able to use State Highway 1 to access both the interisland ferries and therefore Hutt Road will no longer be part of the national freight route.
80. Benefits of 'The Connection' have also been assessed. If combined with the economics for the TQHR project, this would amend the overall Benefit Cost Ratio for the central case from 1.8 to 1.6. If combined with the economics for Te Ara Tupua, the overall Te Ara Tupua Benefit Cost Ratio would remain at 1.1.

Funding and cost share arrangements

81. In accordance with the Waka Kotahi Cost Estimation Manual, the estimated cost range for the TQHR project is:

Base	Expected (P50)	95 th percentile (P95)
\$43 million	\$56 million	\$67 million

82. In accordance with the Waka Kotahi Cost Estimation Manual, the estimated cost range for 'The Connection' is:

Base	Expected (P50)	95 th percentile (P95)
\$2 million	\$3 million	\$4 million

83. This includes detailed design only. A further funding application for implementation will be progressed once detailed design is complete and funding is available.

84. In accordance with the Waka Kotahi Cost Estimation Manual, the estimated cost range for the Aotea Quay roundabout is:

Base	Expected (P50)	95 th percentile (P95)
\$7 million (\$2 million additional to TQHR only requirements)	\$9 million (\$3 million additional to TQHR only requirements)	\$11 million (\$4 million additional to TQHR only requirements)

85. This does not include any funding for the signalised intersection as this is expected to be funded by KiwiRail.
86. Expected funding envelopes for TQHR (\$59 million)⁴ and the Connection (\$3 million)⁵ have been estimated. Pre-implementation costs exceed the WFA exceeds the Waka Kotahi allowance in the 21-24 NLTP for the pre-implementation phase by a total of \$5.6 million, and Waka Kotahi will need to confirm funding alongside approval of the SSBC.
87. Implementation costs, which are subject to confirmation, in the funding envelopes currently exceed the WCC annual plan budget (\$2 million shortfall) and the Waka Kotahi allowance in the 2021-24 NLTP (\$9 million shortfall). However due to timing variances on other projects this will not exceed the total allowance for LGWM in the current NLTP

⁴ Based on TQHR and Aotea Quay roundabout at P50

⁵ Based on the Connection P50 for pre-implementation only

period. LGWM will need to work with partners prior to workstream funding agreements being sought to which these shortfalls relate to once we have greater certainty on costs.

Reviews and approvals

88. The Thorndon Quay Hutt Road SSBC and Workstream Funding Approval was endorsed by the LGWM Board on 16 February 2022.
89. Standard practice for any business case of this size within Waka Kotahi is that it undergoes an internal investment quality assurance (IQA) review. The IQA process supports this SSBC.
90. The SSBC has also been independently peer reviewed and all relevant issues have been resolved. The peer reviewer supported the SSBC document
91. The SSBC has also gone through independent transport modelling and economics peer review and their review findings support the SSBC modelling and economics.
92. The Preliminary design has also been independently safety audited and audit findings been reviewed and accepted by consultant, LGWM and WCC safety engineer.

Interdependencies

93. Representatives from adjacent projects, KiwiRail and CentrePort have been included in option assessments as appropriate.
94. Forecasted cycle numbers for TQHR are dependent upon the completion of Te Ara Tupua.

Ngā hua ahumoni

Financial implications

95. There are no direct financial implications associated with the decisions in this report. Under the current LGWM Relationship and Funding Agreement interim cost sharing arrangements, Council is not required to commit funding to the pre-implementation phase.
96. However, the project costs still contribute to the total cost of the programme and this will be considered for the final cost share agreement between three partners. Any budget changes would need to be approved by Council.

Te huritao ki te huringa o te āhuarangi

Consideration of climate change

97. The preferred option is expected to contribute to partners carbon emission reduction goals by improving public transport and active mode infrastructure and prioritising road space along the TQHR corridor for moving people. This is expected to help make the bus and active mode network more efficient, safe, attractive and encourage people to switch from their private motor vehicles to more sustainable modes of travel.
98. The preferred option strongly aligns with council's carbon reduction goals and direction set out in Regional Land Transport Plan 2021, Regional Public Transport Plan 2021 and the Regional Climate Emergency Declaration and Action Plan.

Ngā tikanga whakatau

Decision-making process

99. The matter requiring decision in this report was considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga

Significance

100. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of this matter, taking into account Council's *Significance and Engagement Policy and Greater Wellington's Decision-making Guidelines*. Officers recommend that the matters are of low significance.
101. The decisions sought through this report are an interim step as part of a longer process to plan, fund and deliver transformational improvements along Thorndon Quay and Hutt Road for people using buses, walking, and cycling as part of the wider LGWM programme. The Thorndon Quay Hutt Road SSBC (Attachment 1) is well aligned with Council's existing strategies and policies. There are no direct financial implications for Council associated with the decisions in this report.

Te whakatūtakitaki

Engagement

102. The emerging proposals (shaped from the short list options) were released for public consultation between 11 May and 8 June 2021. Wellingtonians were asked how important the changes were, if they aligned with the Let's Get Wellington Moving vision, the impacts for various modes of transport, the impacts for different users of the areas and if there was anything the proposals hadn't considered.
103. The consultation included open days at Pipitea Marae on Thorndon Quay, and Harbourside Market, Waitangi Park and at Johnsonville Market. Ongoing discussions were held with key stakeholders.
104. 1,613 submissions were received on the proposals with 72percent of the respondents saying that it was important or very important to make improvements for people walking, riding bikes and taking the bus on Thorndon Quay and Hutt Road. 62 percent of the respondents said that these changes aligned with the vision of Let's Get Wellington Moving to create 'a great harbour city, accessible to all, with attractive places, shared streets and efficient local and regional journeys
105. People that walked, used buses, bikes and e-scooters generally felt the proposed changes would have a positive impact. So did people that travel through and visit the area. People that drove cars, trucks, motorcycles, lived in the area or had a disability had a mixed response about the impact of the proposed changes. Many business owners and people that worked in the area felt that the changes would have a negative impact, primarily due to concerns about loss of parking and access changes.
106. A survey was undertaken to better understand parking demand and capacity along TQHR. This concluded that short term/shopper parking demand could be met by parking

provision in the preferred option, however long stay/commuter parking would likely be affected.

107. Several areas have been identified for more detailed consideration during the next phase to address concerns raised through feedback. These include:
 - a The impacts on commercial delivery vehicles
 - b Drop-off parking to be made available
 - c Safety for pedestrians crossing the street, especially small children
 - d Impact to businesses in a tough retail environment
 - e Optimising bus stop locations that balance access and travel time
 - f Allowing safe vehicle access into and out of properties around pedestrians and cyclists
 - g Increase the width of the bike lane
 - h Address concerns from businesses about how their customers will access their business if they cannot make a right turn
108. People were also asked what they would like to see designed into the streetscape and they responded that they would like bike parking, more greenery and other parking options if on street parking is reduced.
109. The next phase will involve working closely with business owners, stakeholders, and the community to address issues raised through the feedback to date and ensure the design approach is collaborative and works as well as possible for all users, local businesses and retailers.
110. Representatives from adjacent projects, KiwiRail and CentrePort have been included in option assessments as appropriate.

Ngā tūāoma e whai ake nei

Next steps

111. If endorsed by both WCC and GWRC, approval of the final draft business case will be sought from the Waka Kotahi Board on 2 March 2022. Approval of the SSBC and funding will allow the project to move into the next phase of design (pre-implementation). This work has been split into two sections:
 - a Aotea Quay intersections; and,
 - b Thorndon Quay and Hutt Road (including the Connection).
112. Work is underway to develop and agree contracts with new suppliers for this work. Some interim work has been undertaken on Aotea Quay as outlined above.
113. A contractor has been identified (through a joint process with the Golden Mile project) to join the design teams in the next phase. This will enable the project team to jointly design the project and ensure the construction methodology is robust to minimise disruption to businesses and travelling public. This approach will also provide opportunities for potential costs savings for project due to early identification of risks and potential for design changes to mitigate these risks.

114. The next phase will have further stakeholder and community engagement at its core to ensure the design balances the needs of all users. This engagement is expected to include trials of some elements of the design. These trials are expected to be interactively developed with the community.
115. Integration with all adjacent projects will continue, including discussions with KiwiRail regarding funding arrangements for improvements on Aotea Quay.
116. Subject to business case approval by partners and release of the remaining pre-implementation funding by the middle of March 2022, the detailed design for Aotea Quay will be completed to enable construction to begin in late 2022 with Thorndon Quay and Hutt Road to commence in early 2023 once Aotea Quay is complete.

**Ngā āpitihanga
Attachment**

Number	Title
1	<p>LGWM Thorndon Quay Hutt Road Single Stage Business Case (including Appendix A - Addendum for 'The Connection')</p> <p><i>(Note: this attachment contains the full single stage business case, including case for change, Economic Case, Financial Case, Commercial Case, and Management Case and Appendix A. The other appendices – which include the reports that have informed the business case have been circulated separately to Councillors and are available to view on the Greater Wellington's website.)</i></p>

**Ngā kaiwaitohu
Signatories**

Writers	<p>Hannah Hyde – Project Manager, Thorndon Quay Hutt Road, LGWM</p> <p>Dave Humm – LGWM Partner Lead, Greater Wellington</p>
Approver	<p>Luke Troy - General Manager, Strategy</p>

He whakarāpopoto i ngā huritaonga Summary of considerations
<p><i>Fit with Council's roles or with Committee's terms of reference</i></p> <p>A decision to endorse the LGWM Thorndon Quay Hutt Road Single Stage Business Case is an appropriate fit with Council's role. This type of decision also falls within the remit of the Transport Committee under its terms of reference, however the timing of meetings and need to align with LGWM partner decision making processes has led to the decision being sought directly by Council in this instance.</p>
<p><i>Implications for Māori</i></p> <p>LGWM has established an Iwi partnership working group and Iwi membership on the Governance Reference Group to incorporate mana whenua perspectives in the programme outcomes and support broader Iwi engagement. Iwi representatives have been involved in the Thorndon Quay Hutt Road options assessment processes and support the preferred option.</p> <p>Mana whenua have provided a set of draft cultural design values and principles to help guide the development of the project. These values, along with a heritage landscape assessment and archaeology assessment, will guide the development of the preferred option design in the next phase of the project. This design will be developed in partnership with the mana whenua working group.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>The LGWM programme is included in Council's 2021-31 Long Term Plan and the Golden Mile SSBC and preferred option is well aligned with the direction of the Wellington Regional Land Transport Plan (RLTP) 2021, Regional Public Transport Plan 2021 and the Regional Climate Emergency Declaration and Action Plan.</p>
<p><i>Internal consultation</i></p> <p>In preparing this report, consultation was undertaken with Greater Wellington officers from Strategy and Metlink Groups (along with LGWM partners) who have been involved in development of the business case.</p>
<p><i>Risks and impacts - legal / health and safety etc.</i></p> <p>No specific financial risks have been identified. Section 8.7 of the SSBC summarises the key project risks for the next phase of the project.</p> <p>Thorndon Quay Collective have asked the High Court to review WCC's previous decision to replace angle parking with parallel parking on Thorndon Quay. WCC's decision was made for safety reasons and implemented in September 2021. The Thorndon Quay Hutt Road SSBC relates to the same area, and therefore any future High Court decision may have implications for the implementation of this business case.</p> <p>The preferred option is expected to have positive impact on health and safety by encouraging people to active modes and public transport and by reducing reliance on private motor vehicles. Any construction phase related health and safety risks will be assessed, quantified and reported (with mitigation plan) once the next detail design phase is completed.</p>



14 February 2022

Thorndon Quay Hutt Road

Single Stage Business Case

Final Report

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Appendices

Appendix A

Connection to Te Ara Tupua

Appendix B

Existing Traffic Flows

Appendix C

Analysis of Bus Operating Performance

Appendix D

Safe System Framework Assessment

Appendix E

Summary of Evaluation of Corridor Treatment Long List Options

Appendix F

Summary of Evaluation of Node and Intersection Treatment Long List Options

Appendix G

Bus Stop Rationalisation

Appendix H

Alternative and Options Report

Appendix I

2021 Stakeholder and Public Engagement

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Preliminary Design Philosophy Statement

Appendix K

Modelling and Analysis Report

Appendix L

Economic Evaluation Approach and Assumptions

Appendix M

Cost Estimates

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Executive Summary

Many people live and work along Thorndon Quay and Hutt Road, and the roads form an important commuter corridor. Thorndon Quay and Hutt Road are the busiest bus corridors in Wellington, outside of Wellington city centre, carrying more than 10,000 bus passengers per day. The Thorndon Quay/Hutt Road corridor is also the busiest cycle route in the city, with up to 1,300 cyclists using the route on an average weekday.

An increasing number of people are expected to use Thorndon Quay and Hutt Road in the near future, due to the growing number of people living and working in Wellington City and in the northern suburbs.

The planned shared path, Te Ara Tupua, including the section between Ngauranga and Petone, will also enable more people to walk and cycle between Hutt Valley and Wellington CBD. Improved infrastructure on Thorndon Quay and Hutt Road will help make the shared path a success.

With the expected growth in the uptake of cycling, walking and public transport over the next 20 years, and the need to change the way we travel to reduce emissions from transport, improvements are needed along Thorndon Quay and Hutt Road urgently. These are proposed as part of the Let's Get Wellington Moving (LGWM) three-year programme.

This Single Stage Business Case (SSBC) presents the case of investment in the project.

Problems, Benefits and Investment Objectives

Building on previous consultation and studies, and evidence gathered, the following problem statements were defined.

PROBLEM ONE
Unreliable bus travel times result in a poor customer experience for existing and potential bus users which reduces the attractiveness of and ability to grow travel by bus.
PROBLEM TWO
The current state of cycling facilities results in conflict between users, increases risk and limits cycling attractiveness for increasing volumes of cyclists.
PROBLEM THREE
Poor quality of the street environment creates an unpleasant experience for a growing volume of people reducing its attractiveness to walk and spend time in the area.
PROBLEM FOUR
High and growing traffic volumes combined with high speeds increases the likelihood and severity of crashes on Hutt Road.

By addressing the problems, the following potential benefits of investing in transport improvements for the Thorndon Quay and Hutt Road corridor were identified:



Improve the reliability and attractiveness of bus travel



Improve the quality and safety of walking and cycling facilities



Reduce frequency and severity of crashes along Hutt Road



Improve the place quality of Thorndon Quay



Maintain access for freight and the ferry terminal

Five investment objectives have been identified for the project which build on the identified problems and benefits for the corridor:

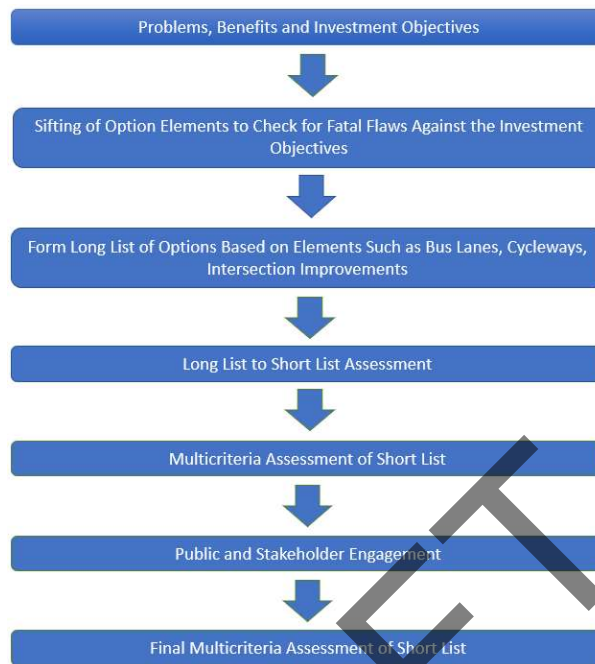
- i Improve Level of Service for bus users including improved access, journey times and reliability. Provide sufficient capacity for growth in public transport
- ii Improve Level of Service and reduce the safety risk, for people walking and cycling along and across Thorndon Quay and Hutt Road
- iii Reduce the frequency and severity of crashes
- iv Improve the amenity of Thorndon Quay to support the current and future place aspirations for the corridor/area¹
- v Maintain similar access for people and freight to the ferry terminal.

The latter objective was defined in response to concerns about the adverse effect bus lanes may have on freight traffic on Hutt Road.

Options Development and Assessment Process

The Thorndon Quay and Hutt Road project used a multi-stage process to develop and assess options. This process is summarised below.

¹ Whilst the focus of the investment objective is on Thorndon Quay, there are expected to be several locations along Hutt Road that will benefit from amenity improvements through implementation of the preferred option.



Sifting of Option Elements

The problems, benefits, and investment objectives, as well as assessment of evidence and feedback from previous stakeholder engagement, was used to develop an initial list of potential interventions such as bus lanes, cycleway options, improvements to intersections and pedestrian crossings.

Form Long List of Options

The interventions identified were reviewed against the investment objectives and some elements were rejected if they did not contribute towards achieving these, for example:

- Removing zebra crossings and replacing them with refuge islands, since zebra crossings have greater safety benefits
- Installing traffic signals at the Davis Street intersection, as it will increase bus travel times
- Building a roundabout at the Tinakori Road intersection since it would increase bus travel times by introducing delay to flows on Thorndon Quay.

The remaining elements were packaged into a long list of options.

Long List to Short List Assessment

The long list of options was assessed using a high level Multi Criteria Assessment (MCA) process to assess and compare options against a range of objectives and criteria, to arrive at four options for short list assessment. The key elements which make up the short-listed options included:

- Bus lanes or special vehicle lanes (SVLs) in the southbound direction only or both in the northbound and southbound directions on Thorndon Quay and Hutt Road.

² Refer to Chapter 3



- Uni-directional or bi-directional cycleway along Thorndon Quay.

A SVL was defined as a traffic lane which can be used only by buses and trucks.³ This option was included in response to the investment objective relating to freight access.

The assessment also identified that the provision of a bus or SVL on Hutt Road added additional risks. These include:

- An increased risk of side impact crashes - drivers will be required to cross two opposing lanes of traffic which will likely have different speeds at peak times due to the freely flowing SVL lane, thereby making it more difficult to judge safe gaps in traffic when turning
- An increased risk to motorcyclists and cyclists from turning traffic - the addition of the SVL had the potential to mask motorcyclists which may be filtering between the two traffic lanes to pass slower moving vehicles in the general traffic lane, and also cyclists riding on the shared path. Furthermore, due to congestion and the completion of the other shared path projects in the city, these users are likely to increase in number in the future, increasing the likelihood of a crash.

To mitigate this risk, options that included a central median and a service lane sub-option were developed. The options also included a new roundabout on Aotea Quay to provide a turnaround facility for trucks which may be impacted by the central median/service lane provision.

The full list of short-listed options is summarised below.

Option	Elements			Common Elements
	Thorndon Quay Bus Lanes	Thorndon Quay Cycle Lanes	Hutt Road Special Vehicle Lanes	
Option 1: Southbound bus lanes with Thorndon Quay bi-directional cycleway	Southbound	Bi-directional	Southbound	<ul style="list-style-type: none"> Removal of angle parking on Thorndon Quay to improve safety⁴ Speed limit review Intersection upgrades Pedestrian Crossing Improvements Bus stop rebalancing and layout improvements Thorndon Quay amenity improvements
Option 1A: Southbound bus lanes with Thorndon Quay bi-directional cycleway	Option 1 plus: <ul style="list-style-type: none"> Left-in / Left-out on Hutt Road (central median) Construct a roundabout on Aotea Quay 			
Option 1B: Southbound bus lanes with Thorndon Quay bi-directional cycleway	Option 1 plus: <ul style="list-style-type: none"> Creation of a service lane on east side of Hutt Road (between Onslow and Kaiwharawhara) Signalise Kaiwharawhara and Onslow Road intersections 			
Option 2: Southbound and Northbound bus lanes with Thorndon Quay uni-directional cycleway	Both directions	Uni-directional	Both directions	
Option 2A: Southbound and Northbound bus lanes with Thorndon Quay uni-directional cycleway	Option 2 plus the same variants as for Option 1A			
Option 2B: Southbound and Northbound bus lanes with Thorndon Quay uni-directional cycleway	Option 2 plus the same variants as for Option 1B			

³ Allowing motorcycles to use the SVL is not recommended. This will be confirmed during detailed design.

⁴ Since implemented by WCC



Option 3: Southbound bus lanes with Thorndon Quay uni-directional cycleway	Southbound	Uni-directional	Southbound
Option 3A: Southbound bus lanes with Thorndon Quay uni-directional cycleway	Option 3 plus the same variants as for Option 1A		
Option 3B: Southbound bus lanes with Thorndon Quay uni-directional cycleway	Option 3 plus the same variants as for Option 1B		
Option 4: Southbound and Northbound bus lanes with Thorndon Quay bi-directional cycleway	Both directions	Bi-directional	Both directions
Option 4A: Southbound and Northbound bus lanes with Thorndon Quay bi-directional cycleway	Option 4 plus the same variants as for Option 1A		
Option 4B: Southbound and Northbound bus lanes with Thorndon Quay bi-directional cycleway	Option 4 plus the same variants as for Option 1B		

Multi Criteria Assessment of Short List

Following the development of the short list of options, the next phase was the multi-criteria assessment (MCA) on the short list to inform the selection of a preferred option. The main considerations in the assessment were the extent to which the option met the project investment objectives, the effects of the option, and its delivery cost/timescale/operations implications.

Options were scored using an eleven-point scale (from -5 to 5), with zero being no change from current state, positive being an improvement to the current state and negative being worse than the current state. This indicated that the highest scoring options are Options 4A and 4B.

While Options 4A and 4B scored similarly overall, the provision of a service road (suboption B) was discounted as being more disruptive, fit less with other regional projects and carried larger implementation risk.

It was noted that the provision of a bidirectional cycleway (i.e. Options 1 or 4) should be aligned with the wider LGWM programme as there are bidirectional facilities planned to the north and south of the corridor. It was also noted that while both unidirectional and bidirectional cycle facilities would improve safety and level of service, unidirectional cycleways (Options 2 or 3) scored better for safety, due to less risk with cyclists travelling with the direction of general traffic.

Following the interim MCA workshop, the Technical Advisory Group met to discuss a recommended option. It supported the highest scoring option of 4A, while noting the additional safety risks inherent with bidirectional cycleways. Option 4A was recommended to be the best option to take forward as the interim preferred option. This decision was supported by the LGWM Programme Steering Group.

Public and Stakeholder Engagement

Public engagement on the emerging proposals was undertaken between 11th May and 8th June 2021. Over 1,600 responses were received, largely via an online survey. The consultation also



included an open day at Pipitea Marae on Thorndon Quay, and two market days at Harbourside Market, Waitangi Park and at Johnsonville Market. Ongoing discussions were held with some key stakeholders.

Overall, the engagement was well received, and the feedback was supportive of the proposals and no additional options emerged from the process which had not been considered before. However, many local businesses and retailers along the Thorndon Quay did not support any change to status quo primarily due to their concern that any changes that remove parking will be detrimental to their business. Hutt Road businesses were concerned with restricted access to their property and additional travel times. A number of items were identified for further consideration during detailed design.

Final Multi Criteria Assessment

Following stakeholder and public engagement, a second MCA workshop was held on 30 June 2021. The purpose of this workshop was to consider the impact of engagement feedback on the interim MCA scores, update scores based on any further information, as well as to incorporate the mana whenua values assessment into the MCA.

The delivery team noted that since the interim MCA, some preliminary design of Option 4A had progressed, including more detailed evaluation of the available width on Hutt Road and desired width for the various modes. Based on this further work, the delivery team considered that the service lane 'B' suboption does not physically fit within the corridor and property acquisition would be necessary. Discussion at the workshop confirmed that the delivery score for the service lane should be reduced to -5 (the lowest score possible).

As buildings would require alteration or demolition to implement the service lane suboptions, it was agreed that the service lane options, despite the scoring, should no longer be progressed due to the disproportionate cost and effect of land acquisition.

The introduction of the mana whenua values scores and the reduction of the delivery score for the service lane suboptions changed the relativity between options compared to the interim MCA. Options 4A and 4B still scored the highest, similar to the interim MCA. This scoring does not reflect the decision that the service lane suboptions should no longer be progressed. Option 4A was therefore recommended as the preferred option for the project.

The Recommended Project

In summary, the project recommended for Thorndon Quay will provide part-time bus lanes in both directions and extend the two-way cycle path from Hutt Road to the bus interchange at Mulgrave Street. Footpaths and the streetscape will also be improved. The provision of part-time bus lanes in both directions will also future proof the corridor to cater for increased future public transport demand - with potential for longer hours of operation or full-time bus priority (or Bus Rapid Transit) in future.

Changes will allow for future growth of bus users and cyclists and encourage more people to walk, shop and spend time on Thorndon Quay. Safety will be improved for everyone by improving pedestrian crossings by making it safer and easier to cross the road and providing a dedicated cycle path. Improvements are to be made to the Ngauranga/ Jarden Mile intersection, which will lead to significant improvements for people walking and cycling in this area.

The proposal for Hutt Road includes providing part-time bus lanes in both directions and bus priority at the Ngauranga/Jarden Mile intersection. Bus lanes are proposed in both directions to improve bus travel times and reliability during peak hours, making buses more reliable and an attractive form of transport. Consideration has been given to whether other vehicles should be



allowed to share the bus lane (Special Vehicle Lane) on Hutt Road such as freight. It is expected that motorcycles will not be permitted to use the lane. This will be confirmed at detailed design.

The design also includes upgrading and extending the existing shared cycle and footpath to the Ngauranga/Jarden Mile intersection. Options for upgrading the existing connection from this intersection to the Ngā Ūranga ki Pito-One (Ngauranga to Petone) section of Te Ara Tupua is not in the scope of this SSBC. This was considered in a separate study, which is included as an addendum to this SSBC.

Anticipated Benefits of the Project

The project is expected to deliver the following benefits which are consistent with the current Government Policy Statement (GPS) on Transport:

- An economic benefit to cost ratio (BCR) of between 0.4 (assuming all traffic stays on Hutt Road) and 1.8 (assuming all traffic has transferred to SH1 and has joined the back of the queue on SH1/2), depending on the assumptions made with regard to trip diversion from Hutt Road/Thorndon Quay to State Highway 1.
- A higher BCR is likely if it assumed that that all traffic transfers to SH1 but retimes to outside the peak hours.
- A reduction in the number of fatal and serious injury crashes (FSIs) from 2.6 to 1.9 per year on Thorndon Quay by 2026, due largely to the improved facilities for pedestrians and cyclists, and the predicted increase in bus use.
- Improved pedestrian and cycling amenity/level of service on Thorndon Quay and Hutt Road.
- Increased bus patronage along Hutt Road – estimated to be approximately 17% in the morning peak (two-hour period for buses travelling along Hutt Road/Thorndon Quay towards the CBD), and about 18% in the evening peak (two-hour) period for buses leaving the CBD, by 2026.
- Bus travel time savings of up to approximately eight minutes in the morning peak (two-hour) period, for buses entering the CBD, and up to approximately two and a half minutes in the evening peak (two-hour) period, for buses leaving the CBD, by 2026.
- Modest travel time savings (up to two minutes) for trucks travelling on Hutt Road.

The preferred option has been assessed using the latest Waka Kotahi Investment Prioritisation Method to understand its wider benefits and alignment with the GPS. This gives the investment proposal a priority order rating of five in the improvement category scale of one to eight, placing the project with an investment profile of HL Priority 6.

Financial Case

A risk-based cost estimate has been prepared for the recommended option. The project has an estimated cost in the range of \$55.3m (P50) - \$66.8m (P95). The estimates do not account for inflation or discounting and excludes any property costs apart from land associated with proposed works at Aotea Quay roundabout. The cost associated with land acquisition are estimated to be \$1.8m (P50) - \$2.2m (P95). Implementation of the project will also result in existing and additional assets requiring ongoing maintenance. A key risk is that the project cost exceeds the level of affordability.

Commercial Case

There is a strong motivation, need and support for LGWM to deliver the project as soon as possible. The primary activities to be undertaken during the pre-implementation phase are detailed design and construction support services and obtaining consents. It is estimated that the project will have a construction period of about 30 months.



A single professional design, engineering and consents services supplier is recommended to be utilised for the project. Given the need to accelerate the project, the option of progressing elements of pre-implementation using a direct appointment approach is recommended.

An initial assessment of delivery models indicates the project will likely be delivered via a variant of the Early Contractor Involvement (ECI) model. Works at Aotea Quay will be delivered as a separate package to ensure early completion ahead of works on Hutt Road and on Thorndon Quay.

This procuring model is appropriate due to the project complexity, uncertainty, innovation, and risk being low. It will allow the implementation phase of the project to enter the market quickly and be delivered within the anticipated timeline. It also allows for a high level of involvement and control of the project by LGWM. The recommended procurement strategy for the project needs to be communicated to the supplier market.

The project shares some similar objectives to the Waka Kotahi Ngā Ūranga ki Pito-One (Ngauranga to Petone) shared path project, such as to improve active mode facilities, connections, and accessibility for a range of customers. There will be common stakeholders, and their delivery timeframes could be similar too. Whilst both projects will be delivered independently, there are opportunities and benefits for the project teams to collaborate to share information, ideas, learnings and expertise. There may be scope advantages to seek optimisation and collaboration between the two projects, subject to the confirmation of the delivery timing of the Ngā Ūranga ki Pito-One shared path project and any funding agreements.

A project risk register has been developed and regularly reviewed throughout the SSBC process to manage risks appropriately. In the pre-implementation phase, it is likely that many of the technical risks associated with obtaining statutory approvals, will be transferred to the professional service providers on award.

A consenting strategy has been prepared which identifies project consenting, statutory approvals, environmental considerations and key mitigation areas. The strategy identifies that the works required to deliver the project will likely be permitted under the Resource Management Act 1991 (RMA)⁵. An archaeological authority is recommended to be acquired via Heritage NZ.

Management Case

Project implementation will be led by LGWM, as the project sponsor, in partnership with Waka Kotahi, WCC, GWRC and Mana Whenua. Design and construction will be undertaken by its consultants and contractors. The existing LGWM governance structure that has sat across the delivery of this SSBC is recommended to continue to co-ordinate delivery of the project in its next phase.

The development of a Communications and Engagement Plan for the pre-implementation and implementation phases of the project will form the starting point for ongoing engagement. There are diverse views and conflicting demands between different stakeholders that need to be reconciled.

Key focus areas for ongoing engagement are to seek feedback on detailed design and highlight key changes or enhancements from a design perspective. A number of the tools and processes established to date will be redeployed to address the concerns identified to date.

A detailed construction phasing strategy will need to be developed during the pre-implementation phase. Careful consideration will need to be given to the likely construction impacts of the project,

⁵ A key issue is the disturbance of potentially contaminated soil that may require resource consent under the NESCS.



given the importance of keeping the corridor operational during the construction of works. Equally, construction opportunities have been identified by the Partners that will lead to efficiencies in implementation. Works at the Aotea Quay turnaround facility have been assumed to take place separately to those on Thorndon Quay/Hutt Road, in order to avoid unacceptable delays to traffic during construction.

The LGWM Project Manager is responsible for on budget delivery and the services of a Cost Manager will be necessary during implementation to manage construction expenditure. Financial management shall be undertaken in accordance with the relevant Waka Kotahi procedures.

The project will be required to report weekly into the LGWM programme through all future phases of development and delivery. Reporting and information transfer is covered with the project management plan, namely: schedule, cost, risk/issues, health and safety, resourcing, and benefits.

Next Steps

The key next steps for the project include:

- Confirming endorsement of the recommendation of this Single Stage Business Case
- Procurement of services and progress with pre-implementation, and implementation of the Recommended Option, with an initial focus on critical path activities including land acquisition and statutory approvals
- Undertaking detailed design, using the community engagement feedback received to finalise the preferred option detailed design for construction
- Engagement with the teams and governance bodies delivering parallel work around the study area.

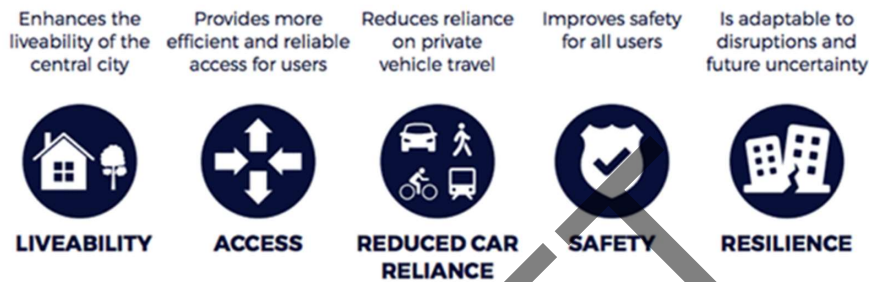
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1 Introduction

1.1 The Let's Get Wellington Moving Programme

The Let's Get Wellington Moving (LGWM) Programme is an ambitious \$6.4 billion long-term multi-modal investment. It is a joint initiative between Wellington City Council (WCC), Greater Wellington Regional Council (GWRC), and Waka Kotahi (the New Zealand Transport Agency). The Programme objectives are summarised below.

A transport system that:



Following significant public engagement, a Programme Business Case (PBC) developed a vision and a Recommended Programme of Investment (RPI) for LGWM to support the delivery of this vision. LGWM is a once in a generation opportunity to transform how people get around New Zealand's Capital City. It seeks to deliver an integrated transport system that supports the community's aspirations for how Wellington City will look, feel and function. At its heart, it seeks to move more people with fewer vehicles, provide attractive travel choices and reshape how people live. It will make the city and region more compact and sustainable, and a better place to be in.

While recognised as one of the world's most liveable cities, Wellington's transport system is starting to constrain the city and region's liveability, economic growth and productivity. The Programme will provide better walking facilities, connected cycleways, and high-quality Mass Rapid Transit (MRT), along with more reliable buses, improvements at the Basin Reserve and an extra Mount Victoria Tunnel. These improvements will go hand-in-hand with planning and urban development changes. They will also help reduce emissions from road transport and our reliance on private vehicle travel.

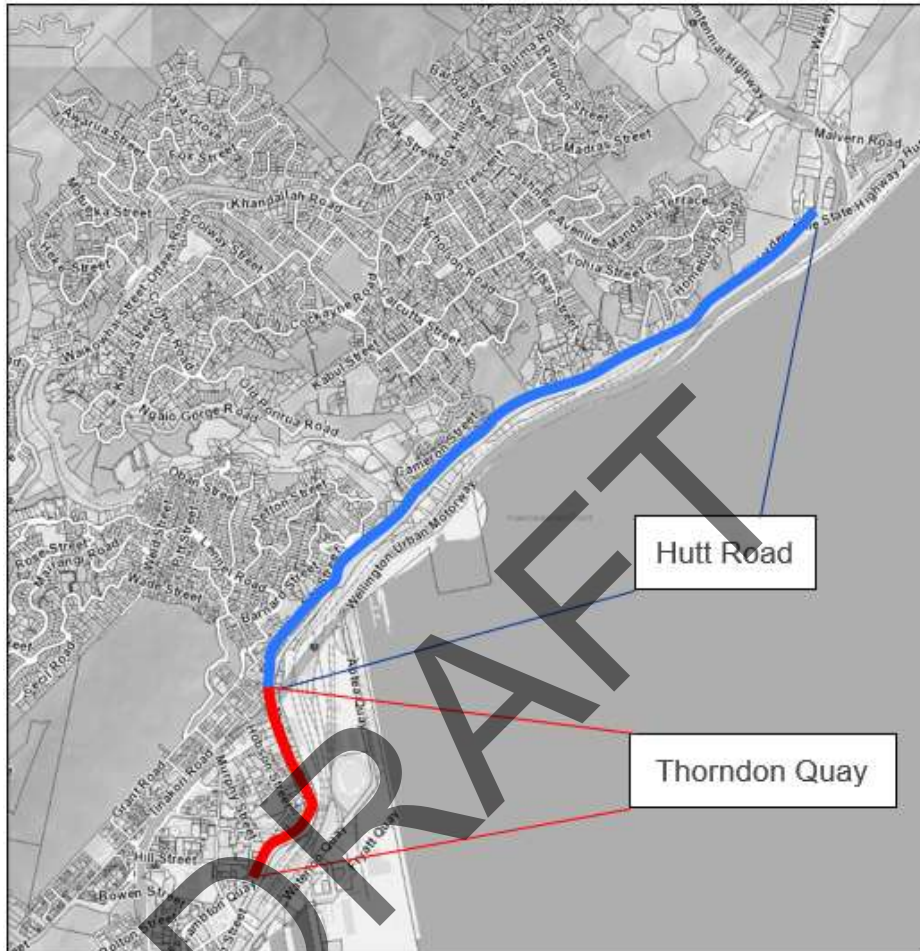
The main geographical area of focus for LGWM is between Ngauranga Gorge and the Airport, including the Wellington Urban Motorway and its connections to the central city, hospital, and the eastern and southern suburbs.

1.2 The Thorndon Quay Hutt Road Project

The Thorndon Quay and Hutt Road (TQHR) corridor is one of the city's most important commuter routes connecting Wellington CBD with the northern suburbs and the rest of the region. It is the busiest bus corridor outside of the city centre, and the busiest route in the city for people cycling to and from work. A Problem Definition and Case for Change was prepared for the TQHR corridor by LGWM in October 2019.

Thorndon Quay starts at the intersection of Mulgrave Street, just north of the Lambton Quay Bus Interchange at the northern edge of Wellington's CBD (adjacent to Victoria University / Wellington Railway Station) and extends for about 1km north to the intersection of Hutt Road and Tinakori Road. Hutt Road continues north of Thorndon Quay, and is parallel to State Highway 1 (SH1) and the North Island Main Trunk (NIMT) railway line for about 4km to Centennial Highway at the bottom of the Ngauranga Gorge. The TQHR corridor is shown in Figure 1-1.

Figure 1-1 Thorndon Quay Hutt Road Corridor



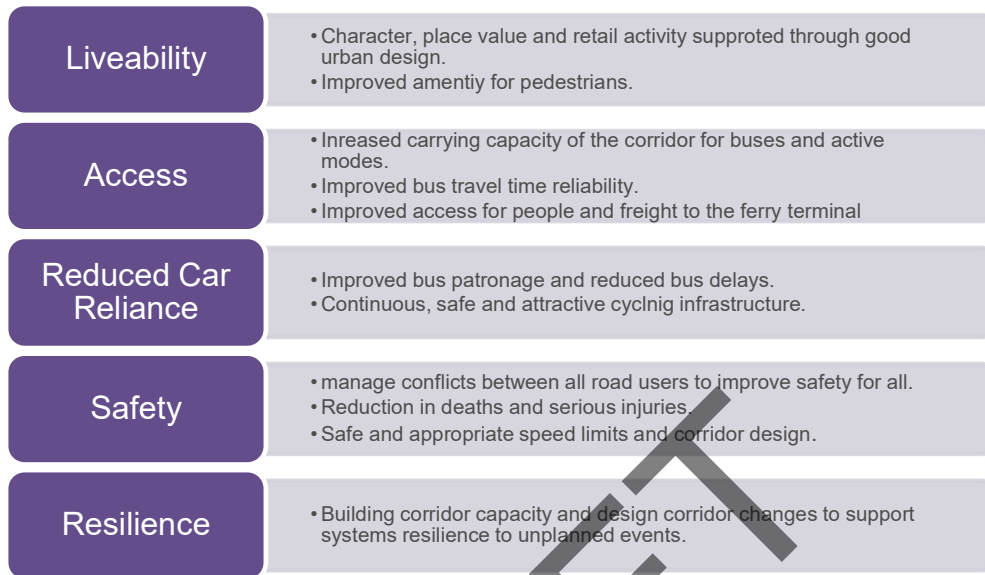
With a growing number of people expected to live and work in Wellington City and the wider region, more people will want to walk, cycle or take the bus along the TQHR corridor instead of going by car. Completion of the Ngā Ūranga ki Pito-One section of Te Ara Tupua, will enable more people to walk and cycle between the Hutt Valley and Wellington. Options to upgrade the existing connection from this intersection to Te Ara Tupua is not in the scope of this SSBC, but was being considered in a separate study which is included in Appendix A.

In summary, the aim of investment in the TQHR corridor (“the project”) is to provide safe and reliable travel choices for everyone and, in particular, to support more people to take public transport or use active modes by:

- Making travel by bus to the central city and through the TQHR corridor faster and more reliable, and
- Creating a safer and better environment for people walking and on bikes.

How the objectives for the TQHR project fit within the wider LGWM objectives are summarised in Figure 1-2.

Figure 1-2 Project Objectives



1.3 LGWM Early Delivery Workstream

The TQHR project is part of the three-year delivery programme which aims to develop and implement components of the LGWM programme that are capable of progressing in the short-term. These are projects that are not constrained by the scope of larger and/or more complex components of the wider programme of investment such as MRT that may be several years away from implementation. The three-year programme will help demonstrate to the community and stakeholders the direction of the wider programme.

1.4 Purpose of the Single Stage Business Case

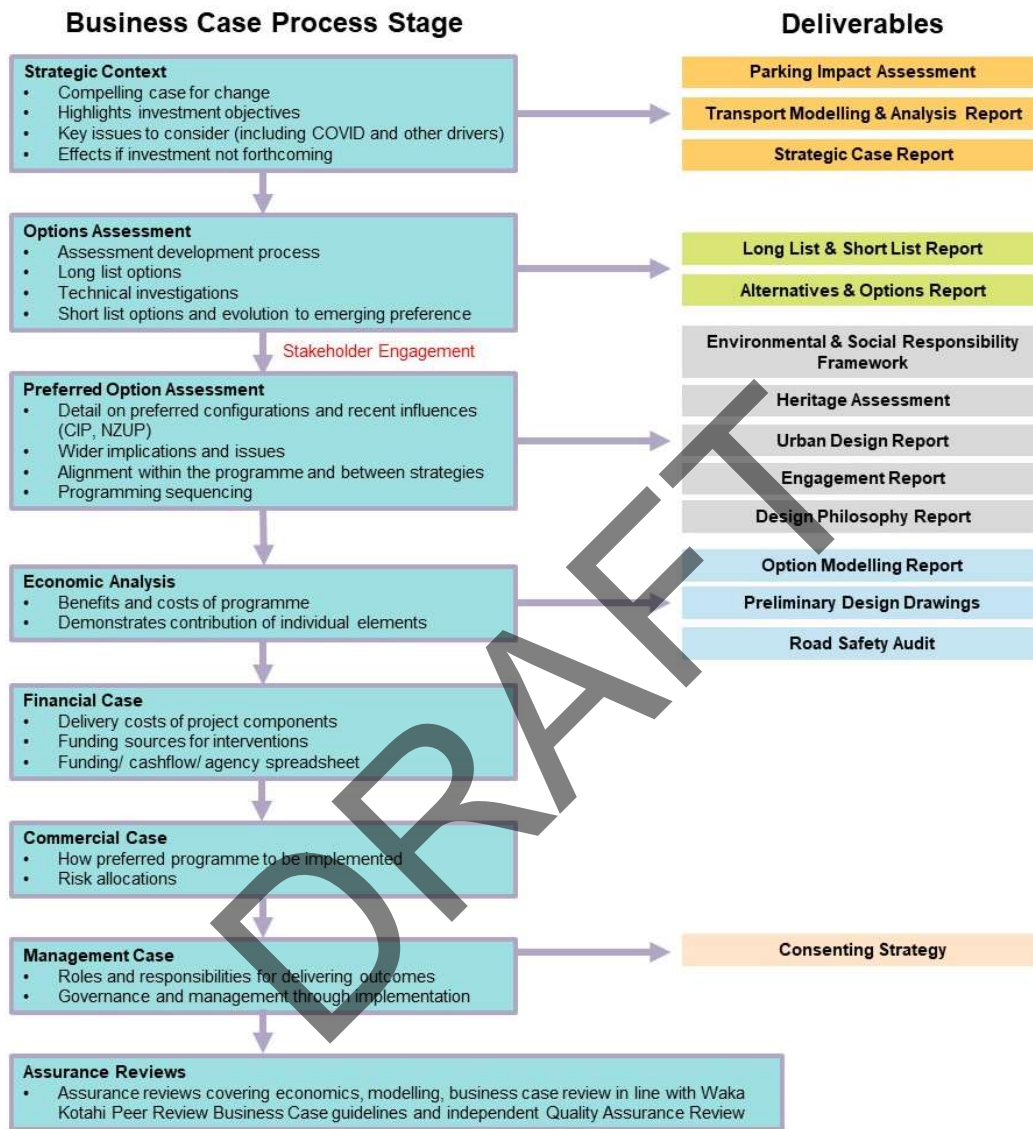
The purpose of this Single Stage Business Case (SSBC) is to build on the ‘Problem Definition and Case for Change’ and develop the case for investment in the project. It confirms the problems and opportunities set out in the ‘Problem Definition and Case for Change’ and sets out the overarching goals and objectives for investment. An optioneering process is then followed to establish a preferred option to address these problems and achieve the investment objectives.

An economic, financial, and commercial assessment is undertaken for the preferred project option. The SSBC also outlines how the preferred option can be delivered which gives effect to the desired outcomes of LGWM.

1.5 Business Case Process

The process followed to develop the business case is summarised in Figure 1-3, which includes the key deliverables. The SSBC has been developed in two distinct stages. In the first stage, a range of options were considered, and an emerging solution was identified. This solution was taken to public consultation. In the second stage, the emerging solution was developed and assessed in more detail so that a preferred option could be confirmed. Interim versions of some of the deliverables shown in Figure 1-3 were prepared to inform the earlier tasks undertaken. These are not shown on the diagram.

Figure 1-3 Single Stage Business Case Process and Deliverables



1.6 Previous Technical Work Informing this Business Case

The development of the business case was informed by the technical work undertaken for a number of earlier studies of the corridor, including:

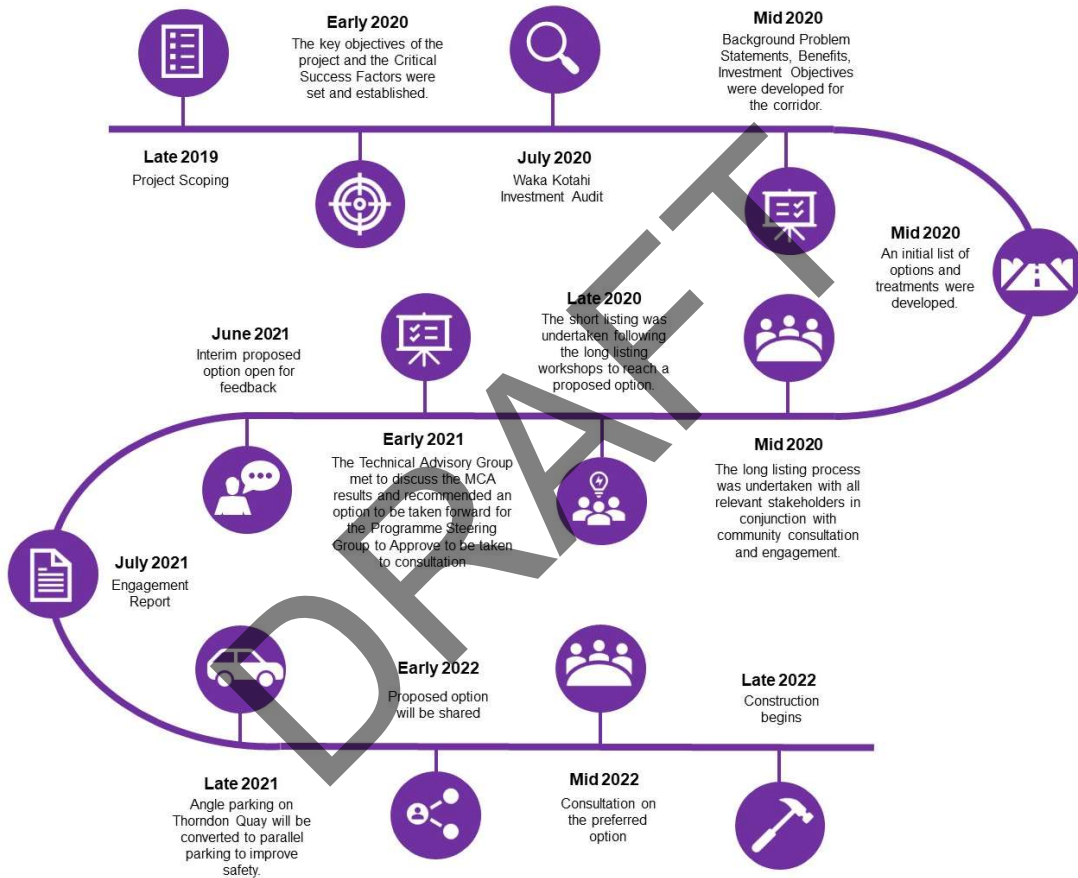
- Hutt Road Sustainable Transport Study (WCC, 2015)
- Wellington Central Business District (CBD) to Ngauranga Cycleway Indicative and Detailed Business Case (IBC and DBC) (WCC, 2016)
- Hutt Road Cycleway and Transport Improvements Committee report (WCC, 19 May 2016)
- Northern Connection: Thorndon (WCC, 2017)
- Design Report: Thorndon (WCC, 2018)

- Thorndon Quay Cycleway Committee Report (WCC, April 2018)
- Safety Audit of Hutt Road Cycleway (Stantec for WCC, January 2020)
- Wellington Multi-User Ferry Terminal PBC (June 2019).

1.7 Project Timeline

The project timeline is summarised in Figure 1-4. This shows the anticipated timescale for activities which will follow on from approval of the SSBC.

Figure 1-4 Project Timeline⁶



1.8 Project Workshops

A number of workshops and meetings with the TWG have informed and shaped the development of the SSBC. The main ones are as summarised in Table 1-1.

⁶ Angle parking changes on Thorndon Quay have since been implemented since consultation in May/June 2021.



Table 1-1 TWG Workshops and Meeting

Workshop/ Meeting	Date	Purpose
Objectives, Critical Success Factors (CSFs)	28/01/20	Drive over of the corridor by bus, setting objectives and critical success factors (CSF's).
Quick Wins	05/03/20	Testing of key issues and development of quick wins with the project technical working group (TWG).
Quick Wins Shortlist Confirmation	01/04/20	Confirmation of quick wins shortlist with the TWG.
Long List Themes	12/05/20	Presentation of the corridor vision, urban design assessment and identification of long list themes and interventions.
Investment Objectives	19/05/20	Meeting to discuss and agree problem statements, benefits, investment objectives and success factors. Attended by project team members, Owner Interface Managers (OIMs) and TWG representatives.
Long List to Short List Workshop 1	10/06/20	First presentation of a multi criteria assessment (MCA) outcomes and the emerging short list.
Long to Short List Follow up Workshop (1)	16/06/20	Follow up meeting to Long List to Short List Workshop 1 to discuss the emerging short list and format for public consultation.
Long to Short List Follow up Workshop (2)	7/07/20	Meeting with TWG to discuss Hutt Road options.
Long to Short List Follow up Workshop (3)	12/08/20	Workshop with TWG members to discuss the outcome of the safety assessment.
Long to Short List Workshop 2	3/09/20	Final presentation of the MCA outcomes and the emerging short list options for public consultation.
MCA and Preferred Options Workshop 1	18/11/20	Workshop to determine the ranking of short-list options and preferred options based on the investment objectives, effects, and delivery, maintenance, and operations.
MCA and Preferred Options Workshop 2	30/06/21	Workshop to review the interim assessment identified in 2020 in the light of the 2021 engagement feedback.

Extensive stakeholder engagement has been undertaken on the LGWM programme and on the proposals for the TQHR project. The most recent consultation took place in May/June 2021.

1.9 Interim Reports

A number of interim reports were prepared following the commencement of the SSBC process, notably:

- Engagement Report (July 2020)
- Parking Impact Assessment (September 2020)
- Strategic Case Report (October 2020)
- Long List to Short List Report (November 2020)
- Transport Modelling and Analysis Report (November 2020) – informing the preferred option
- Meeting Notes from Stakeholder Briefings (Undated)
- Stakeholder Briefing (May 2020)
- Engagement Data Analysis Report (June 2021)
- Heritage Assessment (July 2021)
- Social and Environmental Responsibility Screen (July 2021)
- Consenting Strategy (July 2021)
- Alternative and Options Report (October 2021)
- Preliminary Design Philosophy Statement (PDPS) (November 2021)
- Transport Modelling and Analysis Report (February 2022).

1.10 Business Case Structure

This SSBC is structured in six chapters following this introduction, as summarised in Table 1-2.

Table 1-2 Business Case Structure

Chapter		Content
2	Context	Provides background information on the project area and surrounding area.
3	Previous Stakeholder Engagement	Provides a summary of the engagement undertaken on the project up to that reported in the July 2020 Engagement Report
4	The Case for Change	Defines the problems and opportunities, benefits of investment and summary of issues and constraints.
5	Options Development and Assessment	Outlines the process undertaken from identification of options to determining the preferred, including the Stakeholder Engagement undertaken in May/June 2021. This includes a monetary and non-monetary assessment of the preferred option.
6	Financial Case	Provides information surrounding delivery and maintenance costs and funding options with associated risks.
7	Commercial Case	Provides evidence of the commercial viability of the proposal and the consenting and procurement strategy that will be used to engage the market.
8	Management Case	Provides information surrounding the viability of delivering the proposal.



2 Context

2.1 Growth and the Transport System in the Wellington Region

In recent decades major cities, such as Auckland, Sydney and Melbourne, have dominated economic and population growth in Australasia, attracting ever greater shares of skills, business and investment. Smaller cities like Wellington have had to find ways to stand out and position themselves. What a city can offer, in terms of quality of life and quality of jobs, is the decision driver for the locations in which mobile, skilled populations would like to live in.

Wellington has a world-class quality of life, a physical environment of outstanding beauty, a highly skilled population, high incomes, healthy communities, and a reputation for creativity and quality events. This is reflected in its reputation as a liveable city.

2.1.1 Population and Employment Growth

The population of the Wellington Region currently stands at around 510,000 people. Over 40% of the current 235,000 jobs in the Wellington region are in the central city. The high concentration of employment in the central city attracts commuters from the wider Wellington region.

Intensification of both residential and commercial land use in the central city, and an increase in the number of visitors, is leading to a growth in short journeys and demand for a safe and convenient central city street network with a high level of amenity. The growth in the number of jobs in the central city is also leading to an increase in the number of longer distance commuters who need to travel into the central city at peak times. This is especially evident for those travelling from the north, where new housing development is taking place.

2.1.2 The Transport System

Growth in the Wellington region as a whole is driving demand for journeys to the central city and port. There is also a demand for journeys through the central city, to reach important destinations such as the airport and hospital. This latter demand results in increased car travel through the central city as the public transport system's design is mainly focused on moving people into and out of the CBD. These significant movements conflict with the increasing number of buses, pedestrians and cyclists accessing the central city.

The transport system has a key role to play in facilitating further growth in Wellington, supporting further intensification of the central city and the high quality of life it has to offer. Enabling more people to live and move around the central city is desirable economically, as it supports an increasingly productive economy by matching innovative businesses with a highly skilled labour pool. Good job opportunities and a high quality of life tend to attract talented and skilled people to the city. Intensification in the central city and around public transport hubs is also desirable as it reduces the environmental impacts of travel to and from the central city.

In recent years, most of the growth in travel demand to, from and within the central city has been accommodated by people choosing more sustainable ways to travel, by walking, cycling and using rail and bus services. Private vehicle activity within the central city has been held in check by constrained road corridor capacity, traffic congestion on the approaches to the central city, and the relatively high cost of commuter car parking within the central city itself.



2.2 Existing Transport and Land Use on the TQHR Corridor

2.2.1 Land Use

There is a diverse mix of land use including residential, commercial, industrial, retail and education activities on Thorndon Quay between the Lambton Quay Bus Interchange and Davis Street. Land uses on Thorndon Quay between Davis Street and Tinakori Road include a number of high turnover land uses, including cafes, day care centres, vehicle repairs, a gym, trade shops, and large format retail such as carpet stores, furniture retailers, and plumbing supplies etc. There are also some residential apartments.

Land use on Hutt Road consists of larger retail units (e.g. Kaiwharawhara Spotlight shop and Placemakers). There is only limited residential land use, although there are a number of accesses leading to Ngaio and other residential areas. From the intersection of Onslow Road into the city there are a number of large commercial units operating which have direct entrance/ exits to/ from Hutt Road. An effluent disposal point is located in close proximity to Hutt Road, and a railway station exists at Ngauranga.

Hutt Road is bounded to the west by a steep scrub covered escarpment which constrains land use. State Highway 1, the NIMT railway line and Wellington Harbour are to the east. Land use is typically concentrated on the east side of the road, due to the topography and proximity to the rail corridor. There are numerous retaining walls of various typologies along the road.

Both Thorndon Quay and Hutt Road form a central spine for traffic and public transport connecting between the central city and the northern suburbs, as well as key growth areas and areas not served by the rail network.

2.2.2 Road Classification and Posted Speed Limit

Both Hutt Road and Thorndon Quay are classified as arterial roads under Waka Kotahi one network road classification (ONRC). Arterial roads are "vital roads which provide key strategic links in urban areas and contribute to the economic and social well-being of communities and the businesses that operate within them". They are also both classified as an over-dimension route and can be used by vehicles conveying hazardous goods.

The TQHR corridor is the main route and public transport corridor between the central city and northern suburbs, a key growth area including areas not served by the rail network. In the event of a major incident on SH1, Hutt Road and Thorndon Quay are used as an emergency detour.

The current posted speed on Thorndon Road is 50km/hr. Hutt Road has a posted speed limit of 60km/hr, which increases to 80km/h north of Onslow Road.

Figure 2-1 shows Wellington's road classification as defined by the Network Operating Framework (NOF). Figure 2-2 shows the extent of the area's strategic cycle network, including existing facilities and those planned.

Figure 2-1: Wellington Network Operating Framework

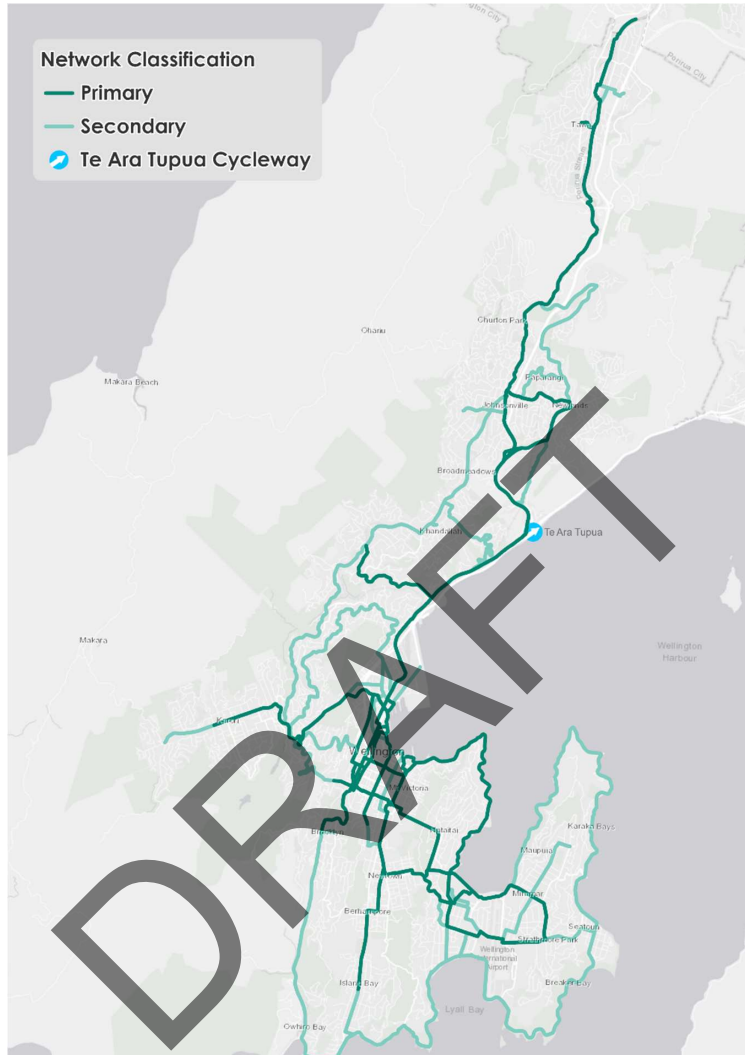
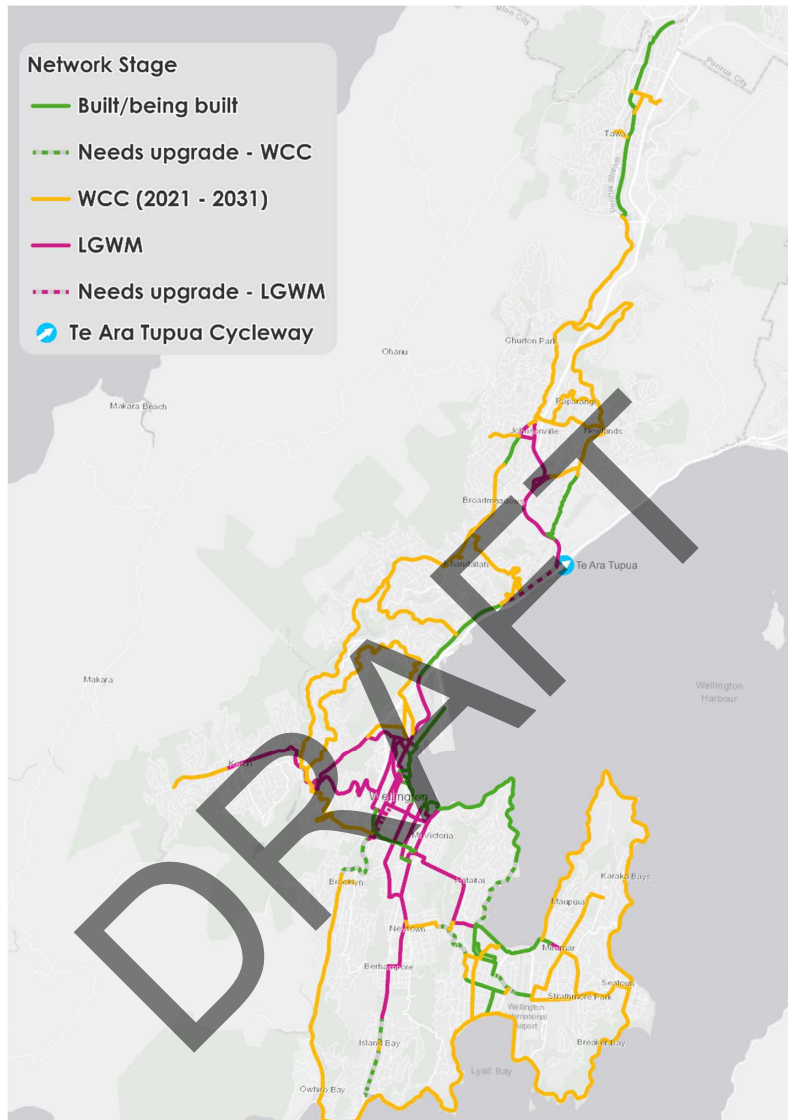


Figure 2-2: Wellington Strategic Cycle Network



2.2.3 Road Geometry

The majority of Thorndon Quay is about 24m wide from boundary to boundary. The road space is primarily allocated to general traffic lanes, however they include road cycle lanes, loading zones and metered parking spaces (some parallel, some diagonal). Footpaths are also typically 2 to 2.5m wide.

Hutt Road is predominantly 22.5m wide from boundary to boundary between Tinakori Road and the Ngauranga Gorge. This section of the corridor has a raised median in the form of a narrow-kerbed island or wide flush median and wider traffic lanes (typical in the order of 3.4m). The central median is delineated by either chevron white lining or low-profile mountable kerbing. There is a recently opened two-way off-road cycleway, and separate footpath on the eastern side of the corridor, along the section between the Caltex Station and Tinakori Road. There is a shared path

on eastern side of Hutt Road from Caltex Station north, to Jarden Mile. Footpaths exist on both sides of Jarden Mile and the southbound side of Centennial Highway.

2.2.4 Bus Services

Eleven bus routes operate along the corridor from the Lambton Quay Bus Interchange (Wellington Bus Station), as shown in Figure 2-3. At peak times there are in the order of 40 buses per hour, operating along Thorndon Quay (i.e. towards the city in the morning peak and away from the city in the evening peak). There are currently typically 16 buses per hour in each direction in the inter-peak period.

Figure 2-3 Bus Routes Serving the TQHR Corridor



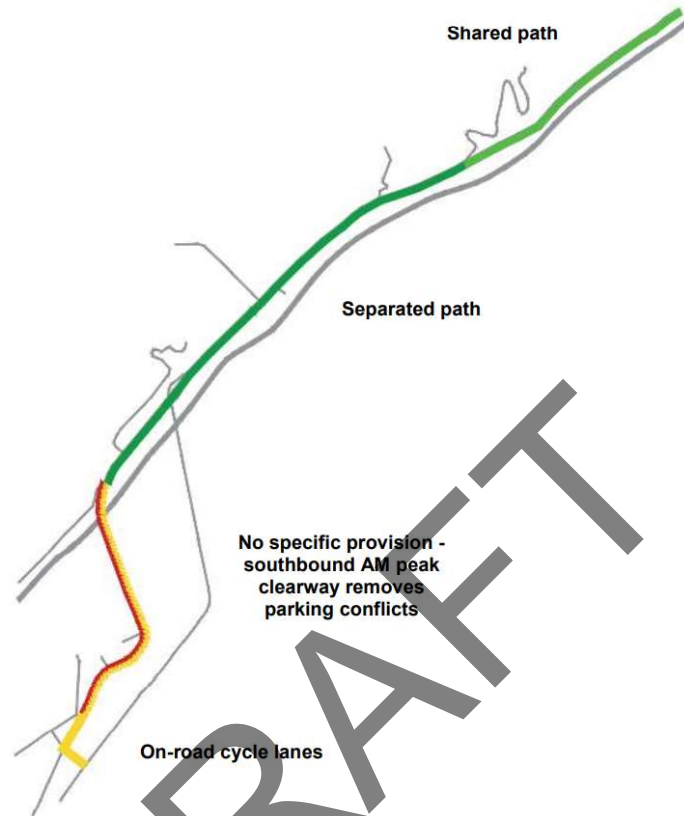
2.2.5 Cycle Facilities

Figure 2-4 summarises the current cycle facilities provided on the TQHR corridor. The existing facilities include:

- A shared walking and cycling path on Hutt Road (north of Onslow Road)
- A separated on Hutt Road (south of Onslow Road)
- On-road cycle lanes on Thorndon Quay.

The TQHR corridor is the only route for people coming from or to the Hutt Valley, and is also heavily used by people coming from / to the northern suburbs.

Figure 2-4 Cycle Facilities



2.2.6 Transport Demand

2.2.6.1 Traffic Flows

Hutt Road is the busiest section of the main route, between Kaiwharawhara Road and Aotea Quay. Traffic volumes increase from north to south along the route, until Aotea Quay where volumes decrease at both Aotea Quay and Tinakori Road, as shown in Appendix B. Traffic volumes increase again after Mulgrave Street.

2.2.6.2 Bus Use

There are approximately 10,000 bus passengers on an average day, using the corridor (two-way), making it the busiest corridor outside the city centre. A large proportion of bus travel is towards the City Centre in the morning (AM) peak period and away from the City Centre in the evening (PM) peak period. Demand is greatest at the southern end of the corridor, since more bus services join Hutt Road at Onslow Road and Kaiwharawhara Road.

Historic passenger demands in the morning peak two-hour period on Thorndon Quay, as derived from annual cordon surveys, are shown in Figure 2-5.



Figure 2-5 Bus Passenger Demand 2000 to 2019⁷

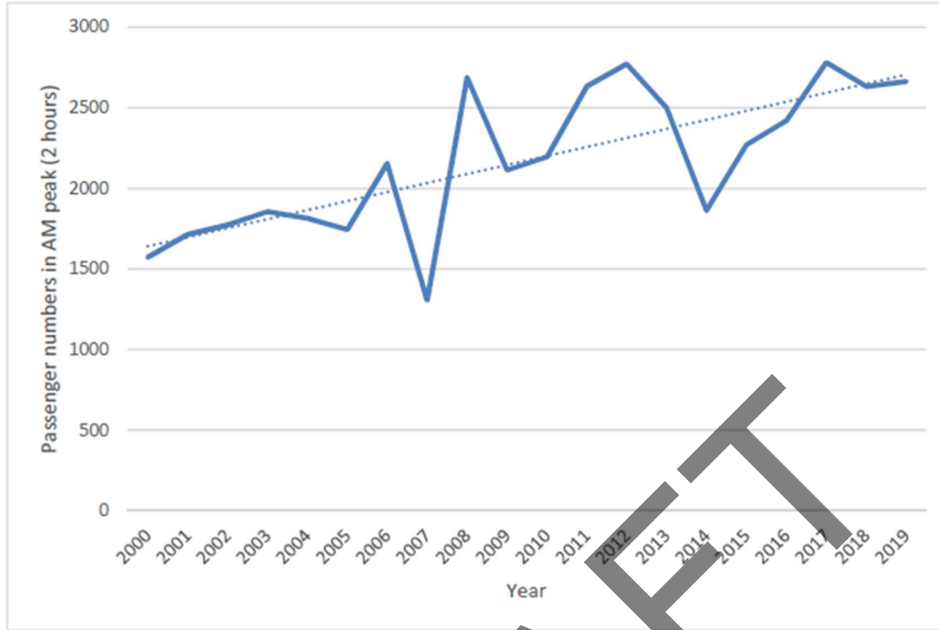
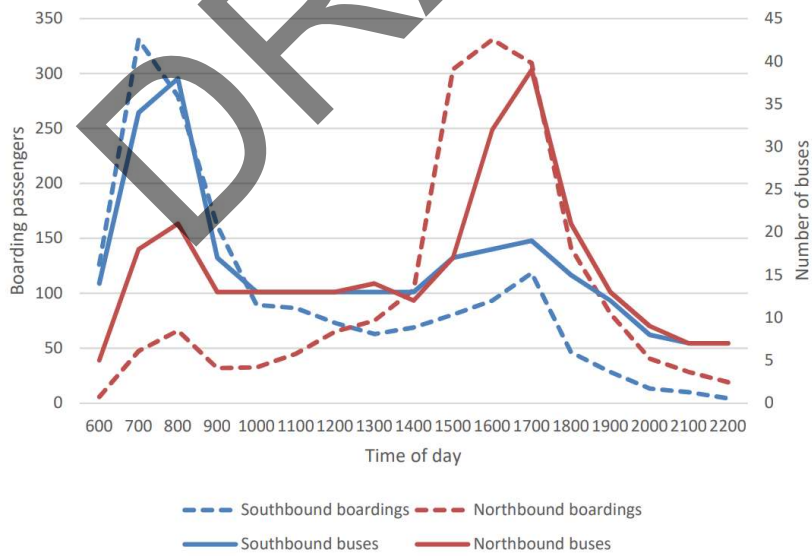


Figure 2-6 shows the number of boarding passengers and the number of buses on the TQHR corridor, by time of day and direction.

Figure 2-6 Boarding Passengers on the TQHR Corridor



⁷ 2020 bus patronage data is not shown because the patronage impacts caused by Covid-19 are not considered of significant scale to affect the outcomes of this business case.



2.2.6.3 Cycle Demand

The TQHR corridor is the busiest commuter cycling route in Wellington. Figure 2-7 shows the average and maximum daily cycle demands on Thorndon Quay by month (April 2018 to March 2019⁰⁹). The data shows that on average the weekday flow varies between approximately 700 and 1,300 cycle trips with higher demands in the warmer months. Maximum weekday flows are as high as approximately 1,600 trips per day. Weekend average flows vary between 160 and 360 cycle trips per day, with a maximum weekend flow of around 470 cycle trips per day.

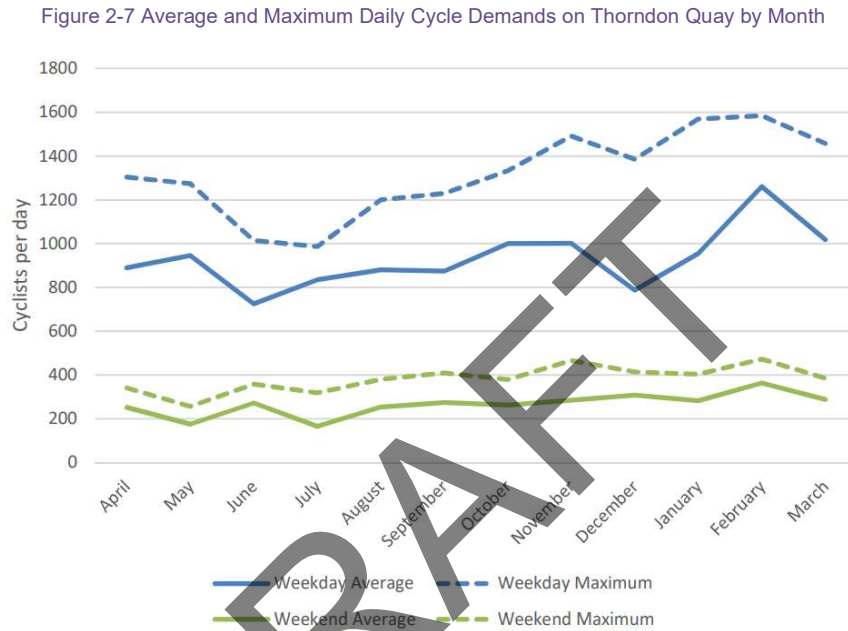
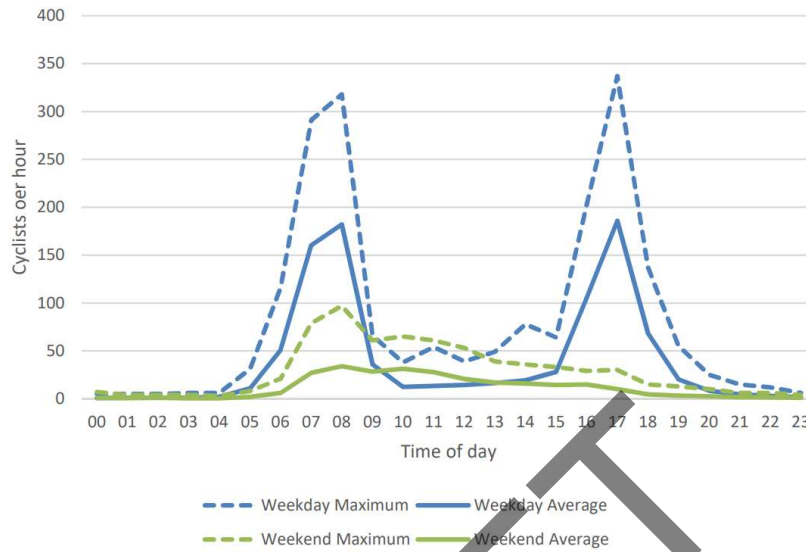


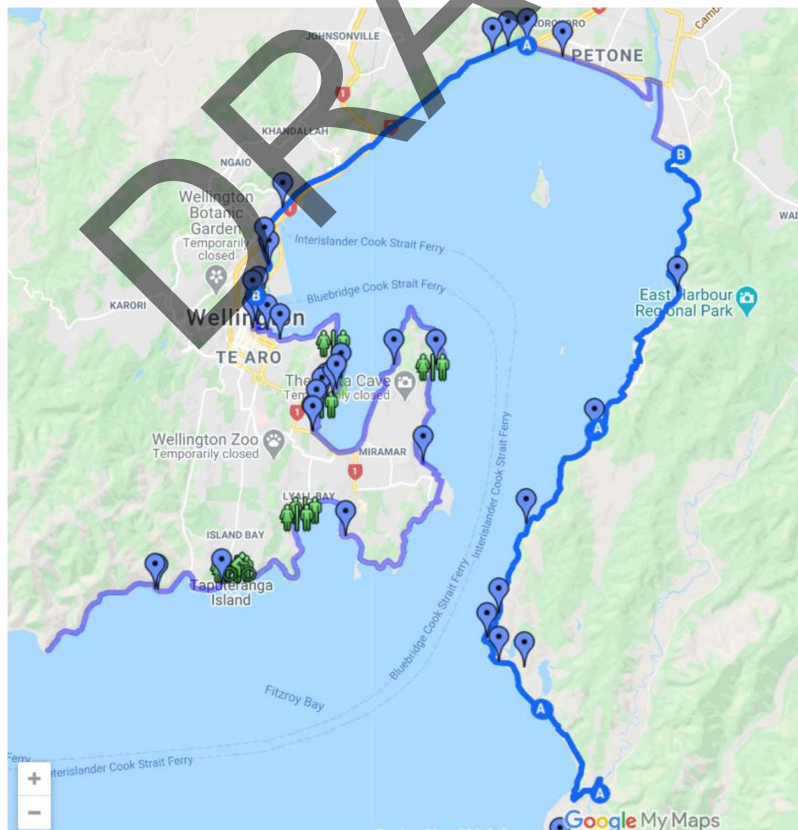
Figure 2-8 shows the average and maximum cycle demands on Thorndon Quay by hour between April 2018 and March 2019⁰⁹. The data shows that the weekday flows are concentrated around the network peak periods with the annual average hourly peak of 180 cyclists per hour. However, maximum hourly flows are as high as 340 cyclists per hour. Weekend average peak hourly flows are around 35 cycle trips per hour, with a maximum of around 100 cycle trips per hour.

Figure 2-8 Average and Maximum Daily Cycle Demands on Thorndon Quay by Time of Day



The TQHR corridor forms part of the Great Harbour Way/ Te Aranui o Pōneke Cycle Route, shown in Figure 2-9 and also serves as a recreational cycling route.

Figure 2-9 Great Harbour Way/ Te Aranui o Pōneke Cycle Route





2.2.6.4 Pedestrian Demand

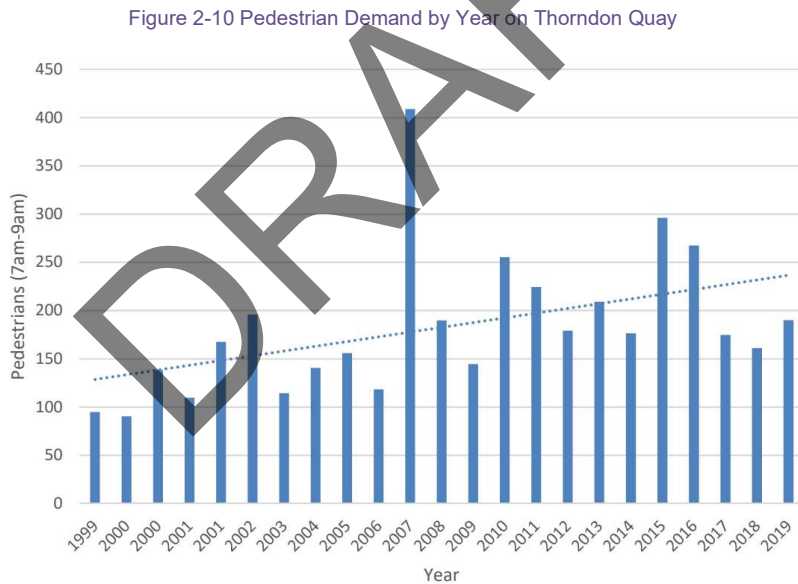
Table 2-1 shows the current approximate number of pedestrians at different locations along the corridor. This shows that pedestrian demand is greatest closest to central city and reduces with distance from the central city.

Table 2-1 Current Pedestrian Demand

Location	Peak Hour Demand	Daily Demand ^a
Hutt Road (north of Onslow Road)	5-15	50-150
Hutt Road (Kaiwharawhara Road to Onslow Road)	20-40	200-400
Hutt Road (Thorndon Quay to Kaiwharawhara Road)	50-100	500-1,000
Thorndon Quay	200-300	2,000-3,000

Pedestrian activity on Hutt Road is low to minimal, with virtually no pedestrian activity north of Kaiwharawhara Road, due to the existence of a high bluff adjacent to the road, and the railway corridor.

Figure 2-10 shows the pedestrian demand trend on Thorndon Quay in the morning two-hour peak period (7am-9am). The graph shows data from 1999 onwards.



2.2.6.5 Truck Movements

Hutt Road is also an important route for trucks, providing access to the existing the ferry terminal at Kaiwharawhara via the Aotea Quay interchange. This ferry is a key connection between the North and South Islands and therefore a significant economic contributor to the Wellington area and wider Aotearoa economy. Trucks comprise of up to 15% of traffic flows. Truck movements on Thorndon Quay are much lower.

^a Assumed to be ten times the peak hour flow



2.3 Future Changes

2.3.1 Land Use

Under medium projections, the population of the Wellington Region is forecast to grow by 15% over the next 30 years, equating to 75,000 extra residents. The distribution of this growth is estimated to be as follows:

- 30% will be focused on Wellington's central city and inner suburbs
- 20% will occur in Wellington City's northern suburbs
- 13% will occur in other areas of Wellington City
- The remainder (37%) will be around urban centres outside Wellington City, relatively evenly split across the Kapiti Coast, Porirua, Upper Hutt and Lower Hutt, with a lesser amount in the Wairarapa.

The population of Wellington's northern suburbs⁹ is forecast to increase from 51,600 (in 2018) to 62,000 (2043). These estimates are based on the current ID¹⁰ projections (developed February 2016).

Employment projections show regional employment growing by between 15% and 20%, over the next 30 years. They suggest that between 55% and 60% of future growth in employment is likely to be in the central city. This growth will potentially increase the number of jobs in these suburbs, from the current 99,000 to between 114,000 and 131,000 over the next 30 years.

Land use along the TQHR corridor is expected to see transformation and intensification over the time horizon of the LGWM programme. It is anticipated that Thorndon Quay specifically, will become an increasingly sought-after edge of CBD location for high density residential, office and other commercial uses.

Light industrial, depot and warehousing activities are expected to be replaced by higher order, land use activities as land values rise. The amenity of the area is also likely to increase, especially near the CBD where residential activity will drive expectations for a better street environment.

Figures 2-11 to 2-13 show the land use plans for the corridor, as defined in the current Wellington District Plan.

⁹ Ngaio, Crofton Downs, Khandallah, Newlands, Johnsonville, Grenada, Churton Park, Woodridge

¹⁰ <https://home.id.com.au/>

Figure 2-11 Land Use Plans for the Thorndon Quay Area

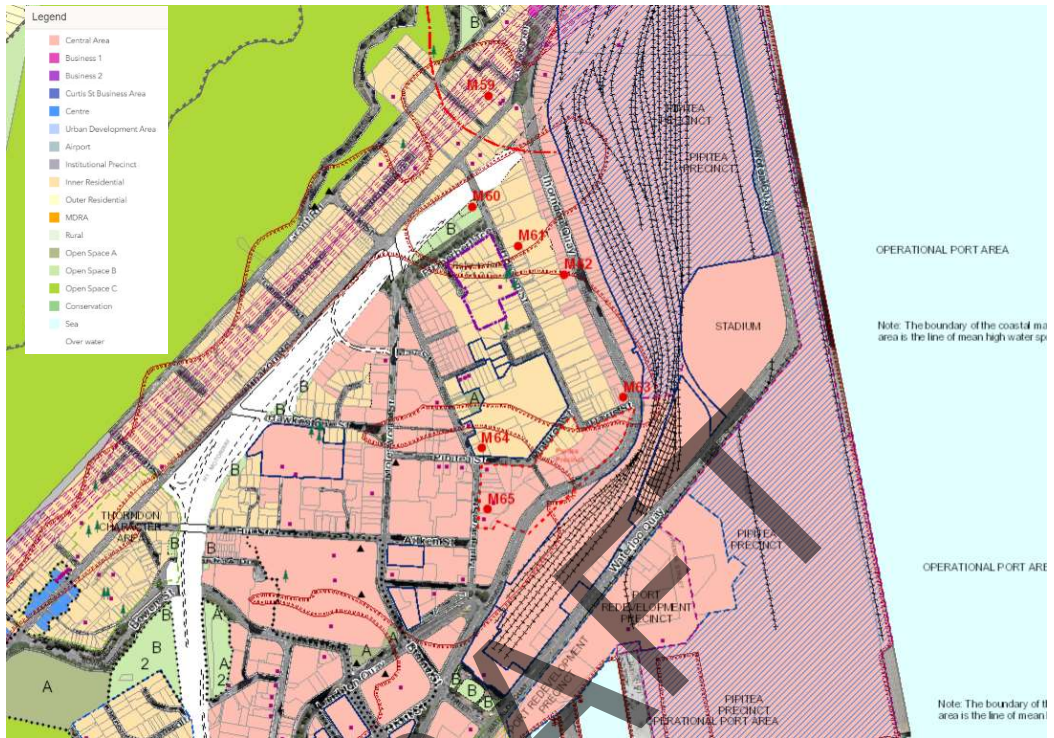


Figure 2-12 Land Use Plans for the Thorndon Quay/Hutt Road Area

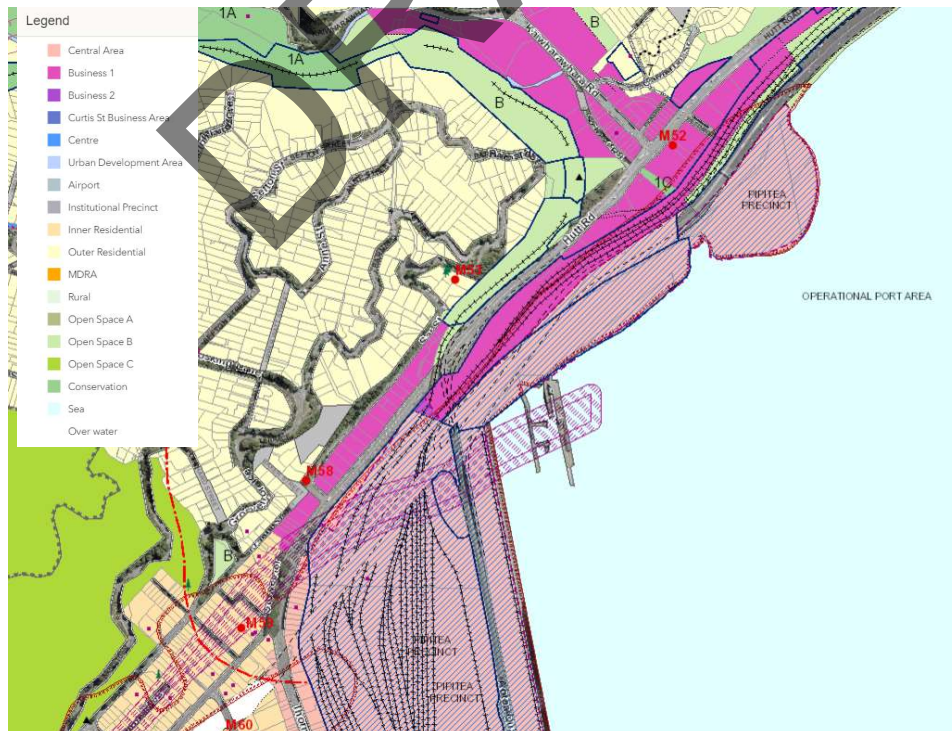


Figure 2-13 Land Use Plans for the Hutt Road Area



2.3.2 Interrelated Transport Projects

There are a number of transport projects which could impact the TQHR project and have been considered in the development of options. These are summarised in Table 2-2.

Table 2-2 Future Transport Projects

Project	Timeframe	Status	Explanation/Linkage
Golden Mile (LGWM)	3-4 years	SSBC underway	Improve bus convenience, travel times and reliability in Wellington's CBD.
City Streets (LGWM)	3-10 years	Tranche 1 SSBCs commences	Reallocation of road space on streets in the central city to enable the transport system to move more people with fewer vehicles and to improve access for all modes e.g. bus priority measures.
Low Cost Low Risk (Waka Kotahi)	1-3 years	Being implemented or being consulted on / designed	Includes generally small-scale 'quick win' improvements to Ngauranga Gorge for buses and people walking and cycling.
Transitional Bike Network Programme (WCC)	0-3 years	SSBCs underway	Accelerated roll-out of interim Wellington bike network, alongside associated bus network improvements.
Street Transformation Programme (WCC)	0-10 years	Underway	Permanent upgrades to improve walking, cycling and public transport (outside of LGWM scope)



Project	Timeframe	Status	Explanation/Linkage
Ngā Ūranga ki Pito-One Shared Path (Waka Kotahi)	3-4 years	Committed	Linking Ngauranga to Petone, this project will form an improved section of the Great Harbour Way/ Te Aranui o Pōneke Cycle Route by providing a new route along the harbours edge. This links into the existing shared path that joins Hutt Road at Jarden Mile. An addendum to this SSBC is considering a potential upgrade to this existing section of shared path.
Wellington Multi-User Ferry Precinct Indicative Business Case (IBC)	3-15 years	IBC underway	A new multi-user ferry terminal is proposed to be built at Kaiwharawhara. This will be shared by Bluebridge and Interislander ferries.
Wellington Single User Ferry Terminal	2-4 years	Under design	A new wharf and terminal is planned to support KiwiRail's purchase of two new rail-enabled Interislander mega-ferries, which are significantly larger than their current fleet.
Travel Behaviour Change (LGWM)	3-10 years	SSBC Underway	A package of travel behaviour change measures which can be implemented as part of the LGWM programme to significantly contribute to the travel choice and mode shift goals of LGWM.
Mass Rapid Transit (MRT) IBC (LGWM)	3-10 years	IBC Underway	Confirming the viability of MRT as an investment solution for Wellington linking Wellington Railway station to Te Aro, Newtown, Kilbirnie, Miramar and Wellington Airport.
State Highway Improvements IBC (LGWM)	3-10 years	IBC Underway	A package of improvements on the SH1 corridor between Ngauranga Gorge and Wellington Airport.

2.3.3 Transport Demand

The land use changes will drive demand for transport to and from the area. Forecasts prepared for the overall LGWM programme in 2019 indicated the following overall annual transport demand growth rates between 2013 and 2036:

- 0 to 0.6% in the morning peak period
- 0.25 to 0.5% in the inter-peak period
- 0 0.2% in the evening peak period.

Programme wide demand forecasts prepared in 2021 by the Wellington Analytics Unit (WAU), which assume improvements to the TQHR corridor, indicated annual growth in bus patronage of 3% per annum from 2026-2036 and 2% per annum from 2036 on the TQHR corridor. In absolute terms, this is growth from around 10,000 per day at present to about 11,000 per day in 2026 and to around 15,000 per day by 2036). These forecasts reflect the limited additional capacity the rail network can provide in Wellington, and therefore much of the increase in public transport demand is forecast to occur on the bus network.

The proposed Te Ara Tupua project will provide a missing critical walking and cycling connection between Wellington and Hutt valley. It is expected to result in a step change in the demand on the corridor. Forecasts for the project indicate that during the opening year (due mid-2024), the following user demands on an average weekday are expected:

- 600 additional cyclists' trips per day (1,300 in total)
- 450 additional walker/runner trips per day (450 walkers/ runner trips in total)
- 100 additional device user trips (e.g. e-scooters, etc) per day (100 device user trips in total).

The weekend forecasts are slightly higher compared to the weekday forecasts but have less pronounced and differing peak periods. Demand is predicted to increase by approximately 10% per annum between 2025 and 2030.

This will result in a step change in cycle demand. Most of the extra cycle demand is likely to use the Hutt Road Thorndon Quay corridor and travel to Wellington's CBD. There will also be additional cyclists on TQHR corridor travelling via Ngauranga Gorge and Kaiwharawhara.

There is also potential for increased recreational walking and cycling along the TQHR corridor, however. This increase in recreational walking and cycling is difficult to quantify as the current environment and wider walking and cycling connections (to the north of Hutt Road) are not well suited to walking and cycling for leisure purposes. Many walkers and runners are likely to use only a portion of the path, predominantly starting and finishing at the Petone end.

A large increase in truck movements, potentially by as much as 50%, is expected by 2036, due to the introduction of new larger ferries.

2.4 Alignment with National, Regional and Local Policies and Plans

Investment in the TQHR corridor is aligned with national, regional and local policy plans and policies, as summarised in Table 2-3.



Table 2-3 Policy and Plan Alignment

Policy/Plan	Alignment with TQHR Project
<p>Government Policy Statement (GPS) for Land Transport 2021/22-2031/32</p>	<p>The purpose of the transport system is to improve people’s wellbeing, and the liveability of places. It does this by contributing to five key outcomes, identified in the Ministry of Transport’s Transport Outcomes Framework. These are:</p> <ul style="list-style-type: none"> ▪ Inclusive access ▪ Economic prosperity ▪ Healthy and safe people ▪ Environmental sustainability ▪ Resilience and security, <p>GPS 2021 has four strategic priorities which will guide land transport investments from 2021/22-2030/31. These are:</p> <ul style="list-style-type: none"> ▪ Safety ▪ Better travel options ▪ Climate change ▪ Improving freight connections.
<p>Wellington Regional Land Transport Plan 2021 (adopted June 2021)</p>	<p>Investment in the region’s transport system will be guided by the following priorities:</p> <ul style="list-style-type: none"> ▪ Public transport capacity ▪ Travel choice ▪ Strategic access ▪ Safety ▪ Resilience.
<p>Wellington Urban Growth Plan: Draft Spatial Plan</p>	<p>Invest in the city to deliver a:</p> <ul style="list-style-type: none"> ▪ Compact city ▪ Liveable city ▪ City set in nature.
<p>Wellington Urban Growth Plan: Planning for Growth</p>	<p>The plan deals with the major planning issues facing the city and region in the next two to three decades – including population growth, housing affordability, protecting the City’s biodiversity, transport, climate change and natural hazards.</p>
<p>Towards 2040: Smart Capital, 2011</p>	<p>Position Wellington as an internationally competitive city with a strong and diverse economy, a high quality of life and healthy communities. Seek to make Wellington:</p> <ul style="list-style-type: none"> ▪ A people-centred city ▪ A connected city ▪ An eco-city ▪ A dynamic central city. <p>The vision would see the central city as a vibrant and creative place offering the lifestyle, entertainment and amenities of a much bigger city. The central city will continue to drive the regional economy.</p>
<p>Te Atakura – First to Zero</p>	<p>In June 2019, Wellington City Council adopted Te Atakura – First to Zero, which is a blueprint to make Wellington City a zero carbon capital (net zero</p>



	<p>emissions) by 2050. This blueprint outlines key activities that can help reduce our emissions in four target areas: Transport, Building Energy and Urban Form, Advocacy, and the Council.</p>
<p>WCC Parking Policy (June 2020)</p>	<p>Provides a framework to guide future decision-making on the management of all Council-controlled parking spaces. This includes off-street parking and on-street parking, both free-of-charge (unrestricted) and those which incur a user-charge. The policy sets out objectives, high level principles, a parking space hierarchy (that prioritises the types of parking in different areas), area-based parking management guidance (that prioritises how we manage supply and demand). It also provides a new approach to setting parking fees and developing area-based parking management plans.</p>
<p>Low Carbon Capital – a Climate Change Action Plan for Wellington 2016–2018</p>	<p>Greening Wellington’s Growth by:</p> <ul style="list-style-type: none"> ▪ Maintaining the city’s liveability - the features that support our high quality of life and the city’s character ▪ Keep the city compact, walkable and supported by an efficient transport network ▪ Protect the city’s natural setting - nestled between our green hills and coastline, contributing to our distinctive character ▪ Make the city more resilient to natural hazards such as earthquakes and the effects of climate change. <p>Changing the way we move by:</p> <ul style="list-style-type: none"> ▪ Supporting car-share and electric vehicle charging ▪ Continuing to support car sharing ▪ Investing in walking, cycling and public transport modes.
<p>Let’s Get Wellington Moving Objectives</p>	<p>Revised objectives and proposed weightings were developed in June 2021, as follows:</p> <ul style="list-style-type: none"> ▪ Liveability – Enhances urban amenity and enables urban development outcomes (20%) ▪ Access – Provides more efficient and reliable access for users (15%) ▪ Carbon emissions and mode shift – Reduces carbon emissions and increases mode shift by reducing reliance on private vehicles (40%) ▪ Safety – Improves safety for all users (15%) ▪ Resilience – Is adaptable to disruptions and future uncertainty (10%)
<p>Innovating Streets – making safer streets for people (WCC)</p>	<p>Innovating Streets pilots are four of 70 throughout the country with the purpose of creating safer, healthier and more people friendly towns and cities. These projects will be done using tactical urbanism and are about co-designing quick, low-cost, scalable improvements that help to create more vibrant, people-friendly spaces in Wellington’s neighbourhoods. The funded Innovating Streets pilots in Wellington city are:</p> <ul style="list-style-type: none"> • Placemaking pop-ups in Newtown (along Riddiford Street between Mein and Rhodes streets, and on Hall Street), Te Aro (between Taranaki, Cuba Ghuznee and Abel Smith streets) and Allen Street (outside The Fringe Festival Box Office) • A safer connection for everyone in Wilson Street, Newtown between Constable Street and Riddiford Street • A safe cycling facility for people travelling on Brooklyn Road from Webb Street to Ohiro Road



2.5 Parties Involved in the Project

Table 2-4 summarises the main parties involved in the Thorndon Quay Hutt Road project and their strategic interest.

Table 2-4 Parties Involved in the Project and their Strategic Interest

Party	Strategic Interest
<p>Let's Get Wellington Moving</p>	<p>Let's Get Wellington Moving (LGWM) is a multi-decade programme of investment in Wellington's transport and urban development. It is a joint initiative between five partners:</p> <ul style="list-style-type: none"> ▪ Three government (Crown and local government) agencies: <ul style="list-style-type: none"> ▪ Wellington City Council (WCC) ▪ Greater Wellington Regional Council (GWRC) ▪ Waka Kotahi NZ Transport Agency ▪ Taranaki Whānui ki te Upoko o te Ika (represented by the Port Nicholson Block Settlement Trust) and ▪ Ngāti Toa (represented by Te Rūnanga o Toa Rangatira). <p>The LGWM Governance Reference Group provides a critical interface between the partners at the governance level and provides advice to the programme.</p> <p>The LGWM Partnership Board is made up from representatives of the three funding partners and is the single point of accountability and the main decision-making body for the programme.</p> <p>The Programme Director, appointed by the Partnership Board, is responsible for delivering the programme, The Programme Director is supported by the Programme Leadership Team who provide advice and guidance related to key programme decisions and overarching management.</p> <p>The vision for the LGWM Programme is for a great harbour city:</p> <ul style="list-style-type: none"> ▪ That is accessible to all ▪ With attractive places ▪ With shared streets ▪ Efficient local and regional journeys. <p>Realising this vision will involve moving more people with fewer vehicles.</p>
<p>Wellington City Council</p>	<p>WCC is the local authority responsible for Wellington City. Its purpose is to enable democratic local decision-making and action by, and on behalf of, communities. It seeks to promote the social, economic, environmental, and cultural well-being of people that live, work or visit Wellington now and in the future.</p> <p>WCC invests to make Wellington more resilient, vibrant and competitive, and makes sure residents continue to have a high quality of life.</p> <p>The strategy and vision for Wellington is built on its current strengths but also recognises the challenges the city faces now and over the medium to long term.</p> <p>The Council's four goals for Wellington are:</p> <ul style="list-style-type: none"> ▪ A people centred city ▪ A connected city ▪ An eco-city ▪ A dynamic central city.

Greater Wellington Regional Council	<p>GWRC is responsible for promoting Quality for Life by ensuring the environment of the Wellington Region is protected while meeting the economic, cultural and social needs of the community. One of its responsibilities is managing public transport services across the Wellington region, including arranging funding and contracts for service delivery. GWRC activities seek to work towards the following vision:</p> <ul style="list-style-type: none"> ▪ An extraordinary region ▪ Thriving environment ▪ Connected communities ▪ Resilient future.
Waka Kotahi	<p>Waka Kotahi is the crown entity responsible for planning and investing in the land transport system. It administers the National Land Transport Fund (NLTF). Their primary objective is to contribute to an effective, efficient, and safe land transport system in the public interest. Through its various functions, Waka Kotahi is responsible for delivering on the Government's Transport Sector Outcomes to create a transport system that:</p> <ul style="list-style-type: none"> ▪ Provides inclusive access ▪ Supports economic prosperity ▪ Is resilient and secure ▪ Provides environmental sustainability ▪ Supports healthy and safe people.
Mana Whenua	<p>Mana Whenua are a key project partner. They have historic and territorial rights over the land, and a special cultural and spiritual relationship with the environment. This is a matter of national importance under the Resource Management Act.</p> <p>An Iwi Partnerships Working Group has been established to help the programme appropriately consider Mana Whenua perspectives and support broader Iwi engagement.</p>

2.6 Mana Whenua Values

The following draft Mana Whenua values for the LGWM programme were used to guide the development of options considered.

2.6.1 Tahī – Whakapapa (A Sense of Place)

- Building works restore a healthy relationship with nature
- Finished projects tell the story of the place
- Native plantings
- Urban agriculture.

2.6.2 Rua - Wai-ora (Respect the Role of Water)

- Acknowledge the importance of water
- Resurrect the natural water courses
- Manage water run off to ensure only purest water flows to the harbour.

2.6.3 Toru - Pūngao-ora (Energy)

- Minimise energy use during construction
- Completed projects to aim to be energy neutral.



2.6.4 Whā - Hau-ora (Optimising Health and Wellbeing)

- Prior to construction minimise uncertainty by clear goals and timeline
- During construction minimise disturbance to neighbours
- Completed projects to use plantings and water flows to provide healthy environments.

2.6.5 Rima - Whakamahitanga (Use of Materials)

- Recycle the maximum of materials disposed of during construction
- Build with materials and methods that use the lowest energy possible
- Avoid toxic materials that may leach into air or ground water.

2.6.6 Ono – Manaakitanga (Support a Just and Equitable Society)

- Embody our values in these projects
- Work with locals to the extent possible
- Provide safe and inviting public spaces.

2.6.7 Whitu – Whakāhuatanga (Celebrate Beauty in Design)

- Design in a way that lifts the human spirit
- Incorporate public art and interpretation to tell the story of what has gone before.

2.6.8 Whakamatautautanga

- Monitoring.

DRAFT



3 Previous Stakeholder Engagement

Extensive engagement has been undertaken prior to and as part of developing the LGWM programme. The SSBC for the TQHR corridor has built on this, and the knowledge and relationships that have been developed.

This chapter provides a summary of the stakeholder and community engagement that has been undertaken up to and including May 2020, prior to and as part of developing the LGWM programme and to inform the option development process for the TQHR project. It includes analysis of the stakeholders who have an interest in the project and an explanation of the communication approaches and activities that have been employed to engage with them.

Stakeholder engagement undertaken in 2021 on the preferred TQHR option is summarised in Chapter 5.

The prime purpose of the consultation undertaken on the TQHR project is to enable the effective participation of individuals and communities in the decision-making process. This will enable elected representatives to make better-informed decisions on behalf of those councils they represent.

The principles guiding consultation processes set out in the Local Government Act 2002 are designed to ensure individuals and their communities have information about decisions, the opportunity to engage with their councils and make their views known.

There are six guiding principles set out in the Act:

- Councils must provide anyone who will or may be affected by the decision, or anyone who has an interest in the decision, with reasonable access to relevant information.
- These people should also be encouraged to express their views to council.
- People who are invited to present their views to council should be given clear information about the purpose of the consultation and the scope of the decisions being made.
- People who wish to present their views must be given reasonable opportunity to present them.
- Councils should receive these views with an open mind and give them due consideration when making a decision.
- The council should provide people presenting their views with information relevant to decisions and the reasons for them.

The Act also sets out processes for discussing concerns about a council with the Office of the Ombudsmen, the Office of the Auditor General or the Parliamentary Commissioner for the Environment.

3.1 2016 Engagement on the Hutt Road Shared Path

Public consultation on the recently constructed shared path on Hutt Road was held in March 2016. Two open days were held for people to come along and find out more. There were 991 submissions. Councillors heard 45 public oral submissions at the Transport and Urban Development Committee meeting on 5th May 2016.

Work on the first phase of upgrading the shared path started in October 2016, starting with replacing street lighting on the western side of Hutt Road. Preliminary construction on the new paths got under way in April 2017 and continued until mid-2018 as far as the Tinakori Road intersection. Widening the bridge over Kaiwharawhara Stream occurred in late 2019.



3.2 2017 and 2018 Engagement on Interim Improvements to Thorndon Quay

Engagement was undertaken by WCC in February 2017 with the Thorndon Quay community, regarding proposals for roadside bike lanes and associated changes to Thorndon Quay. This engagement consisted of a number of letter drops to businesses, open days and workshops, as well as consultation on some proposed interim improvements between Davis Street and Mulgrave Street. WCC received 316 submissions to this consultation, the majority of which came from people who regularly travel along Thorndon Quay.

Those who supported the proposal expressed they would like safety issues due to angle parking to be addressed. Those who did not support the proposal mostly had comments about the removal of parking.

55% of submitters who supported the proposal with changes, commented on extending the bike lanes north and making a better separation between cyclists and people in cars. 68% of submissions rated this bike connection as important or very important.

The top comment from people who thought the connection was of 'high importance', related to the safety of cyclists. The top comments from those that thought the connection was of low importance believed there were higher priorities.

An interim improvement for bikes was approved by Wellington City Councillors in 2018. This interim improvement would have converted the angle parking to parallel parking and marked on-road bike lanes between Davis Street and Mulgrave Street in order to improve the safety of this section of Thorndon Quay. It was planned this change would be made in conjunction with routine road sealing work at the end of 2018, however due to budget constraints the road sealing change was not made.

3.3 2020 Engagement on the Emerging TQHR Project Options

A stakeholder briefing on the TQHR project was held on 28th May 2020. At the time of preparing the long list of options, New Zealand had just entered into a Level 2 alert in response to the Covid-19 Pandemic. Prior to this, New Zealand had been in alert Levels 3 and 4 which prohibited normal economic activities, such as business operations, except for essential services such as supermarkets and pharmacies. The majority of the public were requested to stay at home and not to travel. As a result of the restrictions on movement and activity, engagement with stakeholder groups was limited.

Stakeholder questions and comments were collated for the project team to consider for the development of the proposal. Feedback was provided on key aspects, such as different modes and priorities.

Wider public engagement was undertaken in May and June 2020 using the online mapping tool, Social Pinpoint. Most of the feedback we received was from people who travel through the Hutt Road and Thorndon Quay area, with less from people who travel to work or have a business on Thorndon Quay or Hutt Road. Bus operators and bus drivers also gave their feedback.

648 online comments were received from 158 people, and five contact form submissions. There were around 30 comments posted on Facebook. Feedback encompassed a wide range of aspects along both Thorndon Quay and Hutt Road and has been used to inform and support the development of proposed long-term options.



The main findings of the consultation was a desire for:

- Increased safety for everyone
- Improved bus priority and reliability
- Better walking and cycling facilities
- A more attractive street environment.

Further details of the stakeholder and public issues and comments from the previous studies relating to this corridor are summarised in Table 3-1.

Table 3-1 High Level Overview of Previous Engagement Comments

Issue	Description
Facilities (or lack of) for cyclists	<ul style="list-style-type: none"> ▪ Lack of dedicated facilities on Thorndon Quay ▪ Restricted space - cyclists forced to use traffic lane when parked cars are present ▪ Existing high volumes of cyclists is expected to grow following the completion of the Ngā Ūranga ki Pito-One section of Te Ara Tupua ▪ Cyclist safety ▪ Connection to other cycle paths.
Slow and unpredictable bus travel times	<ul style="list-style-type: none"> ▪ Mixing with general traffic at signalised intersections ▪ Stop/ start delays at zebra crossings ▪ Pulling in/ out of bus stops which sit outside the traffic lane ▪ Side friction caused by turning traffic and parked cars.
Facilities (or lack of) for Pedestrians	<ul style="list-style-type: none"> ▪ High volumes on some sections and large numbers crossing Thorndon Quay ▪ Lack of crossing facilities for pedestrian north of Bordeaux bakery ▪ Anticipated increased pedestrian demands ▪ Some crossing types/ forms not suitable for their location or volumes of pedestrians ▪ Lack of shade and shelter.
Road Safety	<ul style="list-style-type: none"> ▪ High speeds and high traffic volumes on Hutt Road ▪ Cars failing to stop at red lights ▪ Lack of pedestrian crossings.
Parking	<ul style="list-style-type: none"> ▪ Availability of parks for businesses (incorrect timeframes) ▪ Existing angle parks too steep/ hazardous.
Placemaking	<ul style="list-style-type: none"> ▪ Lack of green spaces ▪ Lack of trees/ shrubbery ▪ Lack of shelter ▪ Too few/ No rubbish bins ▪ Dark (feels unsafe) ▪ Lack of public toilets ▪ Lack of art/ sculptures ▪ Lacking identity and connection to history.

4 Case for Change

This chapter summarises the strategic case for investment, including the problems to be addressed, the anticipated benefits of addressing the problems and the investment objectives. This builds on the Problem Definition and Case for Change Report prepared by LGWM in October 2019, and feedback from stakeholder engagement. Further details of the problems, benefits and objectives are contained in the Strategic Case report.

4.1 Problem Statement

A series of problem statements were developed with project team members, OIMs and TWG representatives at an Investment Logic Mapping (ILM) workshop held on 19 May 2020. These problem statements are summarised below, with approximate weightings associated with each problem statement.

PROBLEM ONE	Unreliable bus travel times result in a poor customer experience for existing and potential bus users which reduces the attractiveness of and ability to grow travel by bus.	35%
PROBLEM TWO	The current state of cycling facilities results in conflict between users, increases risk and limits cycling attractiveness for increasing volumes of cyclists.	30%
PROBLEM THREE	Poor quality of the street environment creates an unpleasant experience for a growing volume of people reducing its attractiveness to walk and spend time in the area.	20%
PROBLEM FOUR	High and growing traffic volumes combined with high speeds increases the likelihood and severity of crashes on Hutt Road.	15%

The current and future problems to be addressed are summarised in Figures 4-1 and 4-2.

Figure 4-1 Current Problems



Figure 4-2 Future (2026) Problems if we Do Nothing



4.2 Evidence to Support Problem Statement One

Unreliable bus travel times result in a poor customer experience for existing and potential bus users which reduces the attractiveness of and ability to grow travel by bus (35%)

4.2.1 The Cause and Effect of the Problem

PS1 - Cause and Effect

The **cause** of this problem is defined as buses being impeded by other traffic using the same corridor and intersection or crossing delay. The **effect** of this is a poorly performing bus service especially in the southbound direction during the morning peak. This makes it unattractive for users and limits the ability to grow bus travel.

4.2.2 Evidence of Traffic Congestion

Buses are often stuck behind cars on the TQHR corridor, making travelling by bus slow and unreliable. For the majority of the TQHR corridor, buses mix with general traffic and are subject to the same delays and congestion that affects general traffic. The majority of delays are associated with traffic congestion at intersections, crossings and parking, and at bus stops.

In the morning peak a clearway operates for southbound traffic, and there are often no significant delays for buses entering the CBD between bus stops, as there is generally no on-street car



parking impeding bus movements. During other times of the day, buses are delayed by cars manoeuvring into and out of parking spaces. When this occurs, buses can either wait in the lane or overtake the parking car in the opposing lane / median. The ability to overtake is dependent on the road width and the traffic volume in the opposing lane.

Between 7am and 9am on weekdays, it currently takes about 13 minutes to travel by bus along the approximately 5km length of Hutt Road and Thorndon Quay from Ngauranga/Jarden Mile to Wellington railway station. Transport modelling indicated that travel by bus is expected to take up to 14 minutes by 2026, if no improvements are made. Travel times are expected to increase over a longer peak period, as demand spreads at peak times.

There will be increased travel demand as population grows. As traffic congestion increases, bus journeys will be less reliable if greater priority is not provided for buses.

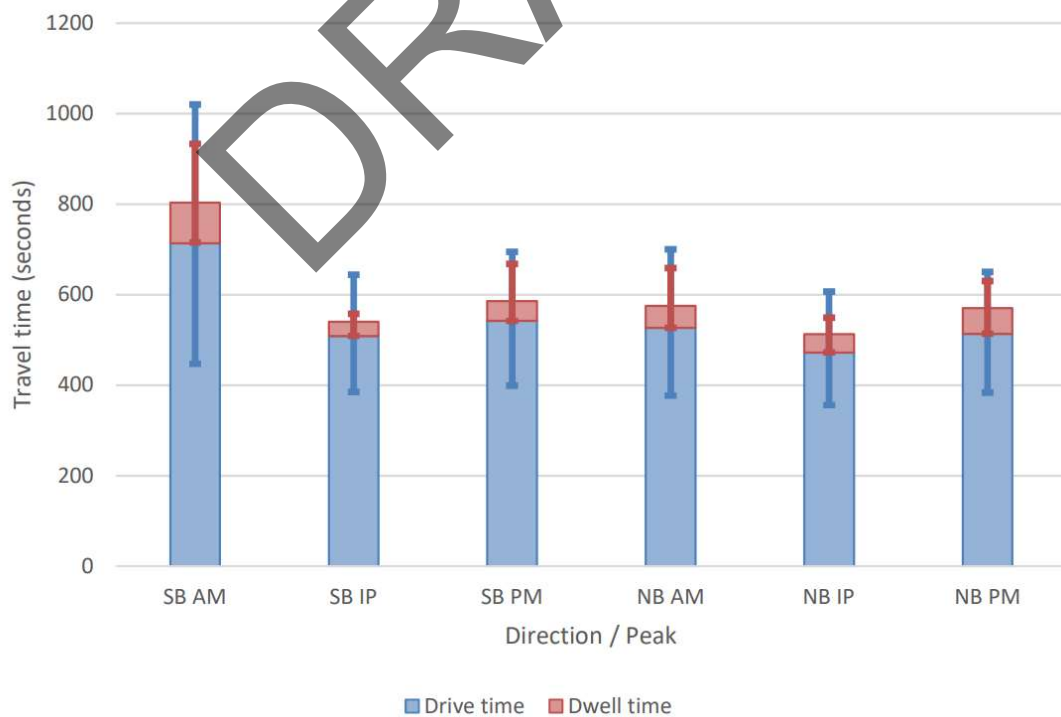
Further information on average traffic volumes, and general traffic congestion, on the corridor are provided in the Strategic Case.

4.2.3 Evidence of Variability in Bus Travel Times

Figure 4-3 shows the variability in overall bus travel time on weekdays along the TQHR corridor. These travel times include dwell time and are shown by peak/off-peak and by direction, as represented by the 15th and 85th percentile travel times. It shows that the variability in bus travel times is greatest in the morning peak period for southbound bus movements.

The majority of bus travel time is made up of drive time which includes time taken to decelerate to and accelerate from the bus stops, as opposed to dwell time at bus stops. There is significant variability in bus stop dwell times, as explained below.

Figure 4-3 Bus Travel Times by Time of Day (average with 15th and 85th Percentiles)



4.2.4 Evidence of Delays at Bus Stops

The majority of bus stops on the TQHR corridor are recessed out of the traffic lane, with substandard entry and, or exit tapers, which have the potential for delays to occur. This is particularly a problem for buses travelling southbound during the morning (AM) peak period. Delays are particularly acute at stops with angle parking adjacent, where the buses are recessed up to 5.5m instead of the typical 2.1m.

Bus stop lengths are also substandard at several locations, for example at the southbound bus stop at Capital Gateway, which is one of the busiest stops on the corridor, has a recessed length of less than 20m compared with a desirable 39m for a single bay bus stop.

Bus stop catchment areas overlap in some cases also, giving potential to rationalise the number of stops provided and therefore potentially help speed up bus services and make them less prone to delays at stops.

In some locations, bus stops are located prior to pedestrian crossings, so passengers who alight from the bus and who want to cross the main road will cross in front of the bus and hence can delay its onward journey.

Further details of the delays experienced by buses at bus stops is contained in Appendix C.

4.3 Evidence to Support Problem Statement Two

The current state of cycling facilities results in conflict between users, increases risk and limits cycling attractiveness for increasing volumes of cyclists (30%)

4.3.1 The Cause and Effect of the Problem

PS2 - Cause and Effect

The **cause** of this problem is defined as a growing number of cyclists travelling along the corridor without space or suitable facilities to cater for safe cycling. The **effect** of this is an increased risk to cyclists of coming into conflict with motor vehicles and limiting the uptake of cycling as a mode of travel on this corridor.

4.3.2 Evidence of Poor Cycle Facilities

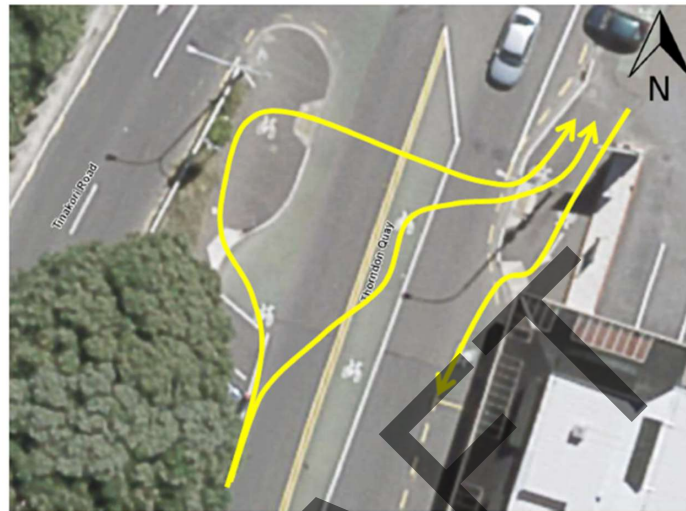
There is no existing cycle path on Thorndon Quay. Although there is a dedicated two-way bike path along the majority of Hutt Road, it is not complete and provides a sub-standard level of service for cycle users (further information provided in the Strategic Case). People who may cycle into the city find their options are affected and limited due to these issues. A review of CAS data indicates suggests that there are many cycle crashes that are not captured via police records.

In the morning peak period, a clearway for southbound traffic result in reduced conflict between cyclists and parked cars compared to at other times of the day when cyclists are often forced to share space with general traffic. This has multiple effects, the first being that cyclists are at risk of collision with passing traffic, car parking and vehicle accesses. The second effect is that cyclists in the traffic lane delay through traffic, including buses.

Access from on-road cycling along Thorndon Quay to the cycle path on Hutt Road, is challenging for cyclists travelling northbound. These cyclists must find a gap in the northbound traffic flow to

wait in the median before cycling across the southbound lane to join the cycle path. The current arrangement is shown in Figure 4-4.

Figure 4-4 Southern Access to the Hutt Road Cycle Path at Tinakori Road/Hutt Road Intersection



Cyclists on Thorndon Quay have to interact with vehicle traffic at intersections along the length of the road. Cyclists (and vehicles) have priority over side road traffic at all intersections except for the signalised intersections south of Mulgrave Street where they have cycle lanes and advanced stop boxes.

4.3.3 Evidence of Conflicts between Cyclists and Other Road Users

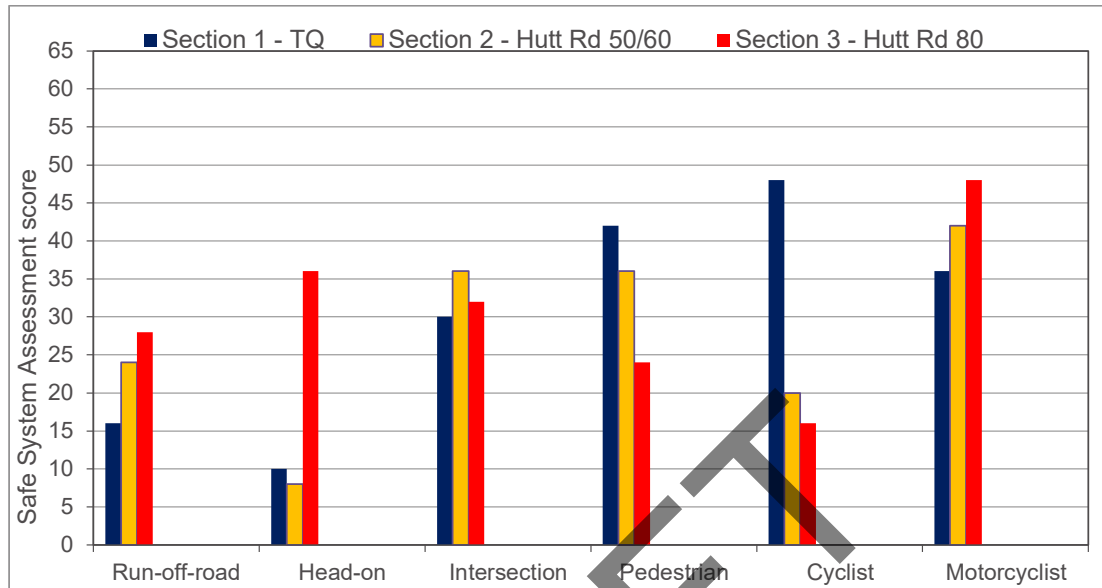
Analysis of cycle injury crash data along the corridor for the ten-year crash period (2010-2019 inclusive) indicated that:

- Cyclists are the most likely to be involved in an injury crash on the corridor, making up 45% of injury crashes (60 out of 133 crashes) and 50% of serious injuries (14/28)
- Along Thorndon Quay the most likely cause of a cyclist injury crash is the interaction with a parked or parking vehicle (26 out of 35 crashes) - this includes opening doors for parallel parks, entering/ exiting angled parks and u-turning whilst looking for a parking space
- The most likely cause of cyclist injury crashes on Hutt Road is due to a collision with vehicles at business access point across the shared path (19 out of 43 crashes)
- The most common time for a cyclist injury crash is during the morning peak period and typically involves people in the 40 to 49 age group (i.e. adult commuters).

A Safe System Assessment Framework (SSAF) was also undertaken for the corridor (refer to Appendix D), as summarised in Figure 4-5. This indicated that the safety risk for cyclists is the highest of any user group on Thorndon Quay. This is due to the lack of a separated facility, the busy nature of the road environment, poor connections to adjacent facilities, the proximity to on-street parking and the speed environment.

It is noted that most cycle crashes are not attended by Police and are not recorded in CAS.

Figure 4-5 Safe System Assessment Framework



4.3.4 Evidence of Poor Levels of Service for Cyclists

The level of service (LOS) for cyclists on the TQHR corridor was calculated using the Danish Roadway Segment method¹¹. This indicates that cyclists currently have an average to poor LOS (LOS D to F) on the different sections of Thorndon Quay and a poor LOS (F) on the on-road section of Hutt Road. The cycle path section of Hutt Road has an adequate LOS (A).

It should be noted that the Danish method does not take into account conflicts between cyclists and vehicles caused by intersections, accesses or angle parking. These are key concerns for cyclists on Thorndon Quay and Hutt Road.

4.3.5 Evidence of Deficiencies in the Hutt Road Cycleway

A number of safety issues were identified in a safety audit undertaken of the recently opened Hutt Road cycleway. The more serious issues identified from the audit relate to access/egress to businesses along the south-eastern side of the corridor. These predominantly identified issues with vulnerable users on the shared use facility and in particular for cyclists.

In relation to accesses generally, the safety audit noted that “a high level of cyclist/ vehicle and pedestrian/ vehicle conflicts were observed at major access points. In most situations, it was the exiting driver not looking for cyclists, and pulling directly in front of the vulnerable user”. The higher speed of cyclists was also observed to contribute to these conflicts.

When Te Ara Tupua is completed, it is expected there will be at least three times as many cyclists on the TQHR corridor. Growth in cycling demand will therefore not be supported by the current infrastructure.

¹¹ Trafitec Danish Roadway Segment Cycling LOS (2007)

4.4 Evidence to Support Problem Statement Three

Poor quality of the street environment creates an unpleasant experience for a growing volume of people reducing its attractiveness to walk and spend time in the area (20%)

4.4.1 The Cause and Effect of the Problem

The cause of this problem is defined as a lack of suitable pedestrian facilities on Thorndon Quay and Hutt Road.

The effect of this is an increased safety risk to pedestrians on Hutt Road and Thorndon Quay in particular, south of Moore Street and north of Bordeaux Bakery. There is a lack of shade and shelter, resulting in an unpleasant environment for pedestrians. This limits the attractiveness of walking as a travel choice, and is likely to be a deterrent to the predicted large increase in future pedestrian demand.

PS3 - Cause and Effect

The **cause** of this problem is defined as the poor quality of the street environment which does not make Thorndon Quay or Hutt Road an attractive or pleasant place to walk or spend time in. The **effect** of this is an increased safety risk to a growing number of pedestrians on Hutt Road and Thorndon Quay and a lack of amenity is limiting the attractiveness of walking as a mode of travel.

4.4.2 Evidence from Healthy Streets Assessment

A Healthy Streets Assessment was undertaken for the corridor and is included in the Problem Definition and Case for Change Report (October 2019). This showed that Hutt Road scored well against the metrics around the quality and separation of facilities for pedestrians and cyclists. However, did not score as well against the metrics associated with vehicle speeds, volumes and heavy vehicle proportions.

Thorndon Quay's index is very similar to that calculated for Hutt Road, with no clear strengths and the lack of shade and shelter/ things to see and do are identified weaknesses. Thorndon Quay scored well against the metrics around the quality and separation of facilities for pedestrians but did not score as well against the metrics associated with vehicle speeds, volumes, heavy vehicle proportions and cyclist separation.

4.4.3 Evidence of Poor Level of Service for Pedestrians at Intersections

The existing footpath widths and street environment on Thorndon Quay do not make it very attractive to walk, shop or spend time. Pedestrian demand is expected to increase in the future, as is the use of other mobility options such as scooters. The expected increased demand for walking will not be supported by the current infrastructure.

An analysis of pedestrian movements at signalised intersections along the corridor included in the Problem Definition and Case for Change Report (October 2019), indicated that they have small green time ratios and high delays resulting in average to poor level of service. Particular areas of concern for pedestrians are on Hutt Road, where traffic speeds are higher and there are unsuitable or a complete lack of crossing facilities. There is also a large separation between formal crossing facilities, particularly north of Bordeaux Bakery.

4.4.4 Evidence of Poor Pedestrian Safety

An analysis of crash data for pedestrians in the ten-year period from 2010 to 2019 indicated:

- Pedestrians make up a low number of injury crashes, being involved in 9% of injury crashes (twelve out of 133) and 11% of serious injuries (three out of 28)
- Of the twelve crashes, eight were located in Thorndon Quay and four were along Hutt Road
- In the Thorndon Quay section, pedestrian crashes occurred at the Mulgrave intersection, Moore Street zebra crossing and south of Tinakori Road
- Two of the four pedestrian crashes on Hutt Road occurred at the Rangiora Avenue zebra crossing

The SSAF showed that for pedestrians the safety risk is higher than vehicles in the Thorndon Quay section. The likelihood and severity of a crash along the corridor is similar. However, the provision of the shared path and the reduced number of pedestrians north, towards Jarden Mile along Hutt Road reduces the safety risk.

4.5 Evidence to Support Problem Statement Four

High and growing traffic volumes combined with high speeds increases the likelihood and severity of crashes on Hutt Road (15%)

4.5.1 The Cause and Effect of the Problem

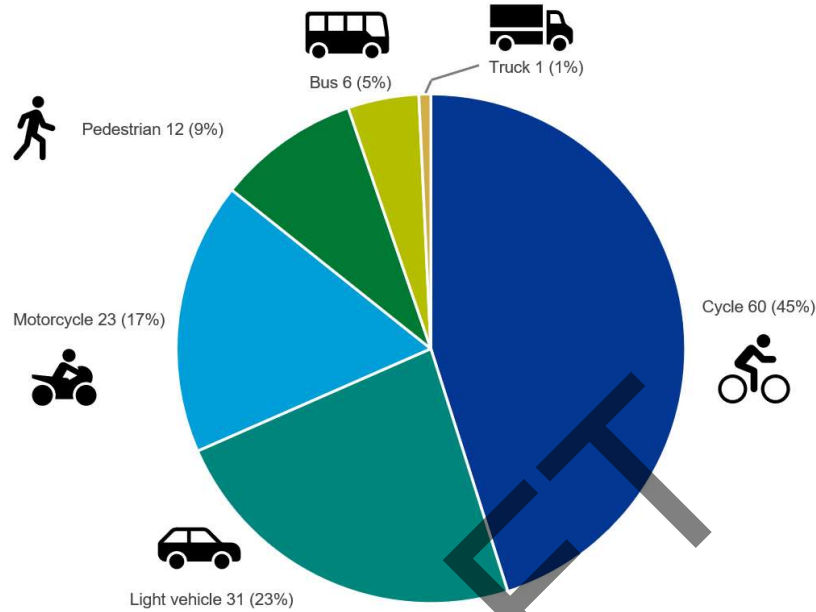
PS4 - Cause and Effect

The **cause** of this problem is high and increasing traffic volumes on a section of high speed corridor and the high number of vehicle crossing movements. The **effect** of this is an increased safety risk and crash severity for all road users on Hutt Road.

4.5.2 Road Safety Evidence

Over the past ten years, from 2010 to 2019 inclusive, there were 133 injury crashes recorded by the Police along Hutt Road and Thorndon Quay. Of these crashes, 60 involved cyclists (45%), twelve involved pedestrians (9%) while 23 involved motorcyclists (17%), as depicted in Figure 4-6. Twenty eight of the crashes resulted in serious injuries.

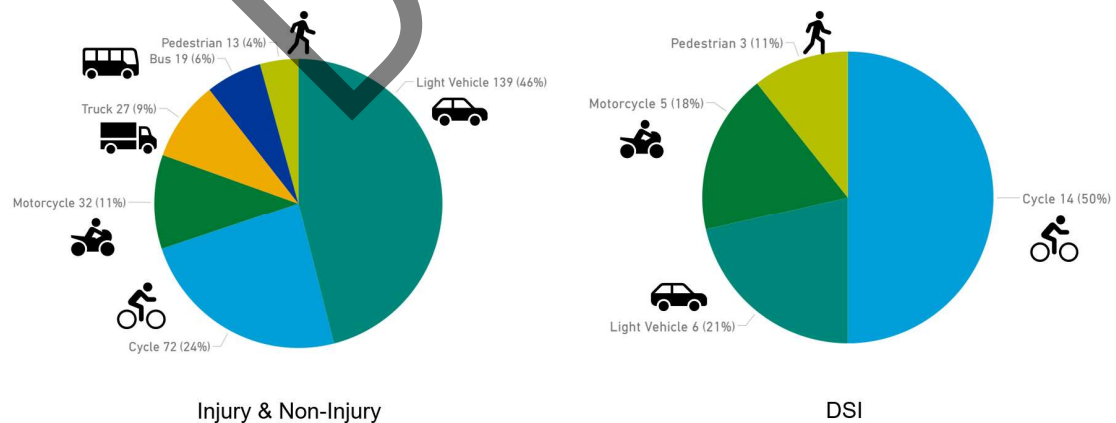
Figure 4-6 Crashes by Mode (2010-2019 inclusive)



Over 70% of crashes causing injuries to people cycling on Thorndon Quay are from people opening car doors into the traffic lane, drivers turning into or reversing out of angle parking and u-turning while looking for a car park.

The number of injury and non-injury, and deaths and serious injuries (DSIs) recorded on the TQHR corridor in the ten-year period is summarised in Figure 4-7. Vulnerable users account for 79% of all DSIs.

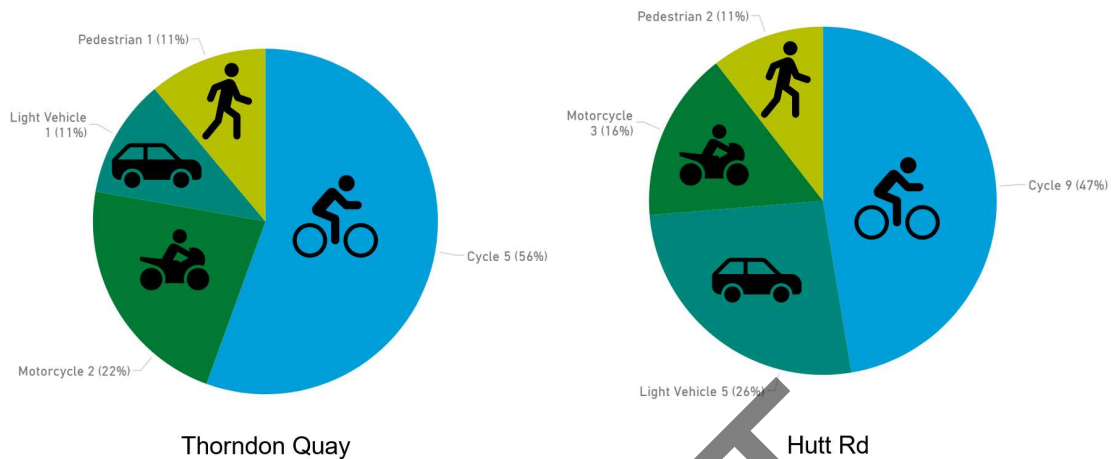
Figure 4-7 All Crashes vs DSI by Mode (Ten Year Period for Thorndon Quay and Hutt Road)



Analysis of crash data indicates that vehicles are the second likely (behind cyclists) to be involved in an injury crash. Vehicle injury crashes attribute to 23% of injury crashes (31 out of 133) and 21% of serious injuries (six out of 28) in the past ten-year period from 2010 to 2019.

The number of DSIs by mode for Thorndon Quay and Hutt Road in the ten-year period is summarised in Figure 4-8. The split of DSIs is similar on Thorndon Quay to Hutt Road.

Figure 4-8 DSIs by Mode (Ten Year Period for Thorndon Quay and Hutt Road)



In general, the two main crash types which both occur near intersections are rear end/ obstruction crashes and crossing/ turning crashes. Hutt Road makes up most of the injury crashes (22 out of 31) where the speed environment is higher, and these injury crashes are mainly located at the complex Kaiwharawhara Road and Jarden Mile intersection.

Motorcyclists are the third most likely to be involved in an injury crash, consisting of 17% of injury crashes (23 out of 133) and 18% of serious injuries (five out of 28). Along Hutt Road the crashes involving motorcycles were concentrated at intersections, being mainly rear end/ obstruction crashes and crossing/ turning crashes.

There were a low number of bus crashes (six out of 133) with no serious injuries. These mostly occur at the southern end of Thorndon Quay around Mulgrave Street and in the northern section of Hutt Road.

Along Hutt Road the most likely cause of a cyclists' injury crash is interacting with vehicles at an access point across the shared path (19 out of 43 cyclist injury crashes). Along this shared path there are numerous accesses for businesses.

Of the twelve crashes involving pedestrians, eight occurred along Thorndon Quay and four along Hutt Road. In the Thorndon Quay section, the pedestrian crashes occurred at the Mulgrave intersection, Moore Street zebra crossing and south of Tinakori Road. In the Hutt Road section, two crashes occurred at the Rangiora Avenue zebra crossing.

The most common crash type recorded for cyclists and motorcyclists combined was due to crossing/ turning at intersections or accesses. There were a total number of 22 crashes of this type. Of these crashes, 20 of them involved motor vehicles either striking vulnerable users or being struck by them, and the remaining two crashes were due to cyclists avoiding being hit by a motor vehicle.

Apart from these two crashes, 20 crashes happened at the intersections/ accessways along Hutt Road, with three crash clusters identified at the accessways of Caltex, Spotlight and School Road/ Hutt Road intersection. There were three cyclist crashes at the Caltex accessways, with two of them occurring before the cycleway improvement and one during the cycleway upgrade construction.

An analysis of CAS shows that, over the 10-year period, there appears to be a rising trend in all injury crashes as well as for cycle and motorcycle crashes, as shown in Figure 4-9 (for TQHR, Hutt

Road and Thorndon Quay respectively). While the number of cycling and motorcycling crashes appears to be increasing, the sample size is relatively small and so caution should be given to drawing much conclusion from this. In addition, there has been ongoing cycling improvements during this time as well as an increase in cyclists which may affect future crash occurrence. However, at the very least, an on-going issue involving these users is apparent.

The differential between ACC claim figures and cycle crashes recorded within CAS suggests that there are a considerable number of crashes that are not reported to the police. It is also noted that as Hutt Road and Thorndon Quay are used as an emergency detour when SH1 is closed or delays occur on it, this could have a major impact on the safety along this route, particular for vulnerable road users.

Figure 4-9 Ten Year Crash Trend





4.5.3 Evidence from Safe System Assessment Framework

The SSAF analysis indicated that the key safety risks are at intersections. This is due to the frequency, complexity, speed environment and intersection form, as well as a high head on crash risk in the 80km/h section of Hutt Road.

The SSAF also showed that for pedestrians, the safety risk is higher than vehicles in the Thorndon Quay section. Along the corridor the likelihood and severity of a crash is similar, but the provision of the shared path, and the reduced pedestrian demand, as you move north towards Jarden Mile along Hutt Road, reduce the crash risk.

The SSAF indicated that motorcyclists have a similarly high safety risk level, with slight increases in risk as the speed environment increases.

4.6 Summary of the Evidence Base

The evidence base gathered to support the problems this SSBC seeks to address is summarised in Table 4-1.

Table 4-1 Summary of Evidence Base

Problem	Cause and Effect	Key Evidence
1: Unreliable bus travel times result in a poor customer experience for existing and potential bus users which reduces the attractiveness of and ability to grow travel by bus	Cause: Buses are impeded by other traffic using the same corridor and intersection or crossing delay	Overall, the level of service for buses is generally poor. Potential issues/ findings highlighted by the analysis include: <ul style="list-style-type: none"> ■ Relatively high growth in passenger demands ■ High travel times and variability, particularly in the morning peak period (southbound). Key sources of delay include: <ul style="list-style-type: none"> - Signalised intersections - Pedestrian zebra crossings - Bus stop spacing - Parking - Bus stop congestion (includes re-entry delays and delays associated with sub-standard stop layout).
	Effect: a poorly performing bus service that often is running late, especially in the southbound direction during the morning peak. This makes it unattractive for users	<ul style="list-style-type: none"> ■ Evidence is strong regarding the length of time bus services take to negotiate the corridor in the morning peak period.
2: The current state of cycling facilities results in conflict between users, increases risk and limits cycling attractiveness for increasing volumes of cyclists	Cause: a growing number of cyclists travelling along the corridor without space or suitable facilities to cater for safe cycling.	<ul style="list-style-type: none"> ■ High growth in cycling demands. ■ Lack of road space and route continuity along Thorndon Quay section of the route.
	Effect: Increased risk to cyclists of coming into conflict with motor vehicles and limits the uptake of cycling as a mode of travel on this corridor.	<ul style="list-style-type: none"> ■ The safety risk for cyclists is the highest of any user group (in the Thorndon Quay section). This is due to the non-separated facility (no shared path), the busy nature of the road environment, poor connections to adjacent facilities, the proximity to on-street parking and the speed environment (greater than 30km/h).
3: Poor quality of the street	Cause: A lack of suitable or inappropriate pedestrian facilities	<ul style="list-style-type: none"> ■ Pedestrian activity is fairly low along the whole corridor, but trending upwards.

environment creates an unpleasant experience for a growing volume of people reducing its attractiveness to walk and spend time in the area	on Thorndon Quay and Hutt Road.	<ul style="list-style-type: none"> There are pockets or clusters of pedestrian activity along the corridor either at crossing points, bus stops or in retail/commercial areas which are not well catered for. High Speed and traffic volumes on some sections of Hutt Road Lack of crossing points north of Thorndon Quay.
	Effect: An increased safety risk to pedestrians on Hutt Road and Thorndon Quay (south of Moore Street and north of Bordeaux Bakery) and a lack of shade and shelter and things to see and do is limiting the attractiveness of walking as a mode of travel.	<ul style="list-style-type: none"> Poor Healthy Streets Scores due to the lack of shelter and shade and things to see and do. Analysis of pedestrian movements at signalised intersection along the corridor indicate they an average to poor (LOS D-E) performance. Particular areas of concern for pedestrians are on Hutt Road where speeds are higher and there are unsuitable or a complete lack of crossing facilities. Pedestrians make up a low number of injury crashes, being involved in 9% of injury crashes and 11% of serious injuries. Of the twelve crashes, eight were located in Thorndon Quay and four were along Hutt Road. The SSAF shows that for pedestrians the safety risk is higher than vehicles in the Thorndon Quay section. Along the corridor the likelihood and severity of a crash is similar, but the provision of the shared path and the reduced number of pedestrians as you move north towards Jarden Mile along Hutt Road decrease the risk.
4: High and growing traffic volumes combined with high speeds increases the likelihood and severity of crashes on Hutt Road	Cause: High traffic flows and high speeds on Hutt Road	<ul style="list-style-type: none"> The posted speed on Hutt Road is 50 km/h from the intersection of Thorndon Quay and Hutt Road to the intersection of Aotea Quay and Hutt Road, 60 km/h to the intersection of Onslow Road and Hutt Road and 80 km/h for the rest of the section to the Jarden Mile intersection.
	Effect: Increased safety risk and crash severity for all road users.	<ul style="list-style-type: none"> The SSAF highlighted that the key safety risks are located at intersections due to the frequency, complexity, speed environment and intersection form, as well as a high head on crash risk in the 80km/h section of Hutt Road given the limited separation.

4.7 Benefits of Investment

At the workshop meeting held on 19 May 2020, and at subsequent stakeholder engagement sessions, the potential benefits of successively investing in the project were identified, developed and agreed, together with weightings for each benefit statement:

- More reliable and attractive bus journeys between Ngauranga and the CBD (30%)
- Increase the mode share of buses and active modes travelling along Hutt Road and Thorndon Quay (30%)
- Improve amenity and place value of Thorndon Quay (20%)
- Improve vulnerable road user safety on Thorndon Quay and Hutt Road (20%).

4.8 Investment Logic Map

An investment logic map showing how the problem and benefits relate to each other, the investment response and measures which could be used to measure the response, is summarised in an Investment Logic Map (ILM). This is shown in Figure 4-10.

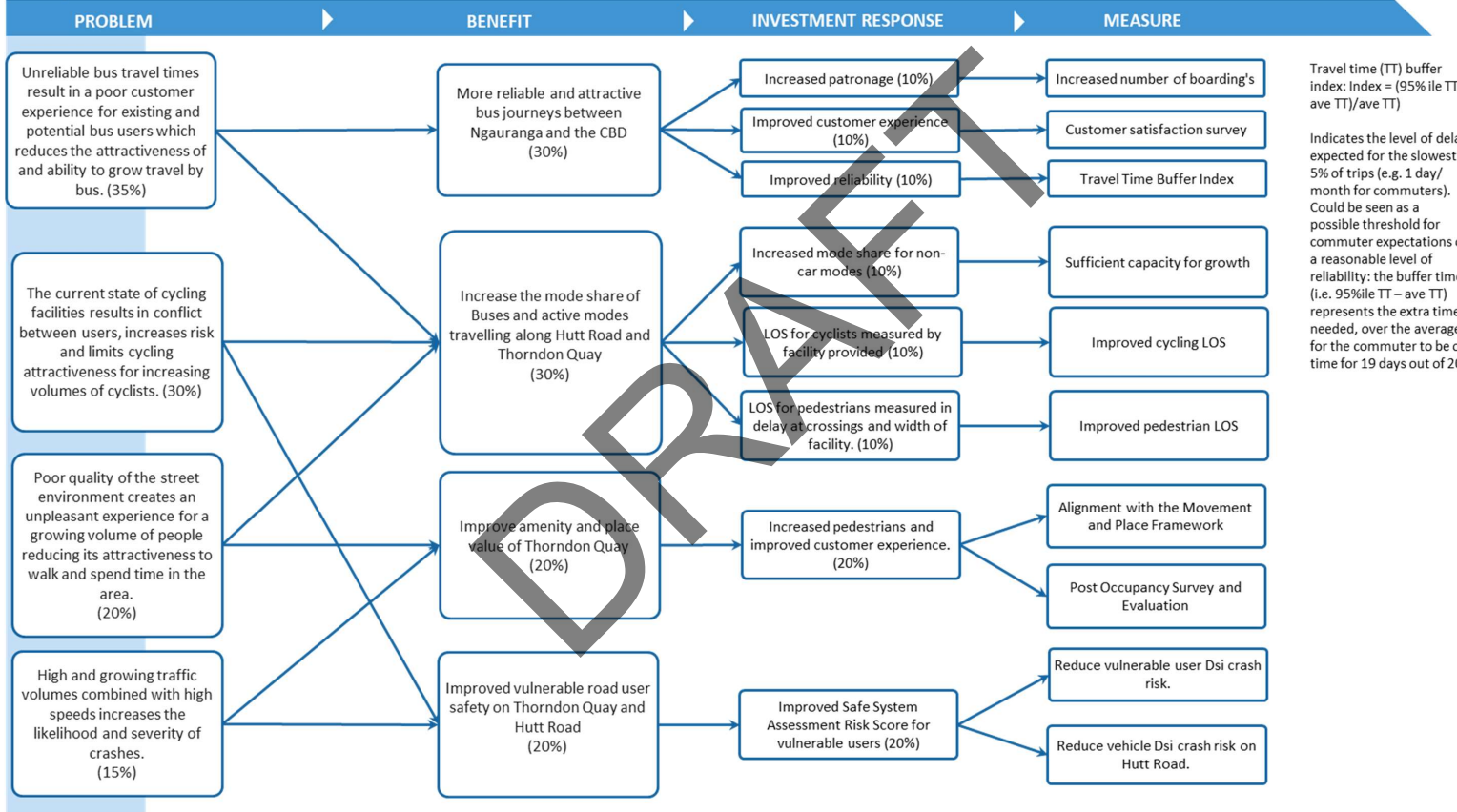


Figure 4-10 Investment Logic Map

Thorndon Quay Hutt Road

Let's Get Wellington Moving

INVESTMENT LOGIC MAP
Activity



Travel time (TT) buffer index: $Index = (95\%ile\ TT - ave\ TT) / ave\ TT$

Indicates the level of delay expected for the slowest 5% of trips (e.g. 1 day/month for commuters). Could be seen as a possible threshold for commuter expectations of a reasonable level of reliability; the buffer time (i.e. $95\%ile\ TT - ave\ TT$) represents the extra time needed, over the average, for the commuter to be on time for 19 days out of 20



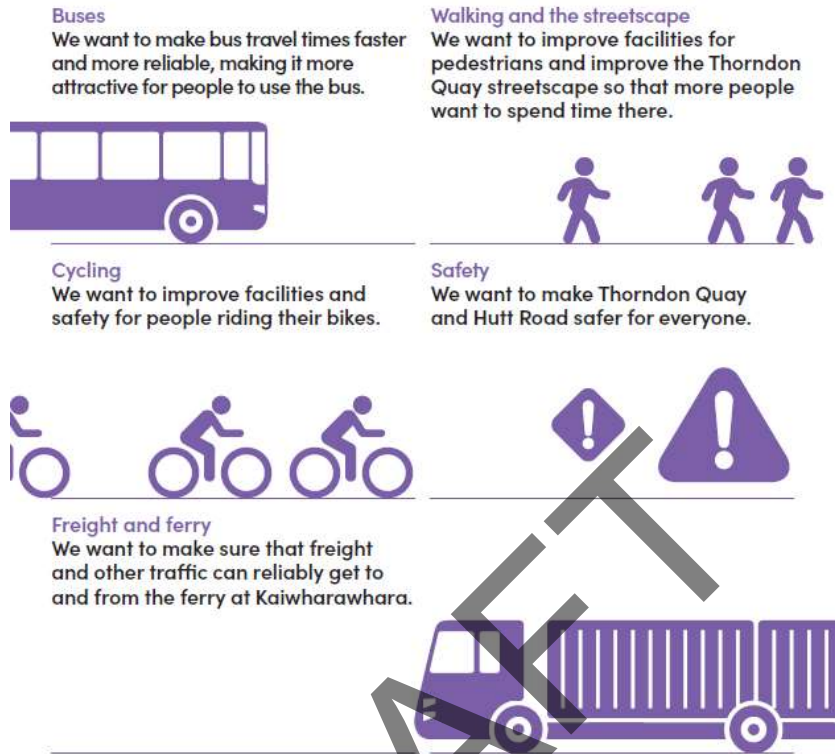
4.9 Investment Objectives

Following the definition of the problem statements and benefits, and the development of an ILM, investment objectives for this SSBC were defined. An additional objective related to maintaining access to the ferry terminal was added in response to proposals for bus priority measures being developed for Hutt Road, and the need to avoid adverse impacts of this on truck movements. The Strategic Case has more information on this.

The final Investment Objective are listed below and summarised in the graphics below.

INVESTMENT OBJECTIVE ONE
Improve Level of Service for bus users including improved access, journey times and reliability. Provide sufficient capacity for growth in public transport
INVESTMENT OBJECTIVE TWO
Improve Level of Service, and reduce the safety risk, for people walking and cycling along and across Thorndon Quay and Hutt Road
INVESTMENT OBJECTIVE THREE
Reduce the frequency and severity of crashes
INVESTMENT OBJECTIVE FOUR
Improve the amenity of Thorndon Quay to support the current and future place aspirations for the corridor/area
INVESTMENT OBJECTIVE FIVE
Maintain similar access for people and freight to the ferry terminal

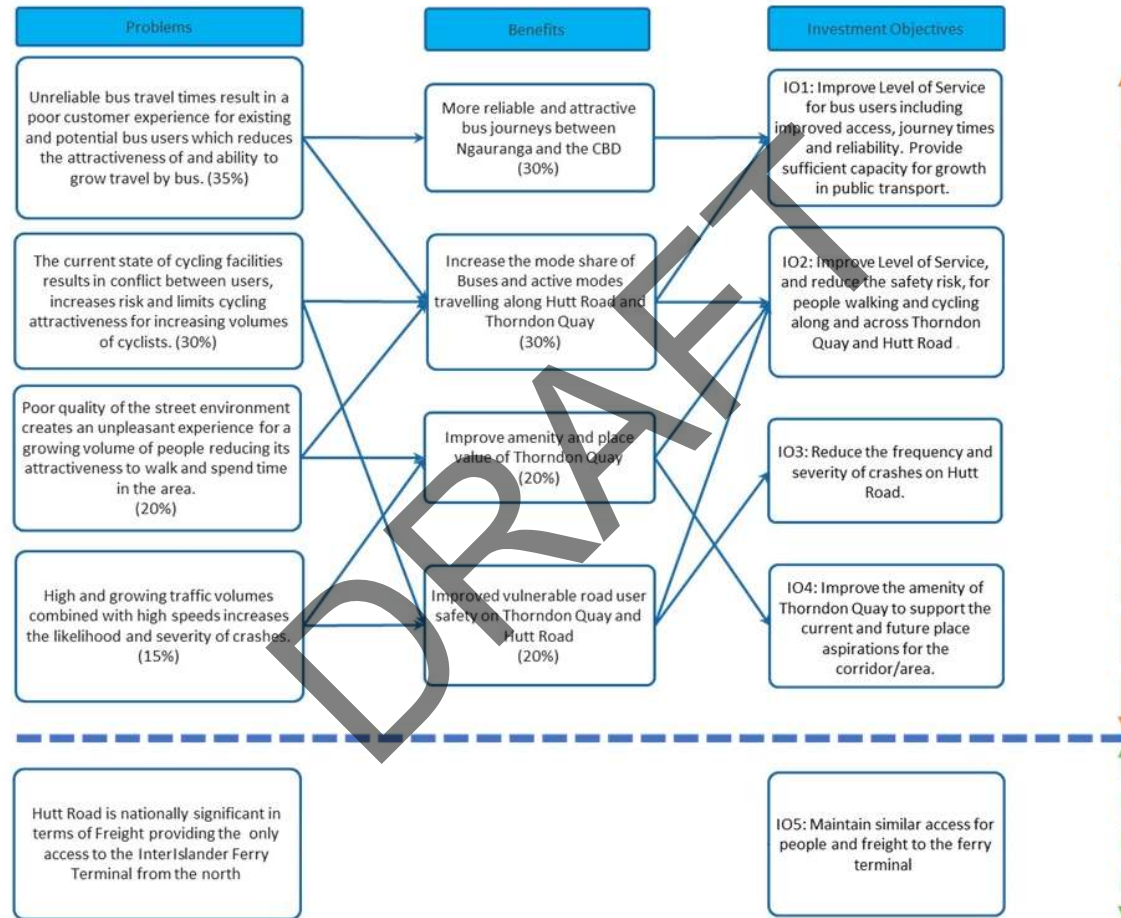
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The linkage between the problems, benefits and investment objectives is shown in Figure 4-11.



 Figure 4-11 ILM With Investment Objectives



4.10 Critical Success Factors

In addition to the investment objectives, four Critical Success Factors (CSFs) were identified by the Project Partners to further inform the development of options. These are shown in Figure 4-12.




Figure 4-12 Critical Success Factors

1. Demonstrate tangible improvements for public transport, pedestrians, and cyclists within the 2018-21 / 2021-24 NLTP periods
2. Limit the impact of implementation on businesses located on Thorndon Quay and Hutt Road
3. Positive economic impact on businesses on Thorndon Quay and Hutt Road
4. Stakeholders and public feel that they have had the opportunity to contribute and understand the rationale for the recommended programme

4.11 Alignment of Benefits/Objectives with LGWM Programme

As TQHR forms part of the wider LGWM programme, the problems, benefits, investment objectives and KPI's for the LGWM programme and TQHR were assessed to determine the alignment between them. Table 4-2 summarises the alignment of the LGWM benefits/ objectives with the TQHR problem statements.

Table 4-2 Alignment of LGWM Benefits/Objectives with TQHR Problems

LGWM Problems	LGWM Benefits/Objectives	TQHR Problems	Alignment
Increasing congestion and unreliable journey times	A transport system that enhances the liveability of the central city	Unreliable bus travel times result in a poor customer experience for existing and potential bus users which reduces the attractiveness of and ability to grow travel by bus.	 <p>ACCESS, REDUCED CAR RELIANCE, LIVEABILITY</p>
Poor and declining levels of service	A transport system that reduces reliance on private vehicle travel	The current state of cycling facilities results in conflict between users, increases risk and limits cycling attractiveness for increasing volumes of cyclists.	 <p>REDUCED CAR RELIANCE, SAFETY</p>
	A transport system that provides more efficient and reliable access for users	Poor quality of the street environment creates an unpleasant experience for a growing volume of people reducing its attractiveness to walk and spend time in the area.	 <p>REDUCED CAR RELIANCE, SAFETY, LIVEABILITY</p>



Safety issues especially for active modes	A transport system that improves safety for all users	 SAFETY	High traffic volumes and speeds increase the likelihood and severity of crashes.	 SAFETY
Vulnerability to disruption from unplanned events	A transport system that is adaptable to disruptions and future uncertainty	 RESILIENCE		





Table 4-3 shows that the TQHR investment objectives are aligned to each LGWM programme objective. In terms of resilience, the core function of the corridor was considered with respect to its critical function, the existing route designation in terms of vulnerability and its use as an alternative route to SH1. As such the most important aspect of this is to maintain the current level of access for freight and people.


Table 4-3 Alignment with LGWM Objectives

TQHR Investment Objectives	LGWM Objectives Alignment				
	 LIVEABILITY	 REDUCED CAR RELIANCE	 ACCESS	 SAFETY	 RESILIENCE
Improve Level of Service for bus users including improved access, journey times and reliability. Provide sufficient capacity for growth in public transport	●	●	●		
<ul style="list-style-type: none"> Improve Level of Service, and reduce the safety risk, for people walking and cycling along and across Thorndon Quay and Hutt Road 	●	●	●	●	
Reduce the frequency and severity of crashes.		●	●	●	●
Improve the amenity of Thorndon Quay to support the current and future place aspirations for the corridor/area.	●				
Maintain similar access for people and freight to the ferry terminal			●		●

In terms of alignment with the LGWM programme KPI's, Table 4-4 summarises the contribution that the TQHR project will make to these. The baselines can be derived from actual surveys and modelled data.

Table 4-4 Contribution TQHR Will Make to Achieving the LGWM Programme KPIs and Measures

LGWM IO's	LGWM KPI's	LGWM KPI Measure	TQHR Contribution (Low, Medium, High)	
 LIVEABILITY	KPI 1	Amenity Index - The quality of the urban environment	Amenity Index prepared specifically for LGWM	Low
	KPI 2	Transport-related CO2 emissions in the central city	CO2 emissions from VKT from model	Low
	KPI 3	Opportunities for urban development and value uplift	Qualitative assessment	Low
	KPI	Monitor traffic noise		Low
	KPI	Monitor Liveability Survey	Quality of Road Network, Quality of Public Transport (Economist Intelligence Unit Global)	Medium
	KPI	Monitor Air Quality	Particulates, NO2	Low
 REDUCED CAR RELIANCE	KPI 4	Improve the system occupancy	Transport model at four cordons	Medium
	KPI 5	Delays for people walking in the central city	Qualitative assessment of 11 intersections as to whether they are likely to experience a reduction in pedestrian delay.	N/A
	KPI 6	The quality of cycling facilities	Danish midblock LoS for eight corridors	High
	KPI	Monitor mode share within CBD/VKT within the CBD		Low
 ACCESS	KPI 7	The number of people living and working within 30 mins of key destinations	Census population and employment data coupled with geospatial analysis using historical data and modelled traffic. Civic Centre, Hospital, Airport and Port	Low
	KPI 8	The reliability of travel time by different modes to key regional destinations	Observed, qualitative and modelled (CoV) for a few key routes	High
	KPI	Monitor number of people travelling to CBD		Low
 SAFETY	KPI 9	Deaths and serious injuries for people walking and cycling in and around the central city	CAS and estimated reductions	High
	KPI	Monitor total casualties by severity and mode		High

LGWM IO's	LGWM KPI's		LGWM KPI Measure	TQHR Contribution (Low, Medium, High)
 RESILIENCE	KPI 10	Network resilience to disruption caused by large-scale natural hazards	Qualitative assessment using Regional Resilience PBC assessment	Low
	KPI	Monitor lane availability reductions due to unplanned events		N/A

4.12 Key Performance Indicators and Targets

Table 4-5 summarises the main outcomes and the baseline information and targets that have been defined for each Investment Objective. The target KPIs have been developed based on SMART principles.

Table 4-5 Investment Objectives Outcomes, Baseline and Targets

Investment Objective	Objective Description/Measurable Outcome/Baseline	Indicative Targets
1	Increase demand for bus services by 2026 and the speed of bus services by 2026. <ul style="list-style-type: none"> Baseline is approximately 950 passengers in the morning peak 2-hour period (southbound); and 1,000 passengers in the evening peak 2-hour period (northbound) Baseline is approximately 14 minutes travel time in the morning peak 2-hour period (southbound); and 9 minutes travel time in the evening peak 2-hour period (northbound) 	<ul style="list-style-type: none"> Increase in patronage to approximately 1,000 in the morning peak 2-hour period (southbound); and 1,100 in the evening peak 2-hour period (northbound) Reduce bus transit times by approximately five minutes in the morning peak 2-hour period (southbound) and by approximately one minute in the evening peak 2-hour period (northbound)
2	Improve Level of Service for non-car modes by 2026. <ul style="list-style-type: none"> Baseline Walking is LoS D (Thorndon Quay) Baseline Cycling is LoS F (Thorndon Quay) Increased cycle volumes on Thorndon Quay. <ul style="list-style-type: none"> Baseline is 300-1,600/day 	<ul style="list-style-type: none"> Walking – LoS (C on Hutt Road; C/D on Thorndon Quay (Northbound/Southbound) Cycling LoS (F/B on Hutt Road; F/C on Thorndon Quay). Increase cycle volumes on Thorndon Quay by at least 50%
3	Reduce the safety risk along Thorndon Quay and Hutt Road for all road users by 2026. <ul style="list-style-type: none"> Baseline for vulnerable users is 2.6 DSI crashes per year Baseline for all vehicles is 1.5 DSI crashes per year 	<ul style="list-style-type: none"> Reduce vulnerable user DSI crash risk by 20% within ten years using measures aligned with Safe System Principles. Reduce vehicle DSIs by 10% within ten years using measures aligned with Safe System Principles.



Investment Objective	Objective Description/Measurable Outcome/Baseline	Indicative Targets
4	<p>Amenity index/ Healthy Streets index aligns with Movement Framework criteria for Thorndon Quay by 2026.</p> <ul style="list-style-type: none"> ▪ Baseline for Thorndon Quay is M3/P1 in the Movement and Place Framework. <p>Increased pedestrian trips/throughput on Thorndon Quay.</p> <ul style="list-style-type: none"> ▪ Baseline is 2-3,000 per day 	<ul style="list-style-type: none"> ▪ Thorndon Quay to be M3/P2 in the Movement and Place Framework by 2026 ▪ Increase pedestrian trips/throughput on Thorndon Quay by over 20% from baseline.
5	<p>Broadly maintain truck travel times between Jarden Mile and Aotea Quay off ramp by 2026</p> <ul style="list-style-type: none"> ▪ Baseline: 7 minutes travel time in the morning peak 2-hour period (southbound); 5 minutes travel time in the evening peak 2-hour period (northbound) 	<ul style="list-style-type: none"> ▪ Maintain truck travel times.

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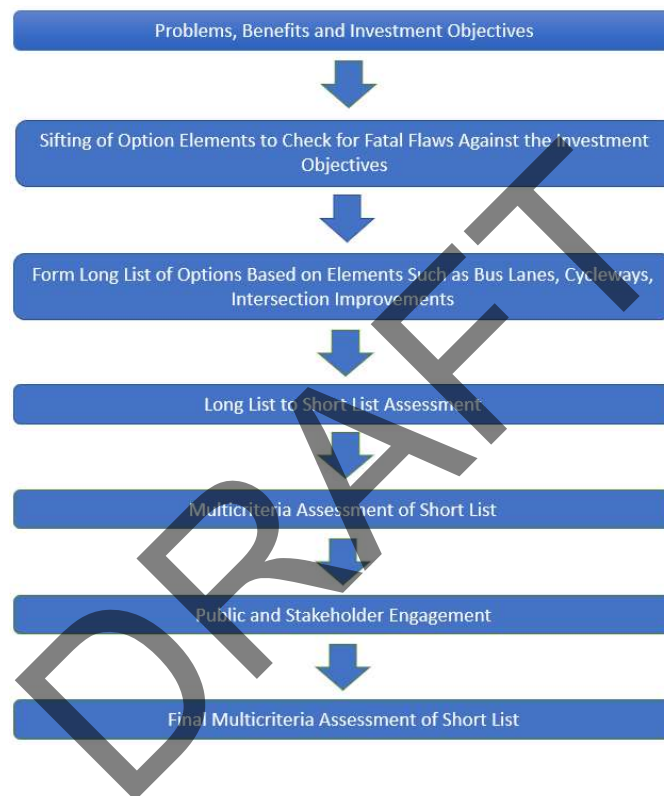
5 Economic Case – Options Development and Assessment

This chapter summarises the process undertaken to identify and refine a preferred option. Further details of the option development process are contained in the Long to Short List Report and the Options and Alternatives Report.

5.1 Option Development Process

Options were developed following the process summarised in Figure 5-1.

Figure 5-1 Option Generation to Short List Process



5.2 Reference Case

A reference (or do minimum) case was defined to provide a base case for all options to be assessed against. This assumed that the following transport projects that are already committed, funded or under construction are implemented by 2036:

- Ngauranga to Petone cycleway: A 4.5km shared path with a 5m wide sealed surface on the seaward side of the Hutt Valley Railway Line
- Transmission Gully: A 27km four-lane motorway which connects with SH1 at the existing Mackays Crossing interchange and merges with the current SH1 at Linden
- Peka Peka to Ōtaki: A bypass of Ōtaki, and the provision of a high standard four-lane expressway.

In June 2021, WCC approved proposals to changes to on-street parking provision on Thorndon Quay from angled to parallel, and they have now been implemented. This proposal addressed several safety concerns for cyclists and other road users but also would reduce parking capacity by approximately 70 spaces. As this proposal was not approved in the initial stages of the SSBC process, these changes were one of the interventions considered.

5.3 Transport Modelling

Demand forecasts and operational assessments have been undertaken for the TQHR project using both the Wellington Transport Strategy Model (WTSM 2013), the Ngauranga to Airport Aimsun Model (N2AM 2016) and a detailed Sidra model developed for this project. Further information is provided in the separate Transport Modelling and Analysis Report (November 2020).

WTSM is a four-stage demand model with the ability to respond to infrastructure or policy scenarios with trip destination and mode choice changes. It has a base year of 2013 and forecast years of 2026, 2036 and 2046. N2AM is a traffic assignment model and covers the Wellington CBD and surrounding suburbs from south of Ngauranga. It has a base year of 2016 and a forecast year of 2026.

Land use changes in line with current development plans for the Greater Wellington region are incorporated in the WTSM and N2AM models.

Sidra intersection models were developed to examine the operation of key intersections on the corridor once a preferred option was identified.

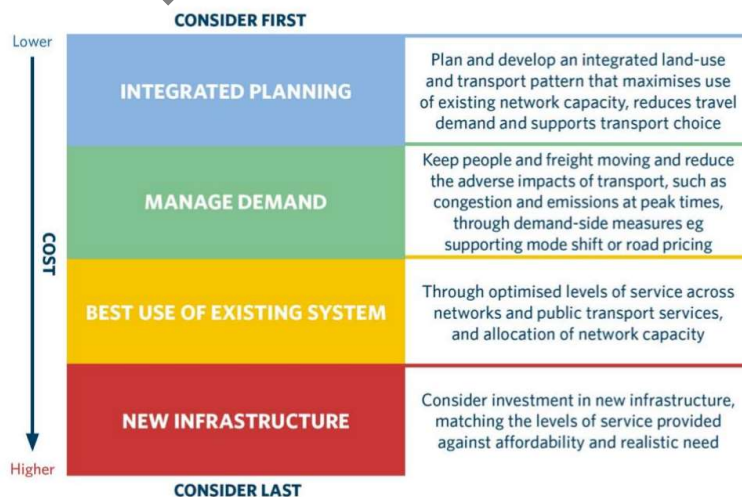
Note that further modelling will be undertaken during detailed design to optimise the design, and better understand the impacts of the preferred option, particularly on cyclists and public transport users.

5.4 Very Long List of Interventions Generation and Sifting

5.4.1 Intervention Hierarchy

Waka Kotahi developed the intervention hierarchy to ensure value for money, and that low-cost investment is considered ahead of more expensive physical infrastructure and technology investment. This is summarised in Figure 5-2 and was used to inform the development of potential treatment options.

Figure 5-2 Intervention Hierarchy



5.4.2 Options Out of Scope

Building from the PBC, several examples of options were identified as being out of scope for the TQHR corridor. This is to avoid introducing previously discounted options or activities being developed and implemented by the Project Partners through other programmes. The out-of-scope activities included:

- Consideration of MRT options
- Integrated ticketing/ off board ticketing
- Public transport fares
- Road/ parking pricing
- Park and Ride facilities
- Re-routing of bus services (including changes to the internal layout/ operation, or relocation, of the existing Lambton Quay Bus Interchange at the southern extent of the corridor)
- Reconfiguring / the optimisation of traffic signals, lane allocation and minor pedestrian and cycle improvements)
- Options which impact on listed current building consents
- Significant local road restrictions.

Travel demand management (TDM) options are also beyond the scope of this SSBC, as a separate business case is being prepared for LGWM to consider the case for region wide interventions.

5.4.3 Initial Very Long List

A large number of interventions were initially identified which sought to address the problem statements defined in the Strategic Case. The generation of interventions was informed by solutions identified in previous studies of the corridor, and the outcome of previous engagement.

The option initially identified were both stand-alone interventions, and interventions which could be combined to form larger packages. These were grouped into those which could be implemented on Hutt Road and those which could be implemented on Thorndon Quay.

The initial interventions were sifted by assessing the level of alignment or 'fit' with the Investment Objectives defined in the Strategic Case to develop a long list of options for evaluation. Sifting was undertaken on a qualitative basis by assessing whether any intervention failed to meet any of the Investment Objectives. If an option was considered to score negative against an Investment Objective, it was considered to be fatally flawed and was not progressed to the long list. However, the option was not considered to be fatally flawed if it was neutral to one or more Investment Objectives.

The sifting of options drew on the collective professional judgements of the business case team's technical specialists and was also informed by discussions held with the TQHR Technical Advisors and within the project team.

5.4.4 Interventions Not Progressed to the Long List

Based on the initial sifting, the following interventions identified for both Thorndon Quay and Hutt Road which were not progressed were as follows:

- Removing existing zebra crossings and replacing with pedestrian crossing refuges – this would have safety disbenefits to pedestrians



- Combined bus and cycle lanes – these were not progressed due to safety concerns of mixing buses with cyclists
- Mid-block vertical displacement – due to the adverse effect it would have on bus ride and passenger comfort.

Interventions for Thorndon Quay were excluded from further consideration:

- Off road cycleway at the rear of Woolstore to Davis Street
 - The proposal would require the use of the rail corridor, which is unlikely to be acceptable to KiwiRail
 - The proposal is also unlikely to be attractive to users from a Crime Prevention through Environmental Design (CPTED) perspective (a cycle facility which achieves the desired LoS for pedestrians and cyclists could not be provided due to the limited space available)
- Signalising the Davis Street intersection – this would have an adverse effect on the reliability of bus services
- Converting the Tinakori Road intersection to a roundabout – due to its adverse effect on the reliability of bus services.

5.5 Long List Options

The interventions identified from the sifting of the very long list of interventions were combined to form a series of corridor treatment options, and a number of node and intersection treatment options. These options were not considered for compatibility with the corridor theme options at this stage of the option development process.

5.5.1 Corridor Treatment Options

The following high-level corridor treatment options on Hutt Road and Thorndon Quay were identified:

- Southbound Special Vehicle Lanes (SVL) / Bus Lanes – a SVL is a traffic lane which can be used only by buses, or buses and trucks, or trucks and high occupancy vehicles (buses and cars with multiple occupancy) on a full or part time basis¹²
- SVLs/ Bus Lanes in both directions
- Bus lane in both directions on Thorndon Quay and southbound SVL on Hutt Road
- Cycle facilities (bi-directional and uni-directional)
- Footpaths and amenities – i.e. improved footpath widths and amenities
- Parking provision – i.e. changes from angled to parallel parking and removal of parking (note that these changes have now been implemented by WCC)
- Property access/ turning facilities – i.e. restrictions on access to adjacent properties (left in/ left out, the provision of alternative access roads, etc.)
- Property acquisition – the property implications of any of the above treatment options on property was also evaluated.

It should be noted that the corridor treatment options identified at this stage of the optioneering process were not mutually compatible with each other. For example, footpaths and amenity improvements can be constrained by cycle facilities, and therefore in some cases it may not be possible to provide additional footpath width in some locations. Similarly, options that involve kerb

¹² Motorcycles were assumed not to be permitted to use the proposed bus lanes/SVLs

realignment or parking space removal will be proposed only where they are as a consequence of other options, as opposed to standalone options. It should be noted that preliminary designs will be tested through developed design phase to reflect the developing LGWM UDF and the more detailed design thinking that will occur in the next phase.

5.5.2 Node and Intersection Treatment Options

The following node and intersection treatment options were identified:

- Intersection treatments:
 - Thorndon Quay/ Mulgrave Street
 - Signalise the bus movement in and out of Thorndon Quay
 - Change the form of intersection to have all traffic from Mulgrave Street use the intersection currently used by buses, thereby resulting in no conflict with Mulgrave Street traffic or bus movements
 - Thorndon Quay/ Moore Street
 - Signalise and provide a “head start” facility to allow buses to proceed ahead of other traffic on Thorndon Quay
 - Thorndon Quay/ Tinakori Street
 - Signalise and include active mode crossings and bus priority
 - Remove the merge from two lanes to one lane between Sar Street and Tinakori Road to facilitate continuous movement (e.g. a morning peak period bus lane)
 - Hutt Road/ Kaiwharawhara Street
 - Convert the slip lane into a normal left turn lane
 - Convert the existing “T” intersection to a “seagull” intersection (i.e. like Onslow Road) and provide new link from end of School Road to Kaiwharawhara Road
 - Restrict right turn access at the intersection and extend School Road across to Kaiwharawhara Road.
- Pedestrian and cycling treatments, including:
 - Providing raised platform zebra crossings on left turn slip lanes at intersections
 - Remove left turn slip lanes and incorporate left turn movements in the main intersection e.g. at the Thorndon Quay/ Mulgrave Street intersection
 - Provide a pedestrian crossing across Moore Street at its intersection with Thorndon Quay to prioritise pedestrians walking along Thorndon Quay
 - Alter the form of pedestrian crossing at the Moore Street/ Thorndon Quay intersection to reduce conflicts between movement along the corridor and movement across Thorndon Quay
 - Alter the form of pedestrian crossing at Thorndon Quay shops to better manage the conflicts between movement along the corridor and movement across Thorndon Quay
 - Provide more pedestrian crossings in the vicinity of Thorndon Quay shops to reduce the “barrier” for crossing the road
 - Provide a pedestrian crossing at the Tinakori Road intersection to facilitate pedestrians walking along Thorndon Quay
 - Provide new crossing(s) at the Tinakori Road intersection to provide access to Tinakori Road (and Sar Street), and provide better access to bus stops and cycle facilities



- Improve the footpath from Tinakori Road to Thorndon Quay and add cycle wheel ramps beside the stairs
- Improve crossing facilities or grade separate active modes at the Kaiwharawhara Road intersection (i.e. on the north side of intersection on Hutt Road)
- Provide a new pedestrian crossing at the Kaiwharawhara Road intersection (i.e. on the south side of intersection on Hutt Road)
- Extend the cycleway on Hutt Road from Jarden Mile to connect to the proposed Ngā Ūranga ki Pito-One project
- Improve crossing facilities or grade separate active modes at the Jarden Mile intersection.
- Amenity improvements at the following locations:
 - Mulgrave Street intersection (seating/ landscaping)
 - Seating/ landscaping in the space under pohutukawa trees between the motorway overbridge and Tinakori Road
 - Lighting improvements at the motorway overbridge near Tinakori Road to create a gateway effect
 - Around cultural and heritage places e.g. streams.
- Bus operational treatments:
 - Provide a bus “head start” at the pedestrian crossing at Thorndon Quay
 - Convert kerbside lane or add a bus priority southbound lane at the Kaiwharawhara Road intersection/ convert the kerbside lane or add a lane to provide southbound bus priority
 - Provide a bus queue jump lane (northbound) at the Kaiwharawhara Road intersection
 - Provide a bus lane on southbound approach to the Jarden Mile intersection and on the ramp heading towards State Highway 2 (SH2)
 - Provide a right turn lane or dedicated facility (signal) for buses to turn right to the ramp from the left-hand side after departure from the bus stop located at the intersection of Jarden Mile
 - Revise the bus stop locations at the intersection of Jarden Mile to minimise walking distance to connecting services (e.g. relocating the stop to the north of the intersection on a triangular shaped island)
 - Restrict car parking in the vicinity of the Jarden Mile intersection, to reduce operational impediments for buses.
- Safety improvements
 - Speed limit reductions
 - Raised tables.

5.6 Long List Option Assessment Process

The long list of corridor theme, node and intersection options was scored qualitatively against the evaluation criteria by a range of specialists. This consisted of transport planning, road safety, consenting, civil engineering and landscape architecture specialists.

As the form of node and intersection treatments will be determined by the preferred corridor treatment option, node and intersection treatment options and corridor treatment options were



evaluated independently of each another. It was not practical to assess the vast number of combinations of node and intersection treatment options and corridor treatment options.

5.7 Long List Assessment Results

The results of the evaluation of the long list options are summarised in Appendix E (whole of corridor treatments) and Appendix F (node and intersection treatments), including the main reasons for recommending progressing or rejecting the options. The options coloured in 'green' are those recommended to be carried forward to the shortlist, and those not recommended to be progressed to the short list are highlighted 'red'.

5.8 Options Short Listed

Based on the outcome of the long list evaluation, it was concluded that all the short-listed options should include the following key elements:

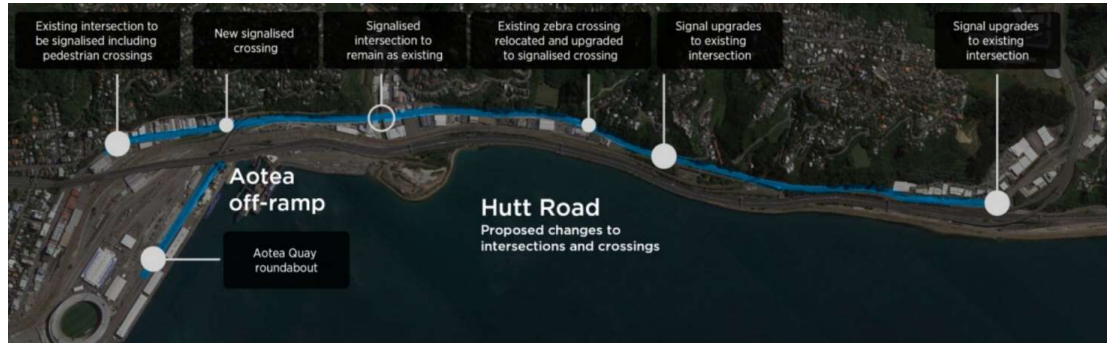
- Peak period bus priority lanes on Thorndon Quay (southbound only, or in both directions). This will maximise people throughput along the corridor, improve the level of service for bus users and allow parking to take place in off-peak periods
- Peak period SVLs on Hutt Road (southbound only, or in both directions). This will improve people throughput and the level of service for bus users, to maintain the level of service for port related freight traffic and to allow parking to take place in off-peak periods (it should be noted that the initial analysis indicated the SVLs should be available for buses and trucks only)
- Improved separated cycle facilities on Thorndon Quay (either uni-directional or bi-directional cycle lanes) to improve safety for cyclists and complement the existing bi-directional cycleway on Hutt Road
- Intersection upgrades which are consistent with the corridor treatments:
 - Hutt Road/ Jarden Mile
 - Designated pedestrian and cyclist crossing provision and increased size of islands
 - Reassignment of lanes for the northbound approaches
 - Relocation of bus stops
 - SVLs on the northbound approach to the intersection
 - Hutt Road/ Onslow Road
 - The current Seagull configuration is proposed to be fully signalised to provide a secure crossing for cyclists who are not currently catered for (this will require combining the southbound through and right movements into one lane and 'split' phasing the intersection to restrict right turn filter movements)
 - Hutt Road/ Tinakori Street
 - Raised crossings to provide a safer crossing environment for pedestrians and cyclists
 - Thorndon Quay/ Mulgrave Street
 - Full signalisation to assist bus movements in and out of the existing Lambton Quay Bus Interchange
- Amenity improvements on Thorndon Quay, notably:
 - Tree planning
 - Shade
 - Seating

- Shelter
- Gardens
- Interpretation/wayfinding.
- Existing pedestrian facilities along and across the corridor to be maintained, with traffic signal control introduced at the existing crossing on Hutt Road near Rangiora Avenue (see Figure 5-3 and 5-4).
- New or relocated/revisted pedestrian crossings (whether there are to be signalised or unsignalised options was considered later in the design process) at the following locations (see Figure 5-3 and 5-4):
 - Thorndon Quay – between Davis Street and Moore Street (existing zebra crossing relocated)
 - Thorndon Quay – between Davis Street and Tinakori Street (existing zebra crossing to be relocated)
 - Hutt Road at Aotea Quay ramps (new crossing facility)
- The pedestrian crossing on Hutt Road near Rangiora Avenue will be signalised.
- All angled car parking space on Thorndon Quay is to be removed and replaced with parallel car park spaces to improve safety (since completed by WCC in September 2021)
- Remove closely spaced bus stops or relocate/redesign bus stops (as outlined in Appendix G)
- Lower speed limits.

Figure 5-3 Proposed Changes to Intersections and Crossings on Thorndon Quay



Figure 5-4 Proposed Changes to Intersections and Crossings on Hutt Road



5.8.1 Core Options

The key decisions which need to be addressed in the short list evaluation are around:

- Whether the bus lane on Thorndon Quay and the SVL on Hutt Road should be provided in a southbound direction only or in both directions
- Whether the cycleway on Thorndon Quay should be uni-directional (i.e. one direction of travel each side) or provide a bi-directional cycleway (i.e. on the eastern (seaward) side).

Four core options were therefore defined as follows:

- Option 1 – Southbound bus lane on Thorndon Quay/ SVL on Hutt Road, with a bi-directional cycleway on Thorndon Quay
- Option 2 – Bus lanes on Thorndon Quay/ SVLs on Hutt Road in both directions, with a uni-directional cycleway on Thorndon Quay
- Option 3 – Southbound bus lane on Thorndon Quay/ SVL on Hutt Road, with a uni-directional cycleway on Thorndon Quay
- Option 4 – Bus lanes on Thorndon Quay/ SVLs on Hutt Road in both directions, with a bi-directional cycleway on Thorndon Quay.

5.8.2 Sub Options

The assessment also identified that the provision of a bus or SVL on Hutt Road added additional risks. These include:

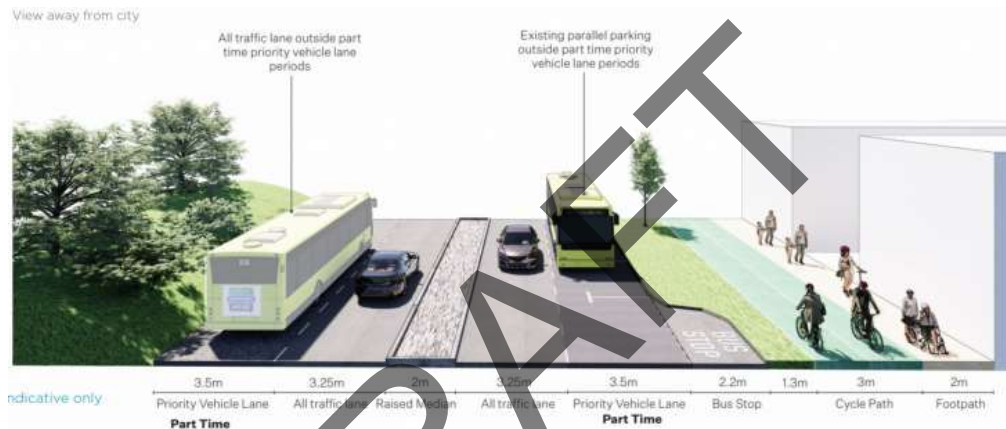
- An increased risk of side impact crashes - drivers will be required to cross two opposing lanes of traffic which will likely have different speeds at peak times due to the freely flowing SVL lane, thereby making it more difficult to judge safe gaps in traffic when turning
- An increased risk to motorcyclists and cyclists from turning traffic - the addition of the SVL had the potential to mask motorcyclists which may be filtering between the two traffic lanes to pass slower moving vehicles in the general traffic lane, and also cyclists riding on the shared path. Furthermore, due to congestion and the completion of the other shared path projects in the city, these users are likely to increase in number in the future, increasing the likelihood of a crash.

To mitigate this risk, options that included a central median and a service lane sub-option were developed:

- Sub-Option A – left-in left-out access only on Hutt Road, with some gaps in the median and at intersections for small vehicles to turn at, but requiring a new turnaround facility to be provided at Aotea Quay for longer vehicles to turn at
- Sub-Option B – a new service lane on the east side of Hutt Road (between Onslow Road and Kaiwharawhara Road) and requiring modifications to the existing Onslow Road and Kaiwharawhara Road signalised intersections.

Figure 5-5 shows an example of how a raised median can be incorporated in the design of Option 4. A raised median can be incorporated in Options 1-3 in a similar way.

Figure 5-5 Raised Median on Hutt Road

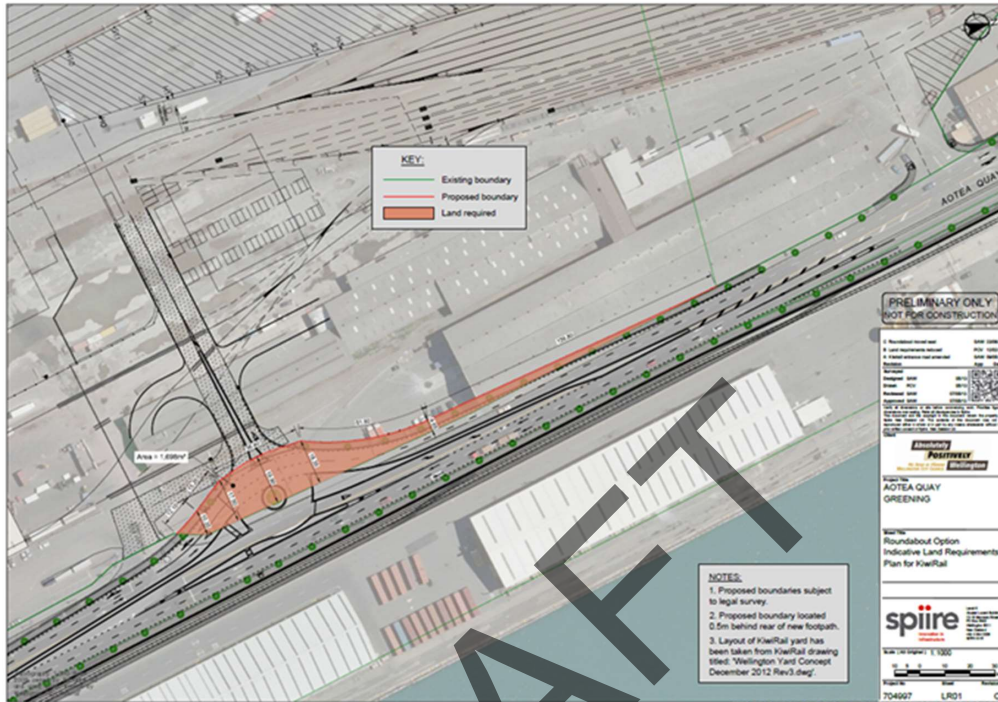


5.8.2.1 Aotea Quay Turnaround facility (Sub Option A)

A proposed new turnaround facility on Aotea Quay, at the KiwiRail container terminal entrance, would provide a safe place to turn for drivers of large vehicles intending to travel north from a business on Hutt Road. It would also reduce the amount of traffic on Hutt Road by providing alternative access to the Kaiwharawhara ferry terminal from State Highway 1.

A design for a roundabout on Aotea Quay was developed for WCC in 2014. This is shown in Figure 5-6.

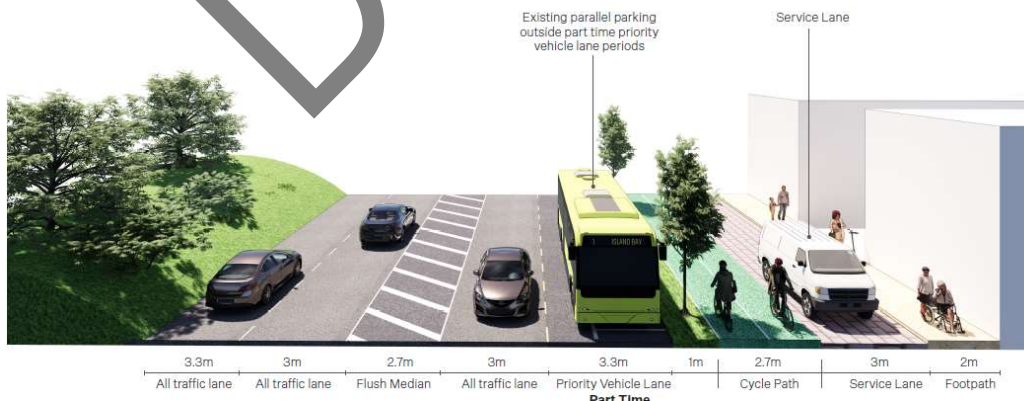
Figure 5-6 Proposed Roundabout at Aotea Quay



5.8.2.2 Service Lane on Hutt Road (Sub Option B)

An indicative cross section for a service lane on Hutt Road is shown in Figure 5-7. This is shown to be incorporated in Option 1 but could also additionally be incorporated into all four options.

Figure 5-7 Service Lane on Hutt Road



5.8.3 Summary of Options and Sub Options Short Listed

The full list of options and sub-options short-listed are summarised in Table 5-1.



Table 5-1 Short Listed Options

Option	Elements			Common Elements
	Thorndon Quay Bus Lanes	Thorndon Quay Cycle Lanes	Hutt Road SVL(s)	
Option 1: Southbound bus/SVL lanes with Thorndon Quay bi-directional cycleway	Southbound	Bi-directional	Southbound	<ul style="list-style-type: none"> ▪ Removal of angle parking on Thorndon Quay to improve safety¹³ ▪ Lower speed limits ▪ Intersection upgrades ▪ Pedestrian crossing improvements ▪ Bus stop rebalancing and layout improvements ▪ Thorndon Quay amenity improvements
Option 1A: Southbound bus/SVL lanes with Thorndon Quay bi-directional cycleway	Option 1 plus: <ul style="list-style-type: none"> • Left-in / Left-out on Hutt Road (central median) • Turnaround facility on Aotea Quay 			
Option 1B: Southbound bus/SVL lanes with Thorndon Quay bi-directional cycleway	Option 1 plus: <ul style="list-style-type: none"> • Service lane on east side of Hutt Road (between Onslow Road and Kaiwharawhara Road) • Modifications to the existing Kaiwharawhara Road and Onslow Road signal-controlled intersections 			
Option 2: Southbound and Northbound bus/SVL lanes with Thorndon Quay uni-directional cycleway	Both directions	Uni-directional	Both directions	
Option 2A: Southbound and Northbound bus/SVL lanes with Thorndon Quay uni-directional cycleway	Option 2 plus the same variants as for Option 1A			
Option 2B: Southbound and Northbound bus/SVL lanes with Thorndon Quay uni-directional cycleway	Option 2 plus the same variants as for Option 1B			
Option 3: Southbound bus/SVL lanes with Thorndon Quay uni-directional cycleway	Southbound	Uni-directional	Southbound	
Option 3A: Southbound bus/SVL lanes with Thorndon Quay uni-directional cycleway	Option 3 plus the same variants as for Option 1A			
Option 3B: Southbound bus/SVL lanes with Thorndon Quay uni-directional cycleway	Option 3 plus the same variants as for Option 1B			
Option 4: Southbound and Northbound bus/SVL lanes with Thorndon Quay bi-directional cycleway	Both directions	Bi-directional	Both directions	
Option 4A: Southbound and Northbound bus/SVL lanes with Thorndon Quay bi-directional cycleway	Option 4 plus the same variants as for Option 1A			
Option 4B: Southbound and Northbound bus/SVL lanes with Thorndon Quay bi-directional cycleway	Option 4 plus the same variants as for Option 1B			

¹³ Since completed by WCC in September 2021

Figure 5-8 is a schematic diagram of the four core options. Indicative cross sections for the options are shown in Figure 5-9 to 5-16. It should be noted that the dimensions on the cross sections are indicative only and are not necessarily consistent between different options.

Figure 5-8: Indicative Plans Option 1 to 4

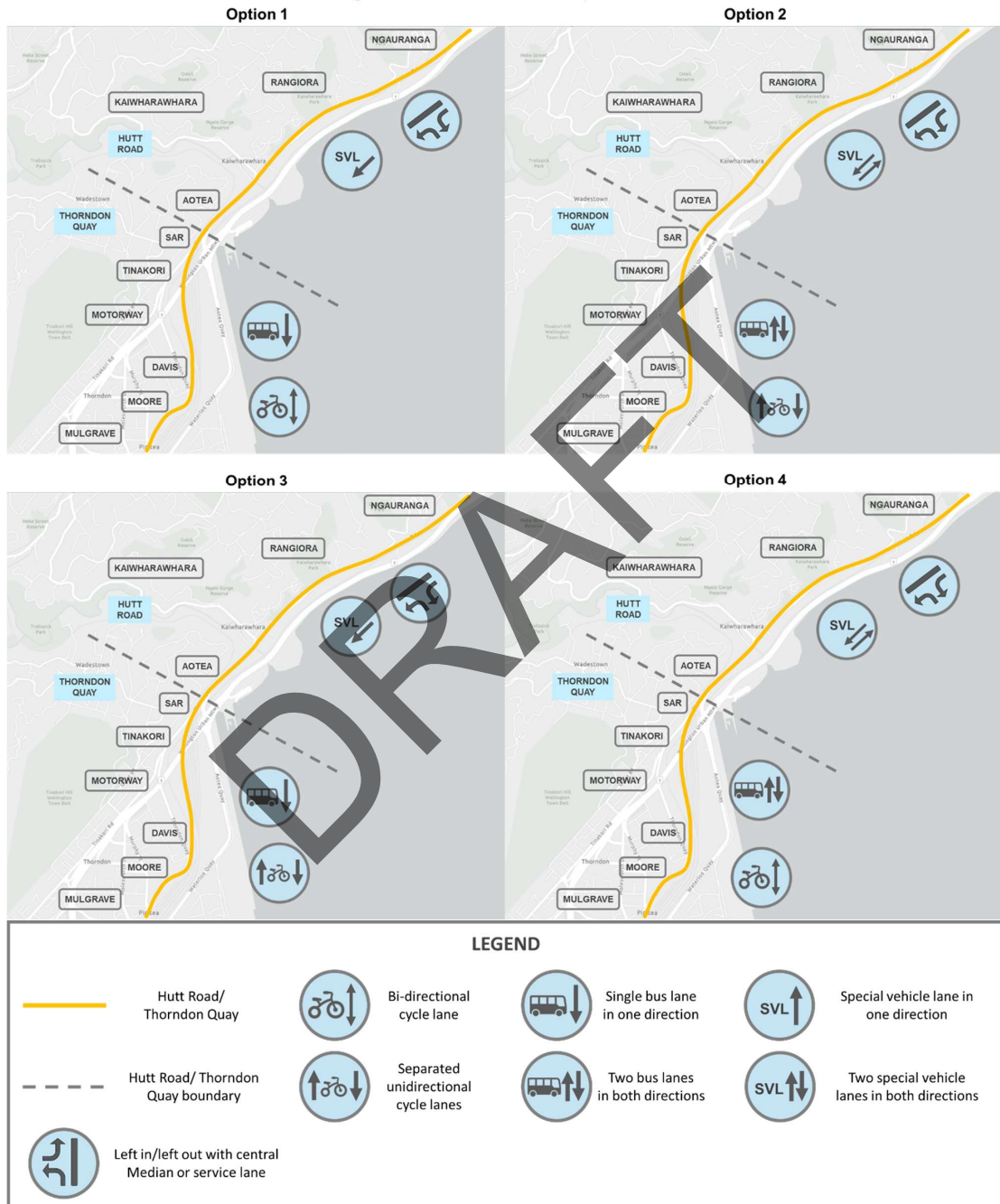


Figure 5-9 Option 1 – Thorndon Quay Indicative Plan and Cross Section

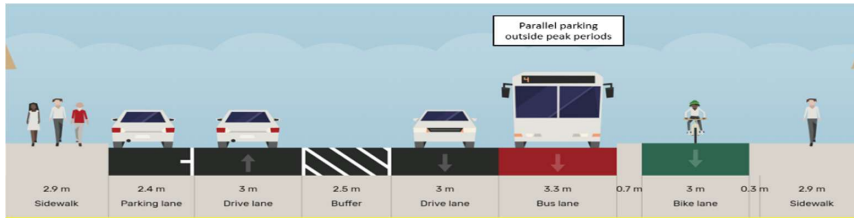


Figure 5-10 Option 1 – Hutt Road Indicative Plan and Cross Section

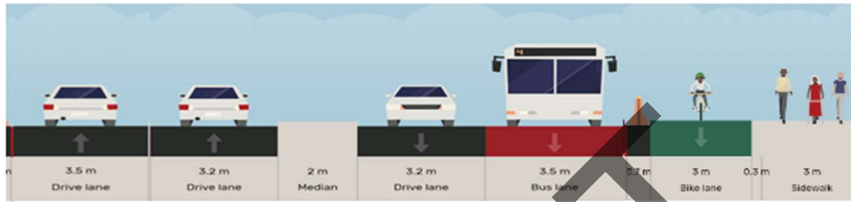


Figure 5-11 Option 2 – Thorndon Quay Indicative Plan and Cross Section

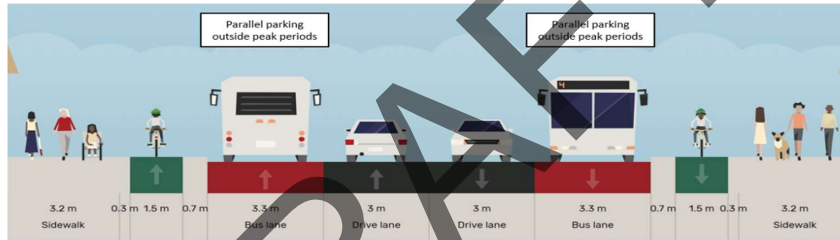


Figure 5-12 Option 2 – Hutt Road Indicative Plan and Cross Section

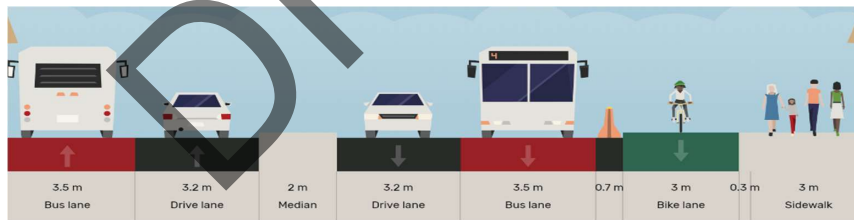


Figure 5-13 Option 3 – Thorndon Quay Indicative Plan and Cross Section

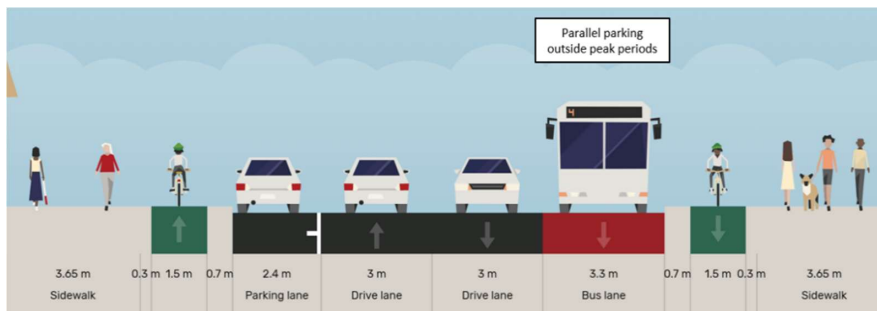


Figure 5-14 Option 3 – Hutt Road Indicative Plan and Cross Section

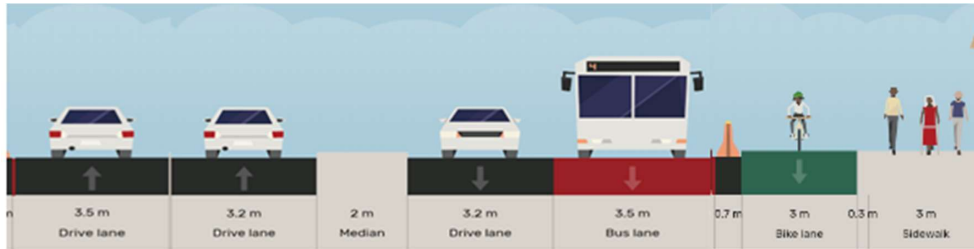


Figure 5-15 Option 4 – Thorndon Quay Indicative Plan and Cross Section

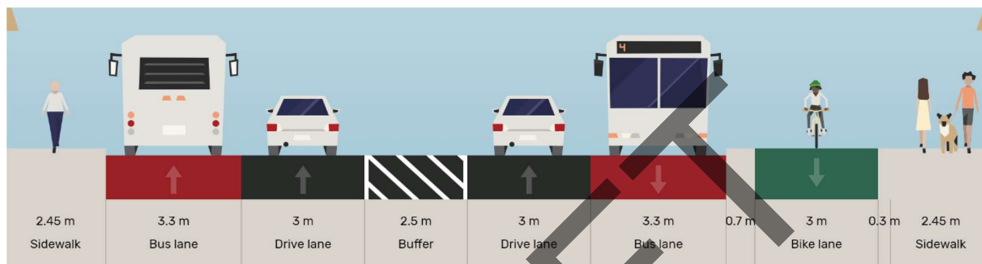
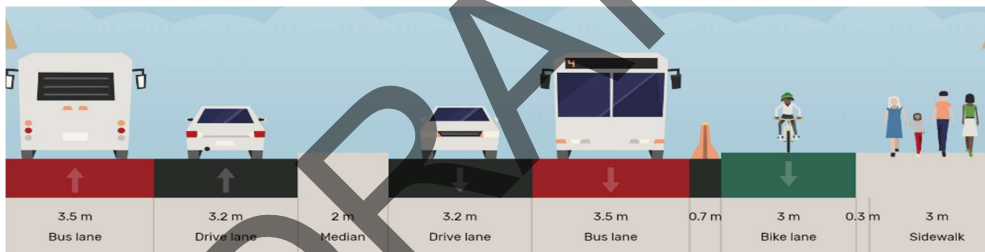


Figure 5-16 Option 4 – Hutt Road Indicative Plan and Cross Section



5.9 Long to Short List Assessment Process

In order to determine a preferred option, the short-listed options and sub options were subjected to a multi criteria assessment (MCA) process. The assessment process aims to highlight the differences between the options, the similarities and the trade-offs of choosing one option over another. A number of other technical tasks including transport demand/ operational modelling and cost estimation were adopted to determine the preferred option.

An assessment framework was developed based on an MCA framework developed by LGWM, however, was additionally adapted to the needs of the TQHR project.

5.9.1 Safe System Assessment

A Safe System Assessment was undertaken for the purposes of understanding the risk elements in infrastructure that are known to be a major contributor to deaths and serious injuries (DSI) on our roads. This approach uses the safe system principles and thinking which underpin the Government's Road to Zero Strategy.

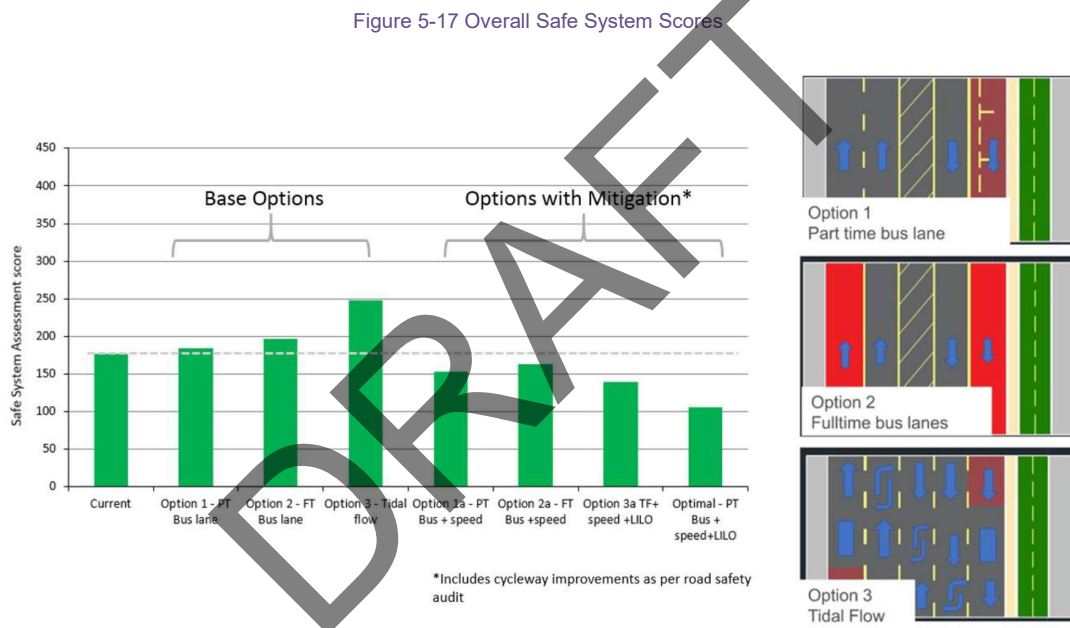
The SSFA is used to understand the underlying high-risk infrastructure elements, inform safer design options and demonstrate the risk reduction achieved. It can also be used to highlight areas where there is less Safe System alignment requiring further consideration and mitigation. The SSFA is based on the guidance contained with Austroads Research Report AP-R609-16 Safe System Assessment Framework.

Alongside the current situation early options were assessed including:

- Four lanes (i.e. two in each direction) including one southbound part-time morning peak period bus lane
- Four lanes (two each direction) including a full-time bus lane in each direction
- Five lanes with tidal flow arrangement with three lanes provided in the morning and evening peak period respectively (including a part-time bus lane in each direction).

Further options were also assessed which included potential mitigation measures for further exploration by the project team.

It can be seen in Figure 5-17 that the Safe System Assessment score overall was higher than the current situation for all the base options and a tidal flow option in its base form being the least safe. Noting a higher score indicates less alignment with the safe system approach and hence, would be expected to be less safe.



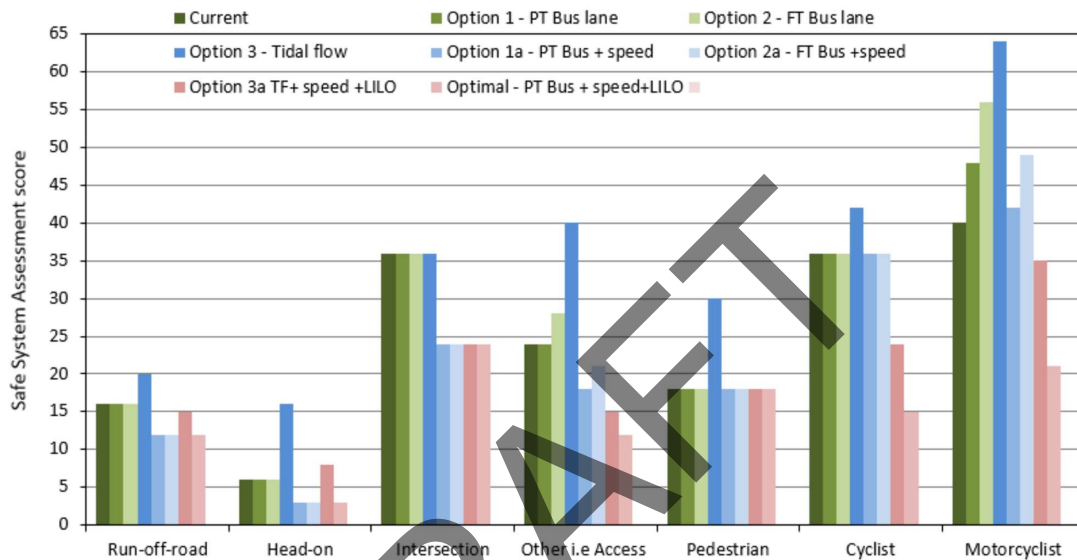
The key underlying issues noted in the assessment giving rise to higher risk were:

- Difficulty obtaining a suitable gap in traffic across multiple lanes to turn right (in or out) of accesses)
- Differential traffic speeds across the lanes making it difficult to judge a safe gap to turn (in or out) of accesses
- Masking of motorcyclists in bus lanes/ filtering lanes by other traffic presenting issues with right turning traffic
- Masking of cyclists using the shared path by multiple lanes of traffic for right turning traffic
- Less awareness of cyclists due to drivers focusing on attaining a gap in traffic.

It is noted that the current situation also exhibits issues with turning traffic conflicting with cyclists using the shared path.

It can be seen in the overall assessment (Figure 5-17) that with the addition of speed reduction (reducing potential impacts closer to safe system speeds) and/ or a left in/ left out arrangement it is possible to reduce the overall safe system score to below what is seen currently. However, when reviewing the detailed risk scores by each key user/ crash type (Figure 5-18) it is noted that the risk is not significantly different to affect the score for cyclists and does not significantly improve the risk score for motorcyclists through the addition of speed reduction alone.

Figure 5-18 Detailed Scores by User/ Crash Type



Overall, there is an increasing trend in crashes and a high proportion of cyclist and motorcyclist crashes which also make up the majority of serious crashes along this section of the corridor. While there have been ongoing cycling improvements, the increase in cyclist numbers expected will likely increase future crash occurrence. In the case of motorcyclists, increasing congestion on the route and the wider Wellington region is likely to result in an increased uptake which may in turn increase the number of crashes involving these users. Due to their vulnerability, cyclists and motorcyclists are at an elevated risk of increased serious injuries in the event of a crash which is evidenced in the crash history. The installation of further lanes without mitigation was concluded to likely exacerbate the existing crash risks.

The SSFA also highlights this as a key risk alongside that of motorcyclists. It also highlights intersection and access risk as being elevated, being the primary common factor in these risks are those associated with turning traffic. Only the options which include restrictions to access through the removal/ rationalisation of right turn movements by vehicles, reduce the safety risk significantly.

In addition to these issues, further mitigations not explicitly considered at this stage, were explored for the design of the preferred option, such as improvements to pedestrian crossing facilities or intersection refinements.

5.9.2 LGWM Multi Criteria Assessment Framework

A multi criteria assessment (MCA) framework¹⁴ was produced by LGWM in 2020 to provide direction and promote consistency in the assessment of other projects being considered in the LGWM programme. The framework sets out the recommended process to be followed in the assessment of options, including the criteria to be assessed and the scoring scales to be used.

The framework gives flexibility in the assessment approach by recognising that each project may apply effects or design and delivery criteria specific for the corridor/ issues being investigated. The framework can also help differentiate between options.

An eleven-point scoring scale was used, as recommended in the LGWM MCA process, and is summarised in Figure 5-19.

Figure 5-19 Long to Short List MCA Scoring Scale

Score	Scoring Description
5	Substantial benefits and a high degree of confidence of benefits being realised and/or long term / permanent benefits
4	High extent of benefits and confidence of benefit being realised and/or medium - long term benefits
3	Good benefits and/or medium term
2	Low or localised benefits and/or short term
1	Very low benefits and/or very short term
0	No change in benefits, impacts or difficulties from current situation
-1	Few difficulties, very low cost or low impact on some resources/values and/or very short term
-2	Minor difficulties, low cost or minor impacts on resources/values and/or short term
-3	Some difficulties, moderate cost or some impact on resources/values and/or medium term
-4	Clear difficulties, high cost or high impact on resources/values and/or medium - long term
-5	Substantial difficulties, very high cost or substantial impact on resources/values and/or long term / permanent

5.9.3 MCA Criteria

The LGWM MCA framework was tailored to be used for the assessment of the short-listed options identified for the TQHR corridor. The key criteria adopted for the short list assessment was the contribution of the options to the investment objectives, the effects and to delivery, maintenance and operations, as shown in Figure 5-20. The interpretation of each criterion has been tailored so that the evaluation will highlight the differences between the options.

¹⁴ Let's Get Wellington Moving - Proposed Multi Criteria Analysis Framework , May 2020

Figure 5-20 MCA Criteria



5.9.3.1 Effects Criteria

The main effects considered were:

- Tangata Whenua values
- Social: Effects on social and economic opportunities along and adjacent to the corridor
- Property Access: Effect of access for all modes on and to properties along the corridor
- Fit with LGWM Programme: Alignment with other committed projects, such as the Golden Mile project.

5.9.3.2 Delivery, Maintenance and Operations Criteria

The main delivery, maintenance and operations criteria considered were:

- Delivery Cost: considering the expected duration of construction of the project, and any impacts on businesses and the community during construction phase.
- Operation and Maintenance Costs: including the effect of the project on the operation of emergency services
- Timeframe for construction (delivery).

5.9.4 MCA Scoring

Each evaluation criteria were 'owned' and scored by a number specialists. They used various input information, including site assessments, information provided by stakeholders, calculations and data. The main information used is summarised in Table 5-2.

Wherever possible, assessments were based on available information and work already completed. A "rules based" assessment was incorporated within the methodology where possible.



Specialists collaborated and shared information with partner organisations and between one another for consistency. Individual meetings with the equivalent members of the partner organisations were held to promote this dialogue and to feed back into a series of MCA workshops. The workshop enabled challenge and questioning of each specialist. The specialist was given the opportunity to reconsider their score if new information became available at the workshop. The workshop enabled team members and LGWM officers to develop a deeper understanding of the key factors that differentiate the options and the conclusions resulting from the evaluation findings.

As part of option development and refinement, alternatives for avoiding significant adverse effects were considered and additional mitigation that may be required were identified. These additional mitigations were discussed in a workshop setting with all specialists being given the opportunity to determine whether the inclusion of the proposed mitigation could change their score and whether it should be considered further. If an alternative or option had any negative effects on vulnerable social groups (elderly, low income, disabled etc), the project team considered whether additional measures were needed to avoid, remedy or mitigate this.

Consideration was also given to the success factors when scoring the options against the criteria. It was important to understand how short-listed options perform against the success factors, and ensure this is reflected in the MCA scores, even if the option was unable to achieve them.

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Table 5-2 MCA Considerations and Inputs

Criteria	Assessment Considerations	Inputs
Investment Objectives		
<p>Investment Objective One:</p> <ul style="list-style-type: none"> Improve level of service for bus users including improved access, journey times and reliability Provide sufficient capacity for growth in public transport 	<ul style="list-style-type: none"> Reduction in bus travel times (peak periods) Reduction in bus travel time variability (peak periods) Increased people carrying capacity of the corridor Reduction in distance to a bus stop Reduction in footway crowding at bus stops Legibility of bus stop locations and spacing 	<ul style="list-style-type: none"> Bus Spreadsheet Modelling outputs Aimsun modelling outputs Bus stop catchment modelling Site visit to identify effective width, pinch points etc, space at bus stops
<p>Investment Objective Two:</p> <ul style="list-style-type: none"> Improve level of service, and reduce the safety risk, for people walking and cycling along and across Thorndon Quay and Hutt Road 	<ul style="list-style-type: none"> Danish LOS measure Increase pedestrian level of service – crossing delays (signal controlled and uncontrolled) Wider footpaths Capacity for cycling growth Reduction in the likelihood of pedestrian and cyclist crashes (change in level of conflict) Reduction in the expected severity of pedestrian and cyclist crashes 	<ul style="list-style-type: none"> Healthy Streets Index Austrroads Part 6 SSAF Analysis of CAS data Safe and Appropriate Speed (SAAS) assessment High level safety review of options Waka Kotahi Ngauranga to Petone cycleway demand forecasts Traffic flow data Traffic speed data Aimsun modelling outputs
<p>Investment Objective Three:</p> <ul style="list-style-type: none"> Reduce the frequency and severity of crashes on Hutt Road 	<ul style="list-style-type: none"> Reduction in the expected frequency and severity of crashes 	<ul style="list-style-type: none"> SSAF Analysis of CAS data SAAS assessment of short-listed options High level safety review of options Bespoke / targeted crash history analysis Various data Traffic flow data Traffic speed data Aimsun modelling outputs
<p>Investment Objective Four;</p> <ul style="list-style-type: none"> Improve the amenity of Thorndon Quay to support the current and future place aspirations for the corridor/area 	<ul style="list-style-type: none"> Effect on character and place value Amenity Increased opportunity to enhance character and place value Increased opportunity to create vibrancy and human level street activity¹⁵ 	<ul style="list-style-type: none"> Surveys to identify location / amount of street furniture, planting, street art Traffic flow data

¹⁵ feels safe, relaxed, provides for dwelling, seating, events, identity contributors (like art works or celebrating heritage places), space for hospitality)



Criteria	Assessment Considerations	Inputs
	<ul style="list-style-type: none"> Improved environmental comfort (i.e. noise, air quality, adjacent motor vehicle volume, amount of vegetation) Changes in the likelihood of or consequences of crime 	
Investment Objective Five: <ul style="list-style-type: none"> Maintain similar access for people and freight to the ferry terminal 	<ul style="list-style-type: none"> Effect of options on freight movements versus existing situation Consider future effects of options plus Single User Ferry Terminal Consider people movement to the ferry terminal 	<ul style="list-style-type: none"> Forecast freight data Single User Ferry Terminal PBC WAU strategic transport model outputs Business surveys
Effects		
Social	<ul style="list-style-type: none"> Effect on equitable¹⁶ access¹⁷ to social and economic opportunities such as employment, retail, health and cultural opportunities Effect on social connectedness 	<ul style="list-style-type: none"> Stakeholder inputs
Property access	<ul style="list-style-type: none"> Effect on access to and servicing of private building (i.e. deliveries, removals, building maintenance) – long term 	<ul style="list-style-type: none"> Discussions with building owners Stakeholder feedback Loading bay / service requirements surveys
Fit with LGWM Programme	<ul style="list-style-type: none"> Alignment with linked projects such as Golden Mile and City Streets Flexibility to integrate with linked projects Ability to deliver the option incrementally Ability to scale the level of intervention 	<ul style="list-style-type: none"> LGWM Project Lead inputs
Mana Whenua Values	<ul style="list-style-type: none"> Seven values 	
Delivery, Maintenance and Operations		
Delivery	<ul style="list-style-type: none"> Duration of delivery Effect on pedestrians 	Emerging preliminary design

¹⁶ Considered different sectors of society, including mobility impaired, income groups, age groups etc.

¹⁷ Considered the likely changes in the number and location of mobility parks, bicycle parks, motorcycle parks, public on-street car parks, public off-street car parks, bus stop locations



Criteria	Assessment Considerations	Inputs
	<ul style="list-style-type: none"> ▪ Effect on cyclists ▪ Effect on bus operations ▪ Effect on retail ▪ Effect on parking ▪ Effect on access to and servicing¹⁸ of private building (i.e. deliveries, removals, building maintenance) 	
Operations and maintenance	<ul style="list-style-type: none"> ▪ Effect on public operational costs (maintenance, refuse collection, street cleansing, landscape maintenance) ▪ Effect on ability to accommodate utilities and services repairs and renewals ▪ Effect on ability to re-route bus services due to major planned and unplanned events ▪ Effect on the flexibility of future corridor use (movement and place) ▪ Effect on emergency services response times / effectiveness ▪ Qualitative assessment of effect on operational cost 	<ul style="list-style-type: none"> ▪ Discussions with WCC, service providers, utility providers and others
Timeframe for delivery	<ul style="list-style-type: none"> ▪ Ability to demonstrate tangible improvements (outputs) within the 2018-21 / 2021-24 period ▪ Ability to demonstrate tangible improvements (benefits) within the 2018-21 / 2021-24 period 	Emerging preliminary design

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¹⁸ Considered the number and location of loading bays



5.9.5 High Level Cost Estimates

In order to inform the selection of the preferred option, high level (Indicative Business Case Estimates) (IBEs) were prepared for the four core options in November 2020. An estimate was also prepared for a variant of Option 4 (Option 4A), which include a left-in/ left-out access arrangement and some gaps in the median for cars to turn on Hutt Road, as well as alterations to the existing Aotea Quay to allow trucks to turn round. The cost estimates (IBEs) were prepared in accordance with the Waka Kotahi Cost Estimation Manual and are summarised in Table 5-3.

Table 5-3 Indicative Business Case Estimates of the Shortlisted Options (2020)

Option	Expected IBE Cost (\$000s)
1	\$25,400
2	\$27,700
3	\$23,800
4	\$28,100
4A (i.e. Option 4 with left-in / left-out access on Hutt Road and Aotea Quay Roundabout)	\$33,100

The estimates indicate that cost is not significantly different between options and is therefore not a major factor in the option selection process.

5.9.6 High Level Economic Analysis

This preliminary economic analysis was undertaken to provide an indicative understanding of the economic efficiency outcomes for the options assessed. This was undertaken simply to provide a high-level understanding of the economic efficiency outcomes for the options and help establish that the overall benefits of the TQHR project could exceed the costs. The analysis was based on a corridor model that was developed to provide an indication of changes in vehicle speeds based on the level of congestion (using volume/capacity speed flow curves) and intersection delays.

The economic analysis was undertaken in accordance with Waka Kotahi Economic Evaluation Manual (EEM)¹⁹, using a 40-year evaluation period and a 4% discount rate. This was the recommended approach at the time this analysis was undertaken. As the vehicle volumes differ slightly between options for similar sections, a variable trip evaluation method was applied to account for the change in road user surplus and resource cost correction.

From the corridor modelling outputs, the following primary transport impacts were assessed:

- Travel time and congestion costs and benefits
- Vehicle operating costs and benefits
- Active mode/ health costs and benefits
- Emission costs and benefits.

¹⁹ EEM was used as the SSBC process commenced prior to it being replaced by the Monetised and Non-monetised Benefits Manual



Further modelling will be done during subsequent phases of the project to inform the detailed design process.

5.9.6.1 Travel Time and Congestion Costs and Benefits

The travel time and congestion costs were assessed for each of the sub-sections of the corridor for the morning and evening peak periods. These were individually assessed for each user group (i.e. bus passengers, trucks, single occupant, two occupant and three occupant vehicles).

5.9.6.2 Vehicle Operating Costs and Benefits

Base vehicle operating costs were assessed based on the average speeds estimated for each sub-section and by vehicle type.

5.9.6.3 Active Mode Benefits

The active mode benefits have been estimated based on bus passengers walking and assumed an average length of 280m.

Cycle mode share was assumed to increase by 2%, based on the forecast increase in cycle mode share from northern suburbs to central area prepared by WCC. A conservative 30% of the health benefits was assumed from the estimated demand.

5.9.6.4 Emission Costs

Emission costs were estimated based on the vehicle type emission tonnage predicted from the base vehicle operating costs applied with the costs of CO₂ emissions.

5.9.6.5 Safety Benefits

A high-level safety benefits assessment was undertaken. This was based on baselining the safety impacts that are common across all the short-listed options (e.g. speed reduction), then accounting for differences between the options.

For this preliminary assessment, the total social crash costs were estimated to be around \$2.98 million per annum, or approximately \$80 million over a 40-year period. The short-listed options were estimated to reduce crashes by approximately 20% to 30%.

5.9.6.6 Summary of Economic Analysis

The results of the preliminary economic analysis for the four core options and Options 4A are summarised in Tables 5-4 and 5-5.



Table 5-4 Preliminary Economic Benefits for the Shortlisted Options (2020)

Option	Travel Time and Congestion Costs/Benefits (\$m)		Safety Benefits (\$m)	Active Mode Benefits (\$m)	Other (VOC, CO2 etc) Benefits (\$m)	TOTAL DISCOUNTED BENEFITS (\$m)
	Public Transport	Other Vehicles				
1	\$25.4	\$0.4	\$18.2	\$23.6	\$4.5	\$72.1
2	\$42.1	-\$25.4	\$20.2	\$23.6	\$3.9	\$64.5
3	\$25.4	\$0.4	\$23.4	\$23.6	\$4.5	\$77.3
4	\$42.1	-\$25.4	\$13.0	\$23.6	\$3.9	\$57.2
4A	\$42.1	-\$61.8	\$20.2	\$23.6	\$8.5	\$32.6

Table 5-5 Discounted Costs and Economic Benefits, and Overall Benefit to Cost Ratio for the Core Options

Option	Discounted Costs (\$m)	Discounted Benefits (\$m)	Benefit to Cost Ratio (BCR)
1	\$27.8	\$72.1	2.6
2	\$23.5	\$64.5	2.7
3	\$22.6	\$77.3	3.4
4	\$23.9	\$57.2	2.4
4A	\$27.9	\$32.6	1.2

In summary, the results of the preliminary economic analysis were found to be:

- The BCRs for the short-listed options ranges between 1.2 and 3.4
- Travel time savings for public transport users outweighs the disbenefits for other vehicle users.

It should be noted that this analysis was refined for the preferred option, as is explained later in this chapter of the SSBC.

5.10 Short List Assessment Conclusions (Prior to Stakeholder and Public Engagement)

Prior to receiving feedback from stakeholder and public engagement, and scores on the effects on mana whenua values, the highest scoring options from the MCA were Options 4A and 4B (see Alternative and Options Report in Appendix H for further details).



The MCA considered, amongst other things, the economic benefits generated from each option but only considered these at a high level (using coarse cost estimates). However, the economic performance of options did not determine the selection of the preferred option alone.

While Options 4A and 4B scored similarly overall, the provision of a service road (suboption B) was discounted as being more disruptive, fit less with other regional projects and carried larger implementation risk.

The provision of bidirectional or unidirectional cycling facilities was also discussed. It was noted that the provision of a bidirectional cycleway (i.e. Options 1 or 4) should be aligned with the wider LGWM programme as there are bidirectional facilities planned to the north and south of the TQHR corridor. This would provide a consistent cycle path and ease of connection.

It was also noted that while both unidirectional and bidirectional cycle facilities would improve safety and level of service, unidirectional cycleways (Options 2 or 3) scored better for safety, due to less risk with cyclists travelling with the direction of general traffic.

Following the interim MCA workshop, the Technical Advisory Group (TAG) met to discuss a recommended option. The TAG supported the highest scoring option of 4A while noting the additional safety risks inherent with bidirectional cycleways which will require consideration in the design phase.

The TAG recommended that Option 4A was the best option to take forward as the interim preferred option. This decision was supported by the LGWM Programme Steering Group.

5.11 Public Engagement on the Interim Preferred Option

Public engagement on the proposed changes to TQHR was undertaken between 11th May and 8th June 2021. Over 1,600 responses were received, largely via an online survey, which is considered as an adequate response rate.

The consultation also included an open day at Pipitea Marae on Thorndon Quay (on Friday 21st May and Saturday 22nd May 2021), which was attended by approximately 50 people, and two market days at Harbourside Market, Waitangi Park (on Sunday 23rd May 2021) and at Johnsonville Market (on Sunday 30th May 2021). Ongoing discussions were held with some key stakeholders.

Overall, the engagement was well received, and the feedback was supportive of the proposals, though there certainly were some views that we need to be very mindful of. For example, there was some strong opposition to the removal of angled parking, particularly from the business community, and some concern existed around the possible removal of trees. Some people's opposition to the proposals did reduce once the proposals had been explained to them in more detail.

A lot of feedback related to issues that will be addressed in the next phase of the design process such as safety aspects (children moving around, etc.) was received.

No fatal flaws were identified, though the Sky Stadium did say they need the ability to stop traffic for evacuation purposes. Hence, if a roundabout is implemented on Aotea Quay, it will require signalisation.

No additional options emerged from the process which had not been considered before. There were no options which had been rejected but some details that need to be considered further.

A report providing more details of the engagement findings was published in July 2021. A summary of this is provided in Appendix I.



5.11.1 Revisions to the MCA Following Stakeholder and Public Engagement

Following the close of stakeholder and public engagement, a second MCA workshop was held on 30 June 2021. The purpose of this workshop was to consider the impact of engagement feedback on the interim MCA scores, update scores based on any further information, as well as to incorporate the mana whenua values assessment into the MCA.

The implementation of a bus lane on the southbound side was preferred over both directions as the benefits were higher. Without the northbound bus lane, this would provide more ability to influence the design of the footpath on the northbound (or 'beach' side). Mana whenua noted that most of their land interests along the corridor were along this historical beach side.

The 'B' sub-options all scored higher than the 'A' and base options as they were considered to provide an opportunity to improve access and create a neighbourhood space for those properties along Hutt Road.

Mana whenua supported the bi-directional cycleway on the harbourside as it is consistent with other cycle projects north and south of Thorndon Quay and Hutt Road. It should be noted that the change to angle parking to parallel was not considered in their scoring as WCC had already voted in favour of the change at the time of scoring the options.

The delivery team noted that since the interim MCA, some preliminary design of Option 4A had progressed, including more detailed evaluation of the available width on Hutt Road and desired width for the various modes. Based on this further work, the delivery team considered that the service lane 'B' suboption does not physically fit within the corridor and property acquisition would be necessary. Discussion at the workshop confirmed that the delivery score for the service lane should be reduced to -5 (the lowest score possible).

As buildings would require alteration or demolition to implement the service lane suboptions, it was agreed that the service lane options, despite the scoring, should no longer be progressed due to the disproportionate cost and effect of land acquisition.

The discussion at the workshop noted that the Thorndon Quay Collective submission raised concerns about loss of parking and economic impact. It was noted that the submission addressed the loss of parking issue but did not offer other submissions that would differentiate between options. As all options involve the loss of and reconfiguration of on-street parking, the submission did not offer differentiators between the options and the scoring did not change from the interim MCA.

While the scoring for the MCA criteria did not change from the interim MCA as a result of engagement, the workshop noted that there were many detailed points to further discuss with stakeholders and property owners during design. It is anticipated that dialogue between LGWM and stakeholders will continue through the conclusion of the business case and into the design phase so that stakeholders, users and property owners can influence the design as it develops.

The introduction of the mana whenua values scores and the reduction of the delivery score for the service lane suboptions changed the relativity between options compared to the interim MCA. Options 4A and 4B still scored the highest, similar to the interim MCA. This scoring does not reflect the decision that the service lane suboptions should no longer be progressed. Option 4A is therefore recommended as the preferred option.

Table 5-6 summarises the final results of the MCA assessment of the options.



Table 5-6 Final MCA Scoring Summary

Option	Contribution to Investment Objectives					Contribution to Effects				Contribution to Delivery, Maintenance and Operations			Total	Option Rank
	IO1 – Bus Reliability / Attractiveness	IO2 – Walking & Cycling	IO3 – Hutt Road Safety	IO4 – Thorndon Quay Amenity	IO5 – Similar Freight Access*	Mana whenua values	Social	Property Access	Fit with LGWM Programme	Delivery	Operations & Maintenance	Timeframe for Delivery		
Option 1: Southbound bus lanes with Thorndon Quay bi-directional cycleway	3	1	1	3	2	3	3	-3	3	-1	-1	2	16	7
Option 1A: Southbound bus lanes with Thorndon Quay bi-directional cycleway	3	2	3	3	2	4	3	-2	4	-2	-2	0	18	3
Option 1B: Southbound bus lanes with Thorndon Quay bi-directional cycleway	3	2	3	1	2	5	3	4	2	-5	-2	-1	17	4
Option 2: Southbound and Northbound bus lanes with Thorndon Quay uni-directional cycleway	4	3	1	1	3	1	4	-3	3	-3	-2	0	12	11
Option 2A: Southbound and Northbound bus lanes with Thorndon Quay uni-directional cycleway	4	4	3	1	3	2	4	-3	4	-4	-3	-2	13	9
Option 2B: Southbound and Northbound bus lanes with Thorndon Quay uni-directional cycleway	4	4	3	1	3	3	4	4	2	-5	-3	-3	17	4
Option 3: Southbound bus lanes with Thorndon Quay uni-directional cycleway	3	3	1	2	2	2	3	-3	2	-4	-1	0	10	12



Option	Contribution to Investment Objectives					Contribution to Effects				Contribution to Delivery, Maintenance and Operations			Total	Option Rank
	IO1 – Bus Reliability / Attractiveness	IO2 – Walking & Cycling	IO3 – Hutt Road Safety	IO4 – Thorndon Quay Amenity	IO5 – Similar Freight Access*	Mana whenua values	Social	Property Access	Fit with LGWM Programme	Delivery	Operations & Maintenance	Timeframe for Delivery		
Option 3A: Southbound bus lanes with Thorndon Quay uni-directional cycleway	3	4	3	2	2	3	3	-2	3	-4	-2	-2	13	9
Option 3B: Southbound bus lanes with Thorndon Quay uni-directional cycleway	3	4	3	1	2	4	3	-4	1	-5	-2	-3	15	8
Option 4: Southbound and Northbound bus lanes with Thorndon Quay bi-directional cycleway	4	1	1	4	3	2	3	-3	4	-1	-1	0	17	4
Option 4A: Southbound and Northbound bus lanes with Thorndon Quay bi-directional cycleway	4	2	3	4	3	3	3	-2	5	-2	-2	-2	19	1 Equal
Option 4B: Southbound and Northbound bus lanes with Thorndon Quay bi-directional cycleway	4	2	3	3	3	4	3	4	3	-5	-2	-3	19	1 Equal

*the assessment scores assume that only buses and trucks are permitted to use the proposed peak period SVLs on Hutt Road.

5.12 The Preferred Option

5.12.1 Thorndon Quay

The proposal for Thorndon Quay will provide part-time bus lanes in both directions and extend the two-way cycle path from Hutt Road to the bus interchange at Mulgrave Street. Footpaths and the streetscape will also be improved.

Changes will allow for future growth of bus users and cyclists and encourage more people to walk, shop and spend time on Thorndon Quay. Safety will be improved for everyone by improving pedestrian crossings and providing a dedicated cycle path.

5.12.1.1 Changes for people living, working, or owning a business:

- The streetscape will be improved to make it more pleasant for people to visit and spend time here
- Between 100 and 130 on street parking spaces will be available at all times
- Between 220 and 240 on street parking spaces will be available when bus lanes are not operating, which is more than the current peak demand for parking spaces
- Safety will be improved for everyone.

5.12.1.2 Changes for using the bus:

Bus lanes will be provided in both directions because it improves bus travel times and reliability during peak hours, encouraging more people to take the bus.

- During the morning peak period, there will be a dedicated bus lane into the city, which means buses will be able to bypass any morning peak traffic congestion, improving bus reliability and reducing travel time
- In the evening peak, there will be a dedicated bus lane out of the city
- At all other times of the day, buses will travel with other traffic (cars/ vans/ motorcyclists etc.)
- Priority will be given to buses at Mulgrave Street to improve journey times
- Some bus stop locations and layouts will be adjusted to better balance local walking access and travel time for people on the bus
- The streetscape will be improved to make it more pleasant when you are waiting for a bus
- Pedestrian crossings will be improved to make it safer to get to and from bus stops
- Changes for people living, working or owning a business.

5.12.1.3 Changes for people riding bikes

A two-way cycle path is proposed on the east side of Thorndon Quay as it will provide improved connectivity to Wellington city, allow space for people riding at different speeds, minimise conflict at the bus interchange and avoid intersections.

- There will be a new two-way cycle path on one side of the street connecting with the cycle path on Hutt Road
- The cycle path will be as wide as the space allows and will be separated from the footpath, to provide dedicated space for cyclists
- The design of the cycle path will make vehicle crossing points as safe as possible
- Signalised cyclist crossings will be included at signalised pedestrian crossings
- The streetscape will be improved, making cycling journeys more pleasant.

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5.12.1.4 Changes for people walking, using skateboards, scooters or other mobility devices

- A footpath will be provided on both sides of the road; expected to be at least 2m wide
- The footpath will be separated from the cycle path to provide dedicated space
- The streetscape of the area will be improved with planting, seating, lighting, different surfaces
- Pedestrian crossings will be improved, including new crossings, making it safer and easier to cross the street.

5.12.1.5 Changes for people driving

- One lane of general traffic will be maintained in each direction at all times
- Lane widths will generally be at least as wide as they are now
- Angle parking will be converted to parallel parking making it safer to drive along Thorndon Quay (now implemented by WCC)
- Intersections will be improved at Mulgrave Street and Tinakori Road.

5.12.1.6 Changes for people parking

- On-street angle parking will be converted to parallel parking making it safer to park on Thorndon Quay (now implemented by WCC)
- When the bus lanes are not operating, between 220 and 240 parallel parking spaces will be available (this is more than the current peak demand for parking spaces)
- With one bus lane operating in the peak period direction, between 100 and 130 parking spaces will be available.

These changes have been informed by a parking utilisation study survey that was conducted earlier in the business case process. It is recommended that, alongside these changes, WCC undertake a parking management plan. The detailed design process will determine the precise number of on-street car parking spaces that will be removed.

5.12.2 Hutt Road

The proposal for Hutt Road includes providing part-time SVLs in both directions and at the Ngauranga/ Jarden Mile intersection. The SVLs will provide priority for buses and trucks. This decision, and whether or not other vehicles will be permitted to use the SVLs, will be confirmed during detailed design, informed by further transport modelling.

SVLs are proposed in both directions because this will improve bus and truck travel times and reliability during peak hours, and help make buses more reliable and attractive. The proposed changes to the intersection are also expected to increase the attractiveness of walking and cycling through increased safety and access.

The design also includes upgrading and extending the existing shared cycle and footpath north to the Ngauranga/ Jarden Mile intersection. This will provide a connection to the existing shared path that connects to Te Ara Tupua and the proposed cycle path on Thorndon Quay into the city. Options to upgrade the existing connection to Te Ara Tupua are being considered under a separate study which will be an addendum to this SSBC.

A significant safety risk for people walking, cycling or riding motorbikes and for vehicles on Hutt Road is people turning right across traffic to enter and leave properties.

To improve safety on this road, a central raised median is proposed to prevent traffic making right turns. A turnaround facility on Aotea Quay is required to provide a safe turning location for large vehicles wanting to travel north from a property on Hutt Road. This provides additional benefits of

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reducing traffic, in particular trucks, on Hutt Road through the provision of an alternative access to the ferry terminal at Kaiwharawhara.

5.12.2.1 Changes for people living, working or owning a business

- Provide approximately ten parking spaces outside Storage One that will be available at all times
- Between 100 and 130 additional parking spaces will be available when the bus lane into the city is not operating
- Safety will be improved for all users
- Accessing properties may mean using a different route and increasing your journey time.

5.12.2.2 Changes for people using the bus

- During the morning peak period, there will be a bus lane/SVL into the city, which means buses will not be caught in morning peak traffic congestion, improving bus reliability, and reducing travel time
- In the evening peak, there will be a bus lane/SVL out of the city
- At all other times of the day, buses will travel with other traffic (cars/ vans/ motorcyclists etc.)
- Priority will be given to buses at the Ngauranga/ Jarden Mile intersection to improve journey times
- Some bus stop locations and layouts will be adjusted to better balance local walking access and travel time for people on the bus
- Some bus stops will be improved to make it more pleasant to wait for a bus
- Pedestrian crossings will be improved to make it safer to get to and from bus stops.

5.12.2.3 Changes for people riding bikes

- The existing two-way cycle path will be extended to the Ngauranga/ Jarden Mile intersection and connected to the existing shared path that connects to Te Ara Tupua and the proposed cycle path on Thorndon Quay
- Safety improvements will be made to the existing cycle path
- Cyclist crossings will be included at intersections including the Jarden Mile intersection, as well as at pedestrian crossings, making it safer to cross the road
- Motor vehicles will not be able to turn right into and out of properties on Hutt Road north of the Aotea Quay ramps, to make it safer when riding over vehicle crossing points
- With the introduction of a turnaround facility on Aotea Quay, less freight and other traffic will need to use Hutt Road to access the ferry terminal, ensuring a safer and more pleasant journey.

5.12.2.4 Changes for people walking, using skateboards, scooters or other mobility devices

- The existing shared cycle and footpath will be upgraded and extended north to the Ngauranga/ Jarden Mile intersection
- Pedestrian crossing improvements will make it safer to cross the road
- Pedestrian crossing facilities will be installed at Jarden Mile making it safer to cross the road
- Safety will be improved as motor vehicles will not be able to turn right into and out of properties on Hutt Road, north of the Aotea Quay ramps, due to the proposed raised median
- Less freight and other traffic will need to use Hutt Road to access the ferry terminal at Kaiwharawhara due to the introduction of a turnaround facility on Aotea Quay, which will create

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a more pleasant and safer corridor along Hutt Road for people to walk, skate, scoot or otherwise.

5.12.2.5 Changes for people driving

- One lane of general traffic will be maintained in each direction at all times
- Improvements will be made to the intersections at Tinakori Road, Rangiora Avenue and Onslow Road
- Vehicles will not be able to turn right into properties across Hutt Road along the section of corridor between the Aotea Quay ramps and the Ngauranga/ Jarden Mile intersection, to increase safety for all road users (turnaround locations for smaller vehicles will be considered during the next phase of design).

5.12.2.6 Changes for freight and delivery vehicles

- Alternative access to the ferry terminal at Kaiwharawhara from SH1 will improve resilience to retain reliable access to the ferry
- Large vehicles will need to use the new turnaround facility on Aotea Quay or the existing turnaround facility, directly north of Ngauranga intersection, to turn around if required.

5.12.2.7 Changes for people parking

- Approximately ten parking spaces will be available at all times
- Between 100 and 120 additional parking spaces will be available when the bus lane into the city is not operating.

5.13 Development of the Preferred Option

A preliminary design was prepared following the confirmation of the preferred option, and further traffic modelling was undertaken to confirm the operation of key intersections. Separate transport modelling is being undertaken in conjunction with Waka Kotahi and KiwiRail on the turnaround facility on Aotea Quay to consider all potential changes in this area.

The key design parameters and assumptions used in the development of the preliminary design for the preferred option are contained in the Preliminary Design Philosophy Statement (PDPS (Appendix J). This includes details of the minimum and desirable widths for traffic lanes, bus lanes, cycleways, streetscape and landscape design elements and other infrastructure. It also provides details of any departures from design standards which are required.

A Road Safety Audit was completed on the preliminary design and changes incorporated into the design for the SSBC.

5.13.1 Key Design Features

The key design features of the preliminary design include:

- SVLs in both directions on Hutt Road and bus lanes in both directions on Thorndon Quay
- A bi-directional cycleway (i.e. off road) on Thorndon Quay to complement the existing bi-directional cycle path on Hutt Road and provide a link to the Te Ara Tupua (Wellington to Hutt Valley walking and cycling link)
- Improvements to the existing bi-directional cycle path on Hutt Road, as recommended in the Hutt Road Safety Audit
- A median on Hutt Road to address the safety issues caused by turning movements for property access

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- A turnaround facility on Aotea Quay to permit traffic to turn around after the installation of a median on Hutt Road
- A speed review to consider lower posted speeds on Thorndon Quay (40km/hr), Hutt Road (50km/h south of Onslow Road and 60km/h north of Onslow Road) and Aotea Quay (50km/h)
- Intersection upgrades and pedestrian crossing improvements
- Bus stop rationalisation or rebalancing, as described in Appendix G
- Significant amenity improvements on Thorndon Quay, with some improvements to Hutt Road also, noting the opportunities to improve the experience are generally less than for Thorndon Quay.

The preliminary design is discussed in more detail below.

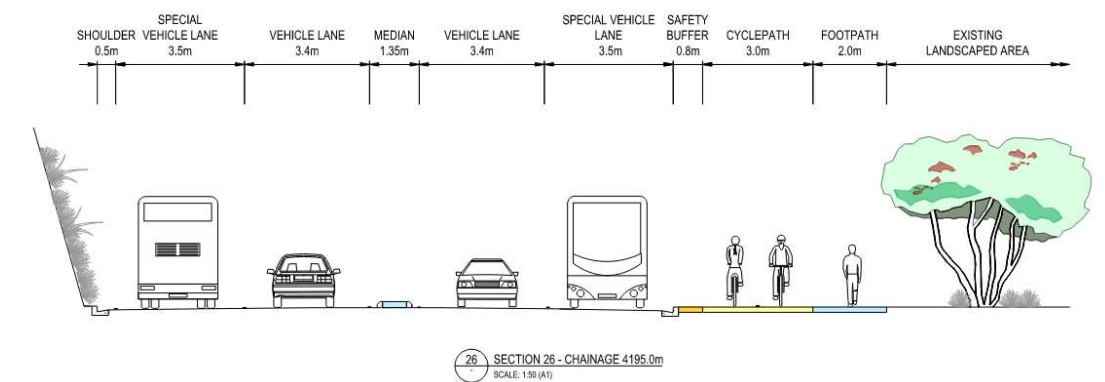
5.13.1.1 Hutt Road Design

The key elements of the project along Hutt Road are:

- One general traffic lane in each direction
- An SVL for buses and freight in the northern section (Aotea Quay to Jarden Mile) (note that the implications of this for buses and the legal and enforcement implications of this will be considered further during detailed design, and further modelling will be undertaken to inform this)
- A peak period bus lane in the southern section (Tinakori Road to Aotea Quay), which is available for on street parking during the off-peak period
- A raised central median to restrict right turns, except at clearly defined and controlled locations
- A 0.8m safety buffer, typically, to protect vulnerable users from traffic, from the wind blasts from large vehicles and from doors opening direct into the cycle path
- Widened cycle and pedestrian lanes tying into the newly constructed lengths at the southern end of Hutt Road, proposed to be at the same level along Hutt Road
- A 1.8m footpath and 3m minimum cycleway is proposed, but this is not possible at some pinch point locations (though this does not compromise the overall project).

The proposed typical cross section for Hutt Road is shown in Figure 5-21.

Figure 5-21 Proposed Hutt Road Cross Section



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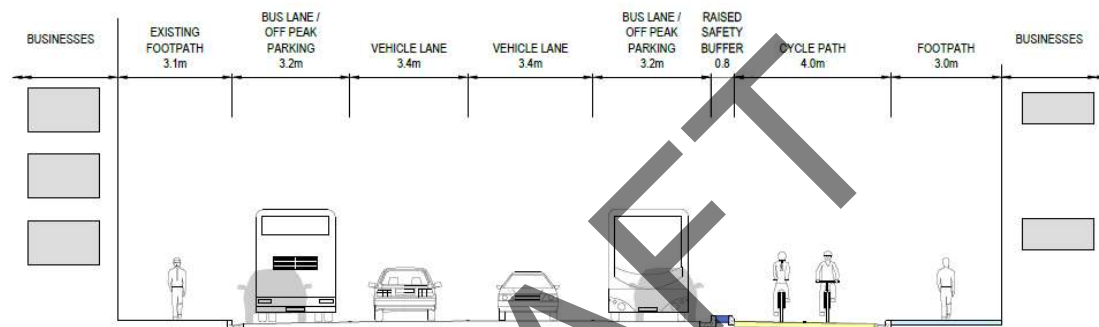
5.13.1.2 Thorndon Quay Design

The general proposal for Thorndon Quay is to reallocate road space to provide:

- One general traffic lane in each direction
- A peak period bus lane in each direction which will be available for car parking in off peak periods
- A dedicated, off-road cycle path on the eastern side
- Raised buffers and amenity areas.

The proposed typical cross section for Thorndon Quay is shown in Figure 5-22.

Figure 5-22 Proposed Thorndon Quay Cross Section



Pedestrian and cycle crossings of Thorndon Quay will also be improved (incorporating raised signalised crossings), as well as the addition of landscaping and other amenity improvements. The precise design of the crossings will be reviewed during detailed design.

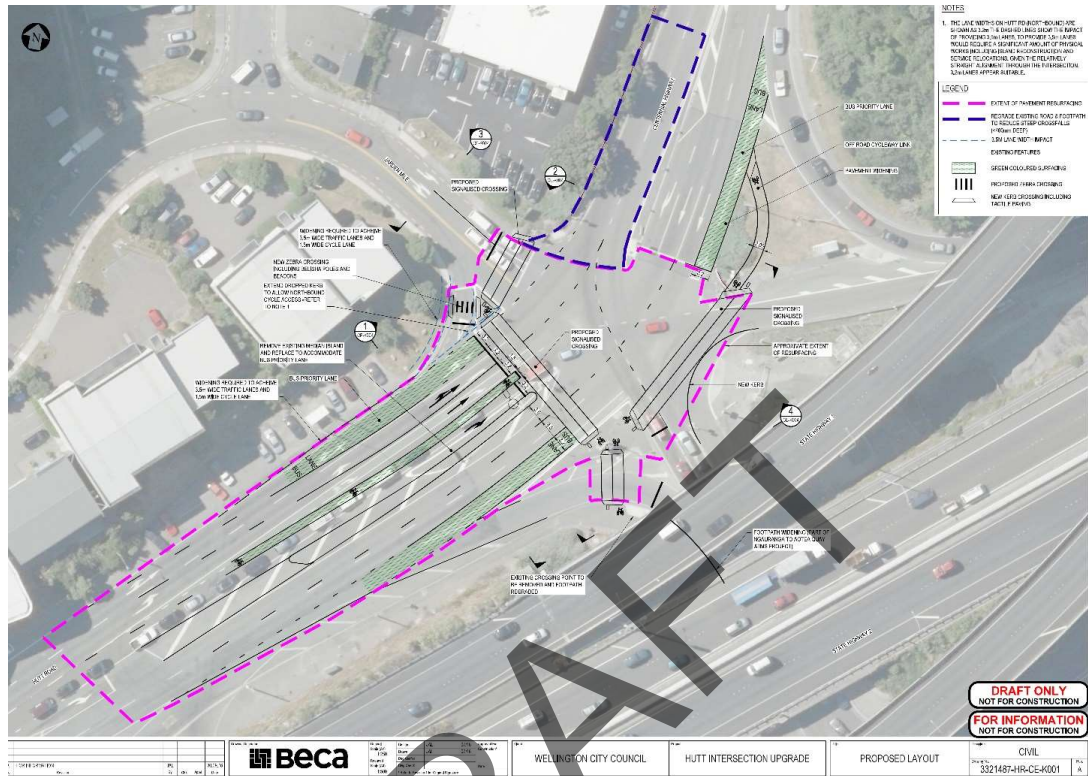
The locations of most pedestrian crossings will tie in with relocated bus stop locations. The crossings are proposed to be located prior to the bus stop in each direction. This results in passengers crossing behind the buses and hence reducing potential delays to the onward journeys of the buses once those passengers have alighted. This will also improve safety, as it makes pedestrians more visible as they cross and are not hidden by the departing buses. To improve the attractiveness and experience of waiting times, increased amenity around bus stops will be provided where possible.

5.13.1.3 Hutt Road/ Jarden Mile Intersection Upgrade

The preliminary design for the upgrade of the Jarden Mile intersection was based on a specimen design of the Hutt Road interchange prepared for WCC in 2016. This is shown in Figure 5-23.

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Figure 5-23 Specimen Design for the Hutt Road / Jarden Mile Intersection



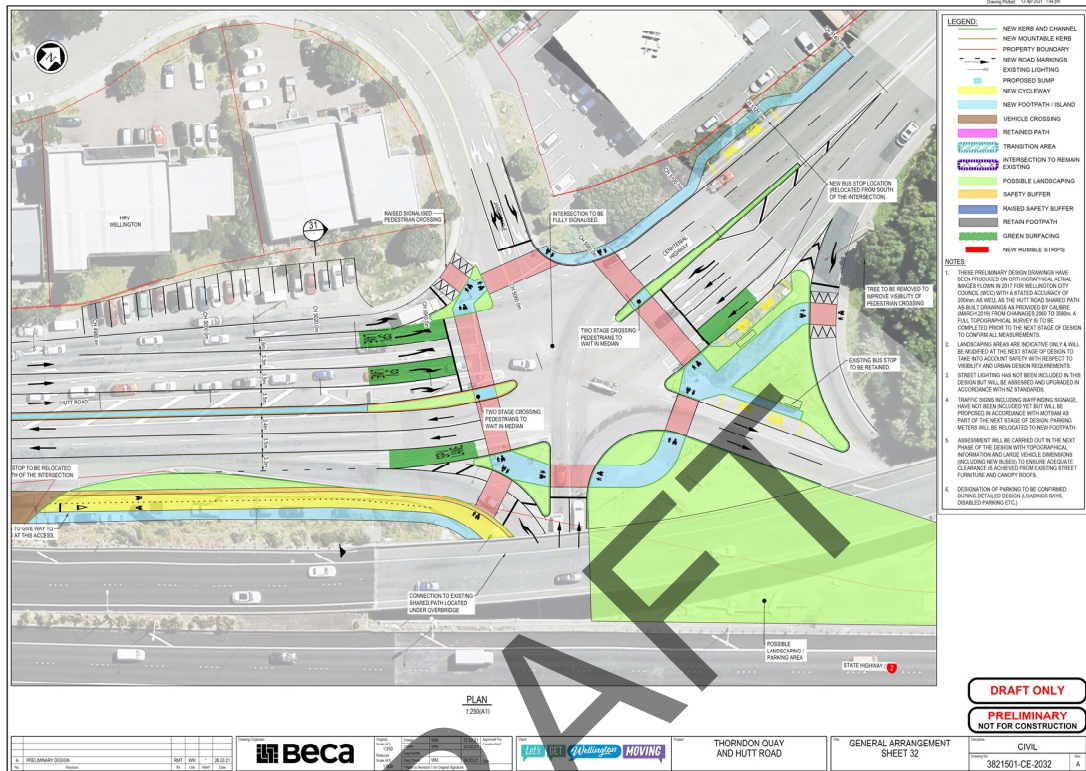
This design was reviewed to check for consistency with the current proposals for the corridor, and a number of revisions made as follows:

- Bus stops relocated
- The northbound approach lanes were reassigned, including the removal of the central cycle lane converting to a bus lane
- Pedestrian and cyclist crossing facilities have been improved by providing designated crossings and increasing the sizes of the islands
- The northbound SVL lane on Hutt Road was terminated approximately 200m prior to the intersection, to allow for safe lane changing/weaving prior to the development of the multiple lanes at the intersection.
- Raised crossings have been incorporated in the design.

The revised design proposed is shown in Figure 5-24. It should be noted that consideration will be given to making the pedestrian crossings on Hutt Road and Centennial Highway staggered in detailed design. This is to reduce the risk of a pedestrian or cyclist on the crossing proceeding straight through from one half to the other thinking that it was a continuous crossing.

The decision on whether a raised crossings are to be provided, how this is best done (e.g. raising individual crossings or raising the whole intersection), and a consideration of any safety consequences of the changes, will be considered further during detailed design.

Figure 5-24 Proposed Preliminary Design for the Hutt Road / Jarden Mile Intersection



5.13.1.4 Hutt Road/ Onslow Road Intersection

The current seagull layout at the Onslow Road intersection is proposed to be fully signalised providing a secure crossing for cyclists who are currently not catered for. This will address safety issues associated with the right-hand merge with southbound traffic. The revised design will provide a secure crossing for cyclists who are currently not catered for. The main cycle/ pedestrian pathway will also be widened.

It is proposed to combine the southbound through and right movements into one lane since space at this intersection is constrained. Split phasing will be necessary at the intersection to restrict right turn filter movements. Further design and discussions will need to take place during next phase of design to confirm this arrangement is safe and explore whether a right-turn lane could be retained by narrowing the shared path through the intersection.

The intersection requires future-proofing to enable a future pedestrian connection to the pedestrian footpath further up Onslow Road. Connecting Onslow Road footpaths is currently being investigated by WCC, and is a high priority project in its Long Term Plan.

5.13.1.5 Hutt Road/ Tinakori Road Intersection

Raised crossings are proposed at the Tinakori Road intersection to provide a safer crossing environment for both pedestrians and cyclists.

5.13.1.6 Mulgrave Street/ Thorndon Quay/ Thorndon Quay Intersection

This intersection is proposed to be fully signalised, in order to reduce the safety risk for the currently unsignalised left turn movement from Mulgrave Street to Thorndon Quay which has

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reduced visibility due to the acute angle of the intersection as well as mature trees. The proposed revisions will also assist bus movements in and out of the adjacent Lambton Quay Bus Interchange.

5.13.1.7 Aotea Quay Turnaround Facility

A roundabout on Aotea Quay is proposed to allow trucks to turn around following installation of the median on Hutt Road which will restrict the ability for all traffic to turn right.

An existing WCC proposal for a roundabout design (see Figure 5-25) was reviewed to check if there are any issues that may impact upon the integration into the preliminary design. This identified that there is no space to provide a footpath on the seaward side of the road/ roundabout, as the fence line is hard up to the existing road with rail sidings on the other side. There were also safety concerns associated with the seagull configuration due to the nature of the vehicles that will be pulling into the fast, through lane.

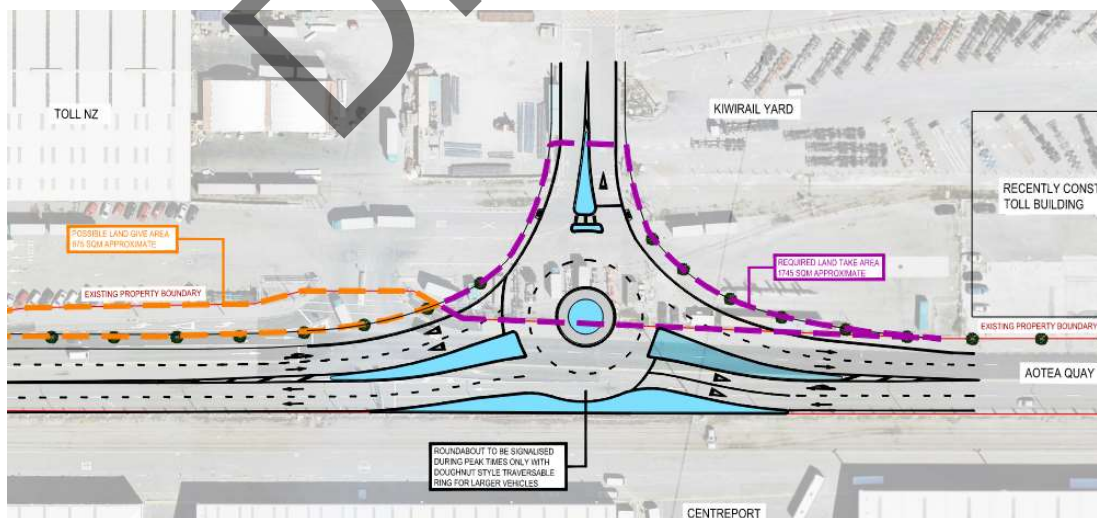
A full roundabout design controlling all movements is therefore proposed, as shown on Figure 5-25. A speed review will be undertaken during detailed design to confirm whether the posted speed limit along Aotea Quay should be reduced from the current 70km/h to 50km/h.

The roundabout design will incorporate part-time traffic signals which will typically only be used when emergency events take place at the nearby Sky Stadium. The requirement to stop traffic is understood to be an existing emergency management operation. Pedestrian crossing provision will be determined during detailed design.

Changes to Aotea Quay will be done in conjunction with KiwiRail and Waka Kotahi, to align with the Single User Terminal project. It is possible that an alternative turn around facility is adopted if this is found to be a better overall solution.

The exact design of the roundabout will be confirmed in detailed design. There may be opportunities to change to a hook turn arrangement or other solution. As part of the detailed design, pedestrian facilities will also be confirmed.

Figure 5-25 Proposed Aotea Quay Roundabout (Revised Design)



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5.13.1.8 Improvements to Pedestrian Crossing

It is proposed that all existing pedestrian crossings on Hutt Road will be raised. The locations of most pedestrian crossings will be adjusted to tie in with the relocated bus stop locations. As part of these improvements, it is envisaged that sufficient space for pedestrians waiting to cross be made.

The existing pedestrian crossing on Hutt Road near Rangiora Avenue is proposed to be signalised and have a raised pedestrian crossing.

5.13.1.9 Improvements to the Hutt Road Cycleway

The potential conflict between cyclists on the cycleway and vehicles entering/ leaving properties on the eastern side of Hutt Road is a key issue that has been considered during the preliminary design phase. A number of serious or significant issues as well as minor issues were identified in the recent WCC safety audit of the Hutt Road cycleway. The more serious issues focused on access/ egress to businesses along the south-eastern side of the corridor. These predominantly identified issues with vulnerable users on the shared use facility and for cyclists.

One of the key recommendations in the Hutt Road cycleway safety audit was to investigate improving cyclist safety at accesses through the installation of passive and active warning measures to raise awareness and mitigate the risk. Identifying and improving visibility lines has also been a key consideration. This issue will be addressed by limiting all vehicles exiting the businesses units along the south-eastern side of the corridor to turn left only. U turns will only be permitted at designated locations, where designated right turn lanes are provided within the central median. Vehicle tracking indicates that only a car with a trailer can perform U turns, whereas an 8m rigid truck would not be able to perform this manoeuvre.

It is proposed to retain the flush median from Sar Street to Aotea Quay. A raised median is proposed from Aotea Quay through to Jarden Mile with strategically placed breaks to allow for business access and to control the locations of U-turns. The U-turning risk could potentially be mitigated further through the use of electronic warning signs triggered by the presence of vehicles in the U-turn bays.

5.13.1.10 Structures

No additional structures are currently proposed, and the proposed design does not impact on these structures. It is proposed to have only a single lane under the overbridge section at the Aotea Quay overbridge.

5.13.1.11 Land and Property Acquisition

All road design changes are proposed to take place within the existing legal boundary of the road, with the exception of works on Aotea Quay. Hence no land or property acquisition is required for the majority of the project.

5.13.1.12 Parking Provision

The removal of existing angle parking on Thorndon Quay and replacing with parallel parking has now been implemented. The project will involve some further reduction in the number of, and changes to the design of, existing on street parking.

The overall effect of the project on the number of parking spaces in the future is estimated to be:

- Thorndon Quay – 382 spaces (i.e. prior to the recent WCC angle parking changes which removed around 140 spaces) / proposed 250-260 spaces
- Hutt Road – existing 133 spaces / proposed 110-130 spaces.

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Analysis of demand for parking provision prior to the removal of angle parking in Thorndon Quay indicated the reduction in provision would be accommodated. The number of spaces provided will be confirmed after detailed design is completed. It is anticipated these changes will be supported by a parking management plan.

5.13.1.13 Urban and Landscape Design Considerations

LGWM is currently developing a programme wide Urban Design Framework (UDF) that will be developed in parallel to the TQHR masterplan work being undertaken through detailed design. The urban and landscape masterplan for TQHR will be important to guiding solutions to meet the project's intent and vision.

The preliminary design proposals will need to be tested through the next design phase to reflect the developing LGWM UDF, as well as the more detailed thinking that will occur in detailed design.

The UDF will not be completed in full prior to detailed design starting. Therefore, the designers will be required to work collaboratively with LGWM and its partners to ensure adequate urban design and landscape elements have been considered throughout the design process including the early phases.

Urban design, landscape and aesthetic considerations will need to be developed through solutions that deliver value for money through detailed design. CPTED, Safety in Design, Maintenance in Design and Whole of Life Costs (i.e. not just capital costs) will also need to be considered within the urban design and landscape detailed design process.

The detailed design will need to be prepared in accordance with contract requirements.

5.14 Construction Methodology

The nature of the works primarily consists of the relocation of kerb lines, some patch structural changes to suit the new alignments, followed by the resurfacing and new lining. As such it should be relatively easy to split the works into linear sections for phasing.

The key constructability issues will exist around accommodating and managing high traffic volumes expected during construction. The project is likely to be broken up into construction areas such as the upgrade of existing roads/ intersections (Thorndon Quay), and the upgrade of existing roads/ intersections (Hutt Road) with associated tie-ins to existing roads. Works on Aotea Quay are anticipated to be constructed first, prior to works on Thorndon Quay or Hutt Road, in order to minimise impacts on traffic operations during construction. Night construction will take place on Aotea Quay, where this is practical and cost effective.

Performance criteria can be set for all traffic management plans including for sealing surfaces, minimum paved width, maximum delays for all traffic, particularly the traffic on SH1 and minimum standards for pedestrian and cyclist facilities in conjunction with the LGWM partners.

A workable construction sequence including temporary intersection and road arrangements will be developed at the detailed phase to demonstrate the feasibility and set baseline performance criteria for traffic management.

5.15 Property Impacts

It is currently proposed to keep within the existing legal boundary of Thorndon Quay and Hutt Road. The proposed Aotea Quay roundabout will extend outside the existing road boundary. No land acquisition is considered necessary other than at this location.

The impact on Crown Land currently held by KiwiRail and extents needed to implement works on Aotea Quay will be determined as the overall design progresses. The current defined impact is indicated on the preliminary design drawings.

5.16 Performance of the Preferred Option Against Investment Objectives

The performance of the preferred option has been considered against the Investment Objectives and associated KPIs defined in Chapter 4. This is summarised in Table 5-7 and indicates that the project will largely achieve the investment objectives.

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Table 5-7 – Performance of the Preferred Option Against Investment Objectives

Investment Objective	Measure	Baseline	Target	Predicted Impact	Achieves Investment Objective?
1	Increased demand for bus services by 2026	950 passengers in the morning peak 2-hour period (southbound), and 1,000 in the evening peak 2-hour period (northbound)	1,000 passengers in the morning peak 2-hour period (southbound), and 1,100 in the evening peak 2-hour period (northbound)	1,100 passengers (a 17% increase) in the morning peak 2-hour (southbound), and 1,190 (an 18% increase) in the evening peak (northbound)	Yes
	Improved bus service travel times by 2026	14 minutes travel time in the morning peak 2-hour period (southbound) and 9 minutes travel time in the evening peak 2-hour period (northbound) n.b. These times exclude bus stop dwell time	Reduce by 5 minutes in the morning peak 2-hour period (southbound) and by 1 minute in the evening peak 2-hour period (northbound) n.b. These times also exclude bus stop dwell times	8 minutes in the morning peak 2-hour period (southbound) and 9 minutes in the evening peak 2-hour period (northbound) <i>A further 2.5 minutes time saving at bus stops is predicted to occur in the morning and evening peak 2-hour periods</i>	Yes (when bus stop time savings are included)
2	Improved Level of Service for non-car modes by 2026	LoS D for walking	LoS C on Hutt Road; LoS C/D on Thorndon Quay (Northbound/Southbound)	LoS C on Hutt Road; LoS C/D on Thorndon Quay (i.e. Northbound/Southbound)	Yes
		LoS F for cycling	LoS F/B on Hutt Road (Northbound/Southbound); LoS F/C on Thorndon Quay (Northbound/Southbound).	LoS F/B on Hutt Road (Northbound/Southbound); LoS F/C on Thorndon Quay (Northbound/Southbound).	Yes
		300-1,600 cyclists/day on Thorndon Quay	50% increase	1200-3,000 cyclists/day on Thorndon Quay	Yes
3	Reduce the safety risk along Thorndon Quay and Hutt Road for all road users by 2026	2.6 DSI crashes per year for vulnerable users	Reduce vulnerable user DSI crash risk by 20%	1.9 DSI crashes per year (28% reduction)	Yes
		1.5 DSI crashes per year for all vehicles	Reduce vehicle DSI crash risk by 10%	1.3 DSI crashes per year (10% reduction)	Yes
4	Improved Amenity/ Healthy Streets index by 2026	M3/P1	M3/P2	MP3/P2	Yes
		2-3,000 pedestrians/day on Thorndon Quay	20% increase	Likely to be a 30-50% increased on Thorndon Quay	Yes
5	Broadly maintain truck travel times between Jarden	7 minutes travel time in the morning peak 2-hour period (southbound); 5 minutes travel	Maintain	5 minutes in the morning peak 2-hour period (southbound); 5	Yes

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Investment Objective	Measure	Baseline	Target	Predicted Impact	Achieves Investment Objective?
	Mile and Aotea Quay by 2026	time in the evening peak 2-hour period (northbound)		minutes in the evening peak 2-hour period (northbound)	

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5.16.1 Economic Analysis of the Preferred Option

An economic appraisal of the preferred option has been undertaken in accordance with the Waka Kotahi EEM procedures (2019 Update)²⁰. The appraisal also incorporates key changes included in the new Waka Kotahi Investment Decision Making Framework (IDMF), which consists of the Monetised Benefits and Costs Manual (MBCM). The purpose of the economic evaluation is to calculate the benefit to cost ratio (BCR) for the project.

The further transport modelling and analysis which formed the basis of the economic evaluation is described in the report contained in Appendix K. The assumption which underpin the results summarised below are explained in Appendix L. The following key benefit streams have been assessed for the recommended option:

- Cyclist crash cost savings
- Health benefits for cyclists
- Vehicle operating cost (VOC), travel time and bottleneck delay savings for all motorised vehicles on the corridor, as well as those diverting onto alternative routes
- External delays for southbound traffic in the morning peak period associated with increased traffic on the re-routing onto SH1 which is currently at capacity (the average delay has been attributed to all SH1 for the purposes of simplifying the assessment)
- Travel time savings for existing and additional bus users using bus lanes/ SVLs and from the improved bus stop designs and reduction in the number of bus stops
- Bus reliability benefits
- Pedestrian amenity benefits.

It should be noted that there are anticipated benefits associated with the expected increase in theoretical capacity of the corridor resulting from a greater number of people moved along the corridor (in particular via public transport). However, these benefits have not been formally calculated as it falls outside of the MBCM framework, and would require consideration of wider network issues.

The economic analysis has been undertaken based on the modelling outputs where there is no change in trip departure time for traffic travelling on SH1 between the SH1/SH2 interchange and the Hawkestone Street off-ramps over the modelled AM peak periods (6am-10pm). The cost of this additional delay has been accounted for as part of the external delay assessment and added to SH1 traffic. This represents the “opportunity cost” for someone travelling earlier / later than their ideal departure time. In reality, these trips may be undertaken earlier or later than the current traffic flow profile in order to avoid the peak where SH1 is at capacity.

It is anticipated that traffic will re-route from TQHR to SH1 as a result of the reduction in capacity on TQHR. The extent of the re-routing will be dependent on factors such as the level of congestion, location of destination in the CBD and user preferences, therefore two scenarios have been assessed to understand the range of potential impacts:

- ‘Top End’ Scenario – modelled level of diversion from TQHR to SH1 and alternative routes; people travel at the same time, but some choose a different route to avoid congestion on TQHR

²⁰ Waka Kotahi NZ Transport Agency have released updated economic guidance as of August 2020. This business case uses the previous EEM procedures, as per recommendations from Waka Kotahi.

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- 'Bottom End' Scenario – No diversion from TQHR to SH1 and alternative route; people travel at the same time and continue to take the route they currently use (Hutt Road).

Table 5-8 summarises the total discounted benefits predicted for the preferred option and indicates that the BCR sits between 0.4 and 1.8. This range represents the likely lower and upper bound assessments of the project.

Table 5-8 Benefit Streams and Overall Benefit to Cost Ratio (Based on a 40-year evaluation period)

Benefit Stream	'Bottom End' Scenario (\$M) unless otherwise stated	'Top End' Scenario (\$M) unless otherwise stated
Crash cost savings	5.5M	5.5M
Cyclists' health benefits	72.2M	72.2M
General traffic travel time and bottleneck delay savings – Thorndon Quay Hutt Road	-87.8M	79.8M
General traffic travel time and bottleneck delay savings – SH1 + Alternative Routes	0	-105.8M
General traffic VOC savings	-0.6M	13.4M
Bus travel time savings	20.3M	20.9M
Bus reliability benefits	8.7M	8.7M
Pedestrian amenity benefits	1.7M	1.7M
Total Benefits (NPV)	20.0M	96.4M
Total Costs (NPV)	54.8M	54.8M
First-Year Rate of Return (FYRR)	-0.7%	4.2%
Benefit to Cost Ratio (BCR)	0.4	1.8

A BCR of 0.4 is considered to be conservative, as some diversion away from Hutt Road is to be expected, given the congestion that is predicted to occur (along Hutt Road) if no rerouting occurs. The travel time forecasts also do not reflect any significant mode shift (i.e. the demand assumed is fixed), which is also likely to result in an underestimate of economic benefits.

5.16.1.1 Wider Economic Benefits

WEBs refer to the indirect impacts of transport improvements on economic productivity and output that are additional to benefits that accrue directly to transport users. They may include agglomeration benefits brought about by providing a quality cycle route into Wellington and benefits from increased spend on accommodation, food, and other activities by tourists.

WEBs have traditionally not been measured for projects which provide bus lanes/ SVLs and walking and cycling improvements. This project is likely to support some WEBs, such as improved agglomeration economies and increased labour supply benefits, however, they have not been quantified. If they were included, this would only increase the BCR, it is therefore a conservative assumption to exclude these benefits. It should also be noted that LGWM are currently examining WEBs at a programme wide level.

| Economic Case – Options Development and Assessment |

5.16.1.2 Sensitivity Testing

Whilst the modelling and economics has used 2026 as the primary evaluation year, the transformational nature of the LGWM programme, and the resulting land use change in the CBD (i.e. more residential/employment use and less parking provision) is also likely to further encourage greater use of bus services. A number of other potential ‘up-side’ factors exist, with the expected wider network improved level of bus service, land use change, e-bike uptake, TDM tools like pricing and parking supply etc. It is likely therefore that the benefits of the whole (the LGWM programme) will be greater than the benefits from the sum of the parts (of which TQHR is just one part).

Sensitivity tests have been undertaken of the evaluation of the preferred option as per the modelled results (i.e. ‘Top End’ scenario only), and these are summarised in Table 5-9.

The sensitivity testing suggests that there is a strong likelihood that the recommended option would retain a positive BCR under the sensitivity testing scenarios considered. If there were greater benefits or reduced costs, an increased BCR can be achieved.

It is acknowledged that the connection to Te Ara Tupia is currently unfunded and is not provided for within the funded Ngā Ūranga to Pito-one project. This lack of connection could therefore potentially reduce the growth in the number of cyclists which have been assumed to use the TQHR project.

It should be noted that, even if multiple down-side risk materialised, such as lower growth in bus patronage, lower growth in cycle demand, or even slightly negative general traffic benefits, the BCR is likely to still remain above one. Conversely, a BCR well in excess of five could arise if multiple up-side risk materialised.

Table 5-9 Sensitivity Test Results – Impact on BCR

Sensitivity Test	BCR
Base BCR for ‘Top End’ Scenario (see Table 5-8)	1.8
95 th Percentile Capital cost	1.6
High cycle growth / Low cycle growth	4.5 / 1.0
Bus patronage (+/-20%)	1.9 / 1.7
25% reduction in traffic diverting to SH1	1.5
60 year evaluation period	2.1
3% discount rate / 6% discount rate	2.1 / 1.3

5.16.1.3 Additional Sensitivity Test of Effect of Potential Changes in Trip Departure Time

The economic analysis has been undertaken based on the modelling outputs where there is no change in trip departure time for traffic travelling on SH1 (i.e. the ‘Top End’ scenario). The cost of this additional delay has been accounted for as part of the external delay assessment and added to SH1 traffic. However, in reality, these trips may be undertaken earlier or later than the current traffic flow profile in order to avoid the peak where SH1 is at capacity. An additional sensitivity test has therefore been undertaken such that trips are delayed to a time where there is no impact of external delays on the scheme (i.e. there is no additional cost associated with spreading the peak). This additional sensitivity test is summarised in Table 5-10.

| Economic Case – Options Development and Assessment |

Table 5-10 Additional Sensitivity Test for Trip Departure Time Changes

Benefit Stream	'Top End' Economic Analysis (\$M)	No Costs Associated with Peak Spreading (\$M)
Crash cost savings	5.5M	5.5M
Cyclists' health benefits	72.2M	72.2M
Non bus travel time and bottleneck delay savings – Thorndon Quay Hutt Road	79.8M	79.8M
Non bus travel time and bottleneck delay savings – SH1 + Alternative Routes	-105.8M	-53.2M
Non bus VOC savings	13.4M	13.4M
Bus travel time savings	20.9M	20.9M
Bus reliability benefits	8.7M	8.7M
Pedestrian amenity benefits	1.7M	1.7M
Total Benefits (NPV)	96.4M	148.9M
Total Costs (NPV)	54.8M	54.8M
First-Year Rate of Return (FYRR)	4.2%	8.6%
Benefit to Cost Ratio (BCR)	1.8	2.7

5.16.1.4 Additional Sensitivity Test of SH1 Travel Time Changes

Given the potential range of diversion for SH1 traffic, a further additional sensitivity test has been undertaken on the external delay for SH1 traffic required to result in a BCR of 1.0. The results of this additional sensitivity test is provided in Table 5.11. This indicates that on average approximately 150 seconds of external delay is required for all SH1 traffic is required to result in a BCR of 1.0. This equates to approximately a 35% additional travel time between the SH1/SH2 interchange and Hawkestone Street off-ramps during the modelled AM peak (6am-10am).

| Economic Case – Options Development and Assessment |

Table 5-11 Sensitivity Test of SH1 Travel Time Changes – Impact on BCR

Benefit Stream	'Top End' Scenario (\$M)	SH1 Travel Time Increased to BCR=1.0 (\$M)
<i>External delay for SH1 traffic</i>	<i>90 seconds</i>	<i>150 seconds</i>
Crash cost savings	5.5M	5.5M
Cyclists' health benefits	72.2M	72.2M
Non bus travel time and bottleneck delay savings	-26.1M	-52.9M
Non bus VOC savings	13.4M	0
Bus travel time savings	20.9M	20.9M
Bus reliability benefits	8.7M	8.7M
Pedestrian amenity benefits	1.7M	1.7M
Total Benefits (NPV)	96.4M	56.1M
Total Costs (NPV)	54.8M	54.8M
Benefit to Cost Ratio (BCR)	1.8	1.0

It is important to note that that average delay has been apportioned to all SH1 traffic during the modelled AM peak (6am-10pm), whereas, in reality this delay would only be experienced by those during the peak periods when SH1 is at capacity resulting in greater potential delays than stated for these vehicles.

It should also be noted that a 60-90 second increase in SH1 travel time, in the context of a 30-minute trip that has highly variable travel times on a day-to-day basis, is considered to be so small that it would not be perceived by the average road user. Conversely, if travel times were to increase by ten minutes for a journey that currently takes 20 minutes, then this would be material.

5.16.2 Investment Profile

When evaluating the investment case for this project, the GPS requires Waka Kotahi and those applying for Waka Kotahi funding to demonstrate how investment shows alignment with the outcomes and priorities sought through the GPS. The Waka Kotahi Investment Prioritisation Method (2021-24) has been used for this assessment.

5.16.2.1 GPS Alignment

Results alignment is an assessment against the outcomes sought from the GPS. There are four rating bands – Low, Medium, High, and Very High – each with criteria specific to the activity class. Given the multi-modal nature of the project, the improvements have been assessed against several activity classes including public transport, walking, and cycling. The results alignment is summarised in Table 5-12.

| Economic Case – Options Development and Assessment |

Table 5-12 GPS Results Alignment

GPS Strategic Priority	Assessment
Safety	High - The Recommended Option will provide both pedestrians and cyclists with dedicated facilities that will increase safety and improve the level of service and in effect attractiveness and convenience of these modes. This will contribute to eliminating pedestrian and cycling interactions with higher-speed traffic volumes and reduce the likelihood and severity of incidents.
Better travel options	High - An assessment of existing Level of Service and future Level of Service under the Recommended Option was undertaken to understand how the option will contribute to addressing several objectives including perceived deficiencies. The Recommended Option addresses these deficiencies as part of the design and process, and significant gaps prioritized for delivery.
Climate change	High - As detailed in the Economic Case, the Recommended Option is forecast to generate a growth in cycling numbers from the current situation.

5.16.2.2 Scheduling

Scheduling indicates the criticality or interdependency of the proposed activity or combination of activities with other activities in a programme or package or as part of a network. Table 5-13 shows the assessment against the Recommended Option.

Table 5-13 Scheduling Assessment

	Assessment
Criticality	Medium - Need to undertake this activity in order to deliver/ prepare for remainder of programme/package where its implementation is to begin in 2024 NLTP
Interdependency	Medium - Activity/combination of activities is part of a programme, package or another investment, but relies on the delivery of another phase or activity in the 2021 NLTP period before being actioned • Non-delivery of proposed activity in the 2021

5.16.2.3 Cost-Benefit Appraisal

The IAF 2018-21 classifies BCR ratings into the following bands:

- Low (BCR of between 1 to 2.9)
- Medium (BCR of between 3 to 4.9)
- High (BCR of between 5 to 9.9)
- Very high (BCR of 10 and above).

The preferred option has an overall BCR of between 0.4 and 1.8, classifying it as Low against these criteria if the 'Top End' scenario is assumed.

| Economic Case – Options Development and Assessment |

5.16.2.4 Overall Priority

The preferred option has been assessed as having a high results alignment in accordance with Waka Kotahi's IPM, scheduling assessment of Medium, and is forecast to have a low BCR rating. This gives the investment proposal a priority order rating of six in the improvement category scale of one to eight, placing the project with an investment profile of HM Priority 6.

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6 Financial Case

The financial case outlines the costs and funding requirements for the preferred option of the TQHR project. It provides assurance that this option is affordable, considering all potential funding sources, and highlights what elements will be funded by the partnering organisations. A cost peer review has been undertaken on the findings presented.

6.1 LGWM Context

Following the development of the RPI for the LGWM programme in October 2018, financial analysis was undertaken by LGWM to understand if the full RPI was affordable in the medium term. While the full programme was supported as a long-term vision, this analysis showed it was not likely to be affordable and would need to be staged.

An Indicative Package (IP) of work was developed for the first stage of the programme, following discussion between the funding partners and the Crown. This IP represented a \$3.7b capital investment and a \$6.4b funding requirement including operating and financing costs (before accounting for Council financing costs) over 30 years.

In March 2019, the IP was endorsed by the Cabinet and in May 2019 the IP was announced by the Minister of Transport supported by the Mayor of Wellington and the Chair of the GWRC.

The March Cabinet paper anticipated detailed business cases would be developed. It made a range of assumptions which would need to be explored in more detail through the subsequent phases, including:

- A cost share of 60% central government and 40% local government
- The central government share was anticipated to come from the NLTF
- Financing was anticipated for the MRT project
- NLTF funding projections included petrol excise duty and road user charges increasing broadly in line with inflation over the 30 years.

6.1.1 Funding Partner Affordability

Due to the scale of the LGWM programme, and other financial pressures facing the partners, it is anticipated affordability will be reassessed at each phase as the programme progresses. The two funding partners, WCC and Waka Kotahi, will fund this project under the interim RFA arrangements being used.

The indicated total cost range exceeds the funding partners budgeted allowance. Both partners will need to confirm how and if this project can be funded.

The indicated costs do not include costings for any upgrades to the existing shared path connecting Hutt Road to Te Ara Tupua. None of the programme's funding partners have made budgetary allowance for this upgrade, so this element remains undeliverable without funding approval.

6.1.2 Financing

The LGWM programme is not the only funding pressure which funding partners have, and hence, funding partners will need to make wider decisions around their cashflow and financing.

For the projects within the three-year programme, of which the TQHR project is one, a central financing mechanism operated by LGWM programme is not intended to be used. This may be revisited as the programme progresses through later phases.

Therefore, the cash funding required of each funding partner will be provided, and it will be up to that partner to determine the financing arrangements for their own cashflow management, if any.

| Financial Case |

It is expected Councils will debt fund the next phase and Waka Kotahi use the NLTF on a pay-go basis.

6.1.3 Funding

The LGWM programme has completed a comprehensive inventory of funding tools in use across the globe. This includes funding tools which fall under the broad categories of “value capture” and “user charging”.

Any use of new funding tools will need to go through the appropriate approvals and in some cases legislative change. No decisions about any potential new funding tools are expected at this stage. It is expected that further investigations into new funding tools will occur ahead of the start of construction. This will involve investigating higher cost components of the programme, as part of clarifying the level of spend the funding partners can commit to.

The Council partners have included funding for the next phases of work expected over the next few years in their long-term plans using their existing rating tools. Sufficient pre-implementation costs are within the Council partners allowance, but implementation (and any upgrades to the connection to Te Ara Tupua) costs are not. WCC will need to confirm if implementation (and upgrades to the Te Ara Tupua connection) costs can be funded.

Waka Kotahi is expected to fund the central government share from the NLTF for the next phase of work. Insufficient funding has been allowed for the costs indicated in the SSBC and Waka Kotahi will need to confirm if both pre-implementation and implementation can be funded. Similarly, no allowance has been made for upgrades to the connection between Hutt Road and Te Ara Tupua.

6.1.4 Funding Partner Cost Shares

Project costs need to be allocated to funding partners, including each local Council (the split of which was not determined for each Council at the IP stage). This allocation sets out what each funding partner must fund and over what period. Cost shares may vary by phase (e.g. business case development, implementation and on-going). A final decision on cost allocation, across the programme, has not yet been made.

There is an explicit LGWM programme work stream to provide funding partners with analysis to assist them in agreeing on the more enduring arrangement for cost allocation. This analysis and partner agreement is expected to be developed using the SSBC analysis once preferred options have been identified. This cost allocation is expected to consider the implications for various groups, including who benefits and who should bear costs.

For the next phase of work the programme will use the interim agreed funding arrangement documented in Schedule 5 of the 2020 LGWM Relationship and Funding Agreement (RFA) to allocate cost shares to funding partners. The RFA is used to allocate costs to partners, on an interim basis, for early delivery programme. For pre-implementation and implementation costs the asset owner bears the project costs with normal FAR (Financial Assistance rates) applying. The split is 49%:51% WCC: Waka Kotahi. Property costs fall to the asset owner, so WCC will fund 100% of property costs.

6.2 Project Delivery Costs

A risk-based cost estimate has been prepared for the recommended option. The financial analysis for the project has been developed in accordance with the Waka Kotahi Project Cost Estimation Manual. The costs have also been subject to a parallel cost estimation review.

The cost estimate for the project in base year values (2021) is summarised in Table 6-1 and in more detail in the Cost Report in Appendix M. This shows that the project has a pre-implementation/ implementation cost in the range of \$55.3m (P50) to \$66.8m (P95).

Table 6-1 – Summary of Capital Costs

Description	Cost (\$)
Property Costs	1,260,000
Pre-Implementation Costs	6,800,000
Base Implementation Fees	4,720,000
Base physical works	29,730,000
Total Base Estimate	42,510,000
Contingency (Analysed/Assessed)	12,753,000
Total Expected Estimate (P50)	55,263,000
Funding Risk (Analysed/Assessed)	11,550,520
Total 95th Percentile Cost Estimate (P95)	66,820,000

The estimate includes a notional \$1.260m (base estimate) (\$1.755m including contingency(P50) / \$2.106m including contingency and an allowance for funding risk (P95)) for property acquisition in the vicinity of the Aotea Quay roundabout. The cost estimate excludes:

- GST
- Escalation from May 2021
- Major market fluctuations
- Central LGWM programme and cross-programme costs (i.e. costs shared across all projects during the business case development and implementation).

6.3 Ongoing Maintenance Costs

These ongoing maintenance costs are additionally captured in the programme level model to provide consistency of assumptions and take account of the additional maintenance cost imposed by the programme on partners and factor into the cost sharing arrangements.

Any lost parking revenue is excluded for this estimate. Who bears the on-going costs will be factored into the final cost sharing agreement between the LGWM partners.

6.4 Cashflow

Costs have not been scheduled in detail, at this stage. The anticipated cashflow for construction of the project is summarised in Table 6-2 (base estimate only). This projection assumes that construction starts in the financial year of 2022/ 23 and takes two years to complete construction.

Cash funding forecasts and requests to the funding partners will need to be developed further during detailed phase of the project. The timing of these funding requests should be manageable, given the relative size of this project to the funding partners' working cashflows.

Table 6-2 Project Capital Funding Plan (\$ Millions)

	2022/23	2023/24	2024/25	TOTAL
Base Estimate	11,274,000	18,735,000	12,501,000	42,510,000

7 Commercial Case

The commercial case for implementing the preferred option involves commercial and financial analysis considering the capacity demand and attractiveness, accessibility and network linkages, affordability of delivering the option and the associated implications. The commercial case is underpinned by the implementation, procurement, and consenting strategies for the project.

7.1 Implementation Strategy

It is recommended that there is a robust pre-implementation phase to confirm procurement and the implementation strategy, including considering staging options if financial constraints dictate. There is a strong motivation, need and support for LGWM to deliver the project as soon as possible, and the implementation strategy will consider how this can be achieved most effectively and efficiently. The strategy will also consider how to gain community support for the project.

The project will need strong ongoing local support throughout implementation. Design and construction will need to commence within the 2021/ 24 NLTP funding round.

The primary activities to be undertaken during the pre-implementation phase are:

- Detailed design and construction support services
- Consenting and traffic resolutions
- Collaboration with Waka Kotahi regarding interface with the Te Ara Tupua Cycleway.

It is estimated that the project will have a construction period of no more than 30 months. This assumes that changes to Aotea Quay are constructed separately to improvements to Thorndon Quay and Hutt Road, in order to avoid unacceptable disruption to traffic operations.

7.2 Implementation Options Considered

Two main implementation options are likely to be practical:

- Full delivery of the entire project (with works on Aotea Quay being constructed separately)
- Staged delivery, such as constructing improvements to Hutt Road ahead of improvements to Thorndon Quay.

A staged approach provides an opportunity to decouple the risks associated with each stage, as delays or issues in one stage would not impact on the other. However, a staged delivery approach could take longer to construct, increases the risk that the project may not have the continuity, and could be more costly due to the doubling up of some services and materials. As such, with the exception of works on Aotea Quay, staged delivery is not recommended unless funding constraints dictate the need for this.

A single professional design, engineering and consents services supplier is recommended to be utilised for project. Pre-implementation services would have a duration in the order of twelve months from the award and will be required to provide design information to support the statutory applications.

7.3 Procurement Strategy

The procurement for the TQHR project is based on LGWM's Three-Year Programme Procurement Strategy, which has been developed by LGWM's Procurement Team. A key focus of the current procurement approach is to ensure the pre-implementation phase progresses with speed, so the LGWM programme timeline can be met.

| Commercial Case |

7.3.1 Pre-Implementation Procurement Options

In accordance with LGWM's Procurement Strategy, the preference of procurement pathway options is to look to vary existing contracts where services are similar, prior to approaching the market.

The right to vary subsequent phases was signalled in the original SSBC contract, subject to a number of caveats (supplier performance, timing and expected cost of projects, market conditions approved funding). Outside of enacting this option, direct appointment of the pre-implementation phase is also a viable option, due to market conditions and the need to accelerate due to the construction start timeframes late-2022.

Improvements to Aotea Quay will be carved off from the TQHR scope and procured as a separate package to ensure the pre-implementation is progressed independently of the main contract.

WCC will be the Procuring Party and Principal for the pre-implementation contract. The recommended pre-implementation procurement pathway will be confirmed in a separate procurement memo to WCC's Delegated Authority.

7.3.2 Implementation Procurement Options

An initial assessment of delivery models indicates the project will likely be delivered via a variant of the Early Contractor Involvement (ECI) model. Suppliers will be selected based on quality and price through the Price Quality Method.

Aotea Quay will be delivered as a separate package to ensure early completion ahead of works on Hutt Road and Thorndon Quay.

The implantation procurement details are further outlined in LGWM's Golden Mile and TQHR Procurement Plan.

7.3.3 Interdependencies and Risks

The project shares some similar objectives to the Waka Kotahi Ngā Ūranga ki Pito-One (Ngauranga to Petone) shared path project, such as to improve active mode facilities, connections, and accessibility for a range of customers. There will be common stakeholders, and their delivery timeframes could be similar too. Whilst both projects will be delivered independently, there are opportunities and benefits for the project teams to collaborate to share information, ideas, learnings and expertise. There may be scope advantages to seek optimisation and collaboration between the two projects, subject to the confirmation of the delivery timing of the Ngā Ūranga ki Pito-One shared path project and any funding agreements.

7.3.4 Communication

The Procurement Plan for the project needs to be communicated to the supplier market. This will aid with obtaining early involvement of contractors both into the early design requirements as well as enabling them to plan adequately to resource the delivery.

An Advanced Notice was advertised on the Government's Electronic Tenders System (GETS) late August 2021 to advise of the upcoming procurement opportunity.

7.3.5 Contract Management

The contracts for pre-implementation and implementation shall be managed in accordance with WCC's standard for of contract.

| Commercial Case |

7.3.6 Consenting Strategy

A consenting strategy has been prepared which identifies project consenting, statutory approvals, environmental considerations and key mitigation areas.

The strategy identifies that the works required to deliver the project will likely be permitted under the Resource Management Act 1991 (RMA). However, the disturbance of potentially contaminated soil could require resource consent under the National Environmental Standards for Assessing and Managing Contaminants in Soil for the Protection of Human Health (NESCS). The use of potentially contaminated soil could require resource consent under Rule 32.2.1 of the WCDP. A site-specific contaminated land investigation at detailed design will confirm this.

Traffic Resolutions and a formal review of speed limit changes will need to be prepared during detailed design.

Further public engagement and public participation on the proposed design will assist LGWM in determining how any adverse effects could be mitigated. It is also recommended that the detailed design is discussed with Mana Whenua to provide a better understanding of any potential cultural effects associated with the proposals.

7.4 Property and Land Acquisition

There is no property acquisition required, other than land to implement the proposed changes to Aotea Quay. A draft property agreement exists between WCC and KiwiRail for the original design of the Aotea Quay roundabout. The land is identified as being Crown land. Further assessments on property acquisition will be undertaken at pre-implementation.

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| Management Case |

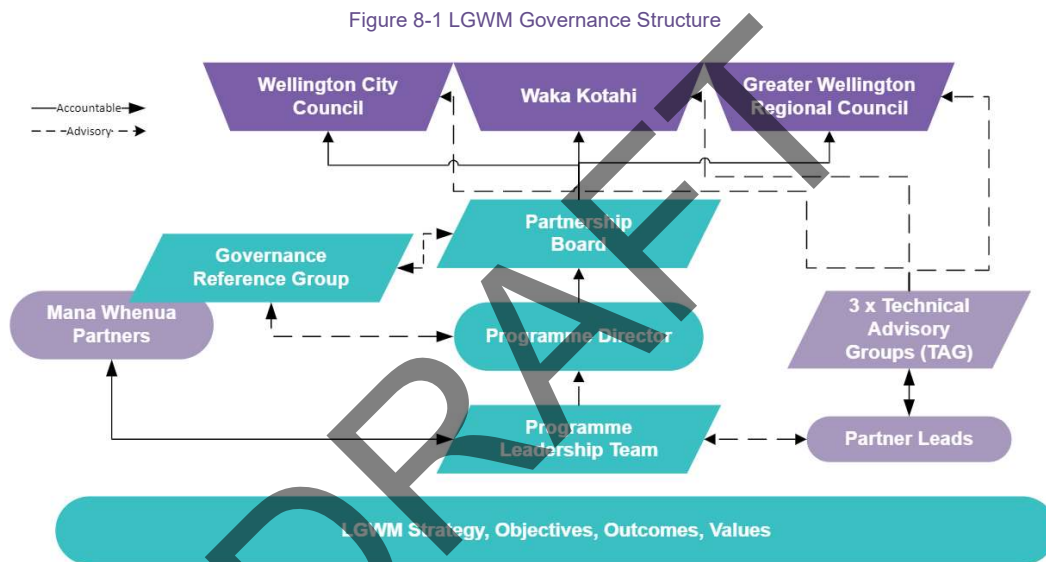
8 Management Case

The management case addresses the achievability of the investment proposal and the planning management required to ensure successful delivery, and to manage project risk. It provides the proposed programme, intended governance structure and key project activities through to implementation. Within the broader intent of the project, the planning and project management will align with and adopt the practices within the LGWM programme.

This management case details the arrangements that will be put in place to successfully deliver the preferred option. These have been developed from the LGWM Programme that considers the planning, development and delivery elements of the TQHR project.

8.1 LGWM Governance and Management

The LGWM governance structure is set out in Figure 8-1.



The LGWM Three-Year Programme Director reports to the Programme Director and is a member of the Programme Leadership Team. The Programme Director is responsible for overseeing the delivery of the LGWM programme.

The TQHR Project Manager reports to the LGWM Three-Year Programme Director and is responsible for the delivery of the project.

8.2 Implementation Programme

A construction phasing strategy will need to be developed during detailed design. Careful consideration will need to be given to the likely construction impacts of the project given the importance of keeping the TQHR corridor operational during the construction of works. As the only full diversionary routes available is the motorway, complete closure of the corridor will be extremely problematic. Works on Aotea Quay will be constructed separately from the works on Thorndon Quay and Hutt Road.

Night-time working will be considered, and may be a cost effective option for works at the Aotea Quay roundabout and some parts of Hutt Road, but is unlikely to be necessary for most of the works.

| Management Case |

Consideration will need to be given at later phases of project to details of the vehicles permitted to use the SVL, the operational and enforcement arrangements, and how it will be delivered. Further traffic modelling will be undertaken to inform this matter.

An indicative programme, which is the basis of the Financial and Management Case, is summarised in Table 8-1.

Table 8-1 Project Programme

Activity	Completion Date
LGWM Board Approval of SSBC	Q1 2022
Detailed Design commences	Q1 2022
Apply for RMA statutory approvals (including traffic resolutions)	Q4 2022
Detailed Design complete and statutory approvals approved	Q1 2023
Construction starts	Q4 2022 for Aotea Quay and Q1 2023 for TQHR
Implementation complete (to practical completion)	Q1 2023 for Aotea Quay and Q1 2025 for TQHR
Implementation phase complete (including 1-year defects liability period)	Q1 2024 for Aotea Quay and Q1 2026 for TQHR

8.3 Ongoing Engagement

The development of a Communications and Engagement Plan for the pre-implementation and implementation phases of the project will form the starting point for ongoing engagement. There are diverse views and conflicting demands between different stakeholders that need to be reconciled. A high level of awareness of these potential interactions is necessary, particularly with the business community.

The project will continue with the approaches established to support this SSBC process, developing these further for the pre-implementation phase. These plans remain living documents and will be amended in response to information gathered through stakeholder, partner and community related engagement.

Key focus areas for ongoing engagement are to seek feedback on detailed design and highlight key changes or enhancements from a design perspective. As part of the implementation phase, it considers how the final design will be presented back and seeking additional feedback on how the proposed construction activities approach and timeframes would occur. It also provides for testing how well certain treatment and responses inter-play.

A number of the tools and processes established will be redeployed for future phases to address the concerns identified to date, particularly the pre-implementation phase, this includes:

- Briefings and presentations
- Updating the LGWM project webpage
- Distribution of information packs
- Advertising and hosting information sessions
- Preparation and distribution of media releases.

| Management Case |

8.3.1 Other Projects

When detailed design for the project is progressed, liaison with the project team involved in engagement on a number of current projects, notably the Low Cost Low Risk projects on Ngauranga Gorge, Single User Terminal and the City Streets project, needs to occur.

Consideration needs to be given to catering for cycle movements to/from the Wakely Road path, and take into account previous investigations into the provision of raised tables at the SH2 intersection slip lane. Engagement with Waka Kotahi's safety team will also need to consider how best to address issues with drivers jumping the queue and turning left avoiding the slip lane across the path of cyclists in the detailed design phase.

8.4 Assurance and Acceptance

Waka Kotahi has documented processes and policies for independent road safety audits, design reviews, etc. These will be used where appropriate in detailed design.

8.5 Contract Management

Contract Management will be undertaken by the obligations set out in the relevant Contracts. These will combine requirements from both WCC and Waka Kotahi contracts as appropriate. On-going contracts will be procured by WCC on behalf of LGWM.

8.6 Cost Management

The LGWM Project Manager is responsible for on budget delivery and the services of a Cost Manager will be necessary during implementation to manage construction expenditure.

Financial management shall be undertaken in accordance with the relevant procedures. As a minimum the consultant/ contractor shall provide the following information in each month of the respective contract(s) for the LGWM Project Manager to update internal financial systems (e.g. SAP) and to support its claims:

- Budgeted cashflow
- Value of work completed in the preceding month and contract to date (including rates and quantities for all items within the contract)
- Forecast value of work completed and revised cashflow through to project completion
- Exception reports outlining the reasons for not meeting any financial targets.

The anticipated target performance measures, on a monthly basis, are that the claim should be within +/- 5% from the previous month's forecast and within the boundary of the agreed cash flow.

8.7 Project Risks and Mitigation Measures

Risk management is a dynamic process throughout the life of a project. A project risk register has been developed and regularly reviewed throughout the SSBC process to manage risks appropriately. This was undertaken in accordance with the General and Advanced Approach of Minimum Standard Z/44 of Amendment 8 of SM030. A risk workshop was held in February 2021 to identify and agree key risks to guide the development of the preliminary design. Project risks were populated as far as possible in real time during the workshop and then finalised following the workshop. A key output of this workshop was identifying and agreeing risks that stakeholders see as being of main concern.

Risk pricing has been undertaken in the @Risk software, using Monte Carlo analysis technique.

| Management Case |

The preliminary design was developed following the Waka Kotahi Safety in Design (SiD) guidelines. A SiD workshop was held on 29 April 2021 during the preliminary design phase. A SiD register has been prepared and updated regularly and is included in the Design Philosophy report.

In the pre-implementation phase, it is likely that the majority of the technical risks associated with obtaining statutory approvals will be transferred to the professional service providers on award. The transfer of risk for detailed design and implementation phases will be determined in the project planning and the finalised in the Procurement Strategy.

The main risks associated with the project, and the current status of mitigation/ treatment, is contained in the risk register included in the PDPS in Appendix J and summarised in Table 8-2. A key risk is that the project cost exceeds the level of affordability.

Table 8-2 Key Project Risks

Risk	Rating	Risk Type	Treatment
Stakeholder	High	The perceived impacts of the project such as visual impacts, proximity to private property, concerns around on-street car parking removal could affect ongoing support for the project.	Ongoing engagement with stakeholders to understand concerns and continue to explore avenues to address community concerns
Financial	High	There is a risk that funding is insufficient for the project. This could be due to assumptions included in the estimate being incorrect; errors or omissions; and/or due to changes in market conditions (including potential Covid related supply chain issues).	Cost estimates have been developed in accordance with Waka Kotahi standards (SM014 and Z/44). Estimate have been independently assessed through a parallel estimate on commencement of detailed design
Operations/ Enforcement of Cycle lanes, bus Lanes and SVLs	Medium	There are risks associated with providing a safe and appropriate environment for a cycle lane and bus lane/SVL users associated with keeping customers informed and managing safe operations and access.	An Operations Plan will need to be developed in the pre-implementation phase. Further transport modelling will be done in detailed design to inform operational decisions of the SVL.
Design	Low	Partners not agreeing on sub-standard designs e.g. due to limited corridor width and range of strategic uses along the corridor.	Detailed design process to identify early on any impingements to design process by corridor width/required departures from minimum standards.
Design uncertainty	Low	There are several areas of uncertainty that require more attention at/before next phase - corridor operation, signal operation, any upgrades to the connection between Hutt Road and Te Ara Tupua and Jarden Mile signal operation and design, modelling revision, and freight in bus lanes.	Detailed design to address uncertainty issues.
Construction	Low	There is a threat that unforeseen issues are discovered during construction. A potential cause of this risk is that incorrect as-built information or insufficient investigation completed. The consequence of the threat is the project cannot be constructed in	Ongoing engagement and consultation with key stakeholders to present construction methodology and identify and resolve issues early. Communication with the public via open days, media coverage and

| Management Case |

		accordance with the resource consent with associated delays, negative media coverage and additional cost	consultation to present construction methodology.
Modelling	Medium	Transport modelling identifies operational/safety issues that require late changes to design, causing additional late costs for rework or construction, unsafe solutions on the corridor, reputational impacts.	Review the intersection design model, design approach is agreed / compliance to required standards within limited corridor widths - gain approvals.

It is recommended that further work be undertaken to address these risks and maximise the successful delivery of the project in detailed design. The Project Manager will be responsible for managing project risk and will maintain the risk register. Risk will need to be managed in accordance with the LGWM programme management plan and will allow for any specific requirements for risk management planning and reporting.

It is anticipated that as part of pre-implementation phase, risk will be managed in accordance with the LGWM project risk framework. A risk workshop and comprehensive risk register will be developed and then maintained for the duration of the project. Risk activities include:

- Risk evaluation (matrix)
- Risk treatment and treatment planning
- Risk escalation, reporting and monitoring
- Integration with WCC's project management systems.

8.8 Change Control and Issue Management

LGWM has documented procedures on scope change with defined financial delegations. These change control will be adhered to during the delivery of the project. Escalation to LGWM project governance will be undertaken as required to ensure that any initiated scope change is given full value-for-money considerations.

Change control and issues register shall operate as an extension to the risk register and track issues as they arise. It is anticipated that a change control and issues management process will be included in the contract documents for the project. Change control and issues management will be undertaken in accordance with the:

- LGWM Programme Management Plan
- Conditions of contract for project-specific issues.

Each issue shall be logged in an issue register, which includes the following information:

- Title and description of the issue
- Date raised
- Status (open, escalated, transferred to the risk register, resolved)
- Primary impact area for the issue (project, personnel, health and safety, corporate risk, stakeholder management etc.)
- Delegated authority for closing out the issue
- Whether the issue is a project-specific issue or another issue
- Level of significance
- Whether the issue requires transferring to the project risk register

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- Remedial action proposed to address the issue
- The date that the issue has been resolved.

8.9 Benefits Realisation and Performance Management

Table 8-3 shows the proposed Benefits Realisation Management Plan. This is aligned to the LGWM Programme plan. It is expected that benefit owners form part of the existing partner group, therefore for consistency, it is proposed that the approach for measuring and realising benefits through and post the project is agreed at pre-implementation phase.

Consideration should be given to integration of benefits realisation reporting with existing reporting and the reporting of other projects being implemented on or adjacent to the TQHR corridor. Reporting of the proposed SVLs, which are a relatively new concept for New Zealand, will be valuable for the wider industry to understand.

Table 8-3: Benefits Management Plan

KPI Measure	Baseline	Expected Outcome	Monitoring	Achieved by
Increase demand for bus services by 2026 and the speed of bus services by 2026.	950 passengers in the morning peak 2-hour period (southbound); 1,000 passengers in the evening peak 2-hour period (northbound)	1,000 in the morning peak 2-hour period (southbound); and 1,100 in the evening peak 2-hour period (northbound)	Post-implementation via boardings data	2026
Increase demand for bus services by 2026 and the speed of bus services by 2026.	14 minutes travel time in the morning peak 2-hour period (southbound); 9 minutes travel time in the evening peak 2-hour period (northbound)	Reduce bus transit times by 5 minutes in the morning peak 2-hour period (southbound) and by 1 minute in the evening peak 2-hour period (northbound)	Post-implementation via journey time data	2026
Improve Level of Service for non-car modes by 2026.	<ul style="list-style-type: none"> ▪ Baseline Walking LoS D ▪ Baseline Cycling LoS F ▪ Baseline Cycling Demand on Thorndon Quay of 300 -1,600/day 	<ul style="list-style-type: none"> ▪ Walking – LoS (C on Hutt Road; C/D on Thorndon Quay (Northbound/Southbound) ▪ Cycling LoS (F/B on Hutt Road; F/C on Thorndon Quay). ▪ Cycle Demand on Thorndon Quay of 1,200-3,000/day 	Post-implementation qualitative assessment / Cycle demand surveys	2026
Reduce the safety risk along Thorndon Quay and Hutt Road for all road users by 2026.	<ul style="list-style-type: none"> ▪ Baseline for vulnerable users is 2.6 DSI crashes per year ▪ Baseline for all vehicles is 1.5 DSI crashes per year 	<ul style="list-style-type: none"> ▪ Reduce vulnerable user DSI crash risk by 20% within ten years using measures aligned with Safe System Principles. ▪ Reduce Vehicle DSIs by 10% within ten years using measures aligned with Safe System Principles. 	Post implementation review of CAS data	2026
Amenity index/ Healthy Streets index aligns with Movement	<ul style="list-style-type: none"> ▪ Baseline for Thorndon Quay is M3/P1 in the Movement and Place Framework. 	<ul style="list-style-type: none"> ▪ Thorndon Quay to be M3/P2 in the Movement and Place Framework by 2026 	Post-implementation qualitative assessment of amenity /	2026

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KPI Measure	Baseline	Expected Outcome	Monitoring	Achieved by
Framework criteria for Thorndon Quay by 2026.	<ul style="list-style-type: none"> ▪ Pedestrian demand on Thorndon Quay of 2-3,000 per day 	<ul style="list-style-type: none"> ▪ Pedestrian demand on Thorndon Quay likely to be 30-50% higher 	pedestrian demand surveys	
Maintain truck travel times between Jarden Mile and Aotea Quay off ramp by 2026	<ul style="list-style-type: none"> ▪ Baseline: 7 minutes travel time in the morning peak 2-hour period (southbound); 5 minutes travel time in the evening peak 2-hour period (northbound) 	<ul style="list-style-type: none"> ▪ Maintain truck travel times. 	Post-implementation via journey time data	2026

8.10 Lessons Learned

Lessons learnt from the project will be fed back into the LGWM project development and delivery lifecycle through several mechanisms and levels of project and LGWM management. It will be the responsibility of the LGWM project manager for this SSBC to complete these reviews with the respective suppliers.

8.11 Reporting Arrangements

The project will be required to report weekly into the LGWM programme through all future phases of development and delivery. Reporting and information transfer is covered with the project management plan, namely: schedule, cost, risk/ issues, health and safety, resourcing, and benefits. On a monthly basis the project manager will provide updates.

8.12 Next Steps

The following elements have been identified as the key next steps for the project:

- Confirming endorsement of the SSBC for the TQHR project
- Procurement of services and progress with pre-implementation, and implementation of the Recommended Option, with an initial focus on critical path activities including land acquisition and statutory approvals
- Engagement with owners and occupiers of properties regarding the proposed changes and engagement feedback
- Undertaking detailed design, including details of accessways and turning points
- Consideration of consider all of the community engagement feedback received and use it to inform the preferred option detailed design
- Engagement with the teams and governance bodies delivering parallel projects which may impact on this project, in particular the Single User Terminal for work on Aotea Quay
- Further modelling/analysis on the potential use of SVLs on Hutt Road prior to implementation
- Confirming the bus lane/SVL times of operation



Appendix A

Connection to Te Ara Tupua

DRAFT



8 February 2022

Thorndon Quay and Hutt Road The Connection

SSBC Addendum



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1 Introduction

The scope of this addendum involves the consideration of options for improving the interface between two shared path projects to be constructed in the near future, the Let's Get Wellington Moving Thorndon Quay and Hutt Road project (TQHR), and the Waka Kotahi Ngā Ūranga ki Pito-one (Ngauranga to Petone) shared path. The two paths will connect together, but the current configuration will not cater for the increased number of users. The assessment has been undertaken utilising the business case approach in order to understand the key problems to be addressed, and the relative performance of each of the options.

Currently the scope excludes the consideration of urban design, crime prevention through environmental design, and accessibility elements. These will be included in the scope for the following phase to ensure that 'The Connection' aligns with the overall vision for Te Ara Tupua, and meaningfully engages with mana whenua through the partnership mechanisms in place through the Let's Get Wellington Programme, and the Ngā Ūranga ki Pito-one delivery alliance.

The Thorndon Quay and Hutt Road project is being delivered under the Let's Get Wellington Moving programme and will deliver corridor improvements for bus public transport and active mode travel to and from the central city. The Hutt Road section of the project starts at the Ngā Ūranga (Ngauranga) intersection just before where the entrance to the Ngā Ūranga ki Pito-one (Ngauranga to Petone) shared path would be created. The current estimated construction start date for the Thorndon Quay and Hutt Road project is 2022.

At the eastern side of the Ngā Ūranga intersection is the start of the Ngā Ūranga ki Pito-one shared path, currently being designed and delivered by the Te Ara Tupua Alliance. The shared path provides for a new foot / cycle bridge across the rail corridor to access the shared path on the seaward side of the rail line. Construction for this project is estimated to be completed in 2025.

The purpose of this Addendum is to consider 'The Connection' between the two projects, as currently the two active mode paths in each project connect to each other, but the standard of the access will not accommodate the forecast user demand. The location under consideration is shown in Figure 1. It includes parts of the scope area for the Thorndon Quay and Hutt Road project and the Ngā Ūranga ki Pito-one shared path where they will interface. The wider importance of 'The Connection' for these shared paths is illustrated in Figure 2.



Figure 1: Scope area

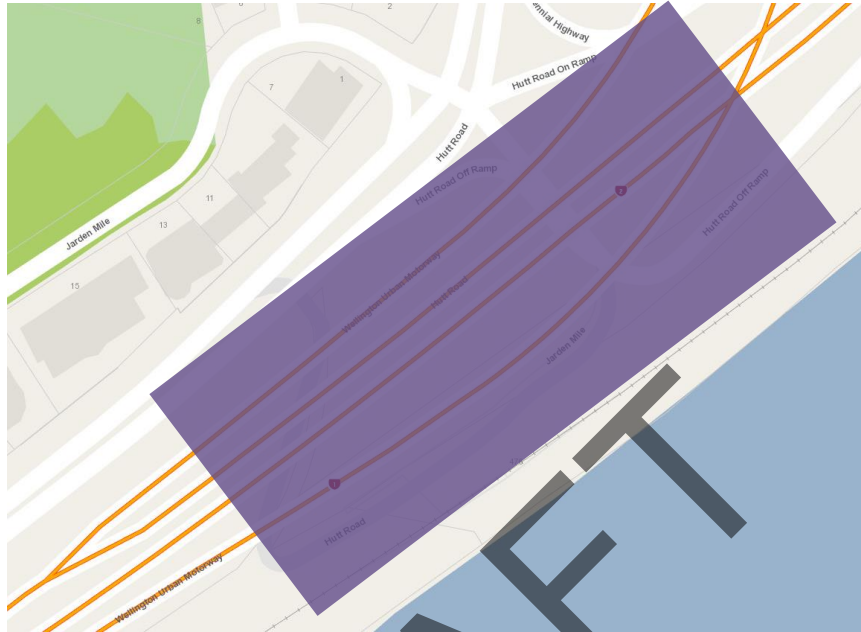


Figure 2: Project Interface with the Thorndon Quay and Hutt Road (labelled Wellington to Ngā Ūranga) and Ngā Ūranga ki Pito-one projects



2 Context

2.1 Thorndon Quay Hutt Road Project

The Thorndon Quay and Hutt Road Single Stage Business Case (SSBC) has considered the best options for the corridor to facilitate growth in bus and active mode travel to / from and through the central city, whilst also accommodating the many people who live and work in the area. Thorndon Quay and Hutt Road is a critical commuter route; it's the busiest bus route



outside of the city centre and the busiest cycle route in the city with more than 10,000 bus passengers and up to 1,300 cyclists on an average weekday.

The Thorndon Quay and Hutt Road project (TQHR) begins just north of the Lambton Quay bus interchange on Thorndon Quay and runs for approximately 1km north to the intersection with Tinakori Road where Hutt Road begins. Hutt Road runs parallel to State Highway 1 and the railway corridor for approximately 4km to the bottom of the Ngā Ūranga Gorge where State Highway 1 and 2 splits (Ngā Ūranga intersection).

With growing numbers of people living and working in Wellington City, the northern suburbs and Hutt City, more people will soon be using Thorndon Quay and Hutt Road to commute by bus / public transport, active modes, and private vehicles. Within the next 30 years, another 130,000 to 200,000 people are forecasted to live in the Wellington Region.

The key objectives for the Thorndon Quay and Hutt Road project include:

- Improving the level of service for bus public transport and providing capacity for growth
- Improving the level of service and reducing the safety risk for people walking and cycling along and across Thorndon Quay and Hutt Road
- Reducing the frequency and severity of crashes
- Improving the amenity of Thorndon Quay to support the current and future place aspirations for the corridor / area
- Maintaining similar access for people and freight to and from the ferry terminal.

2.2 Te Ara Tupua

Te Ara Tupua consists of upgraded walking and cycling facilities between Wellington and Melling in Hutt City and will enable more people to walk and cycle along the Hutt Valley and Wellington transport corridor. The key projects include the walking and cycling upgrades along Thorndon Quay Hutt Road, the new shared path from Ngā Ūranga to Pito-one, and the Pito-one to Melling cycle path (Figure 2).

The improvements along Thorndon Quay and Hutt Road will play a part in helping connect the central city from the Ngā Ūranga interchange area for active modes and bus public transport. With the forecasted growth in cycling (facilitated further through the evolution of e-bikes), walking, micro mobility devices such as e-scooters, and bus public transport use over the next 30 years, the changes to Thorndon Quay and Hutt Road will facilitate the additional capacity for active modes and public transport to accommodate this growth in population and commuting trips. This project will also help to achieve Let's Get Wellington Moving's vision of moving more people with fewer vehicles.

The Ngā Ūranga to Pito-one section of Te Ara Tupua will be built on the harbour's edge from Ngā Ūranga to Honiana Te Puni Reserve in Petone connecting to the Pito-one to Melling section (currently under construction) with a new foot / cycle bridge crossing over the rail lines north of Ngā Ūranga interchange. Funding has recently been approved, and Te Ara Tupua Alliance has been formed to design and construct the project. The project is forecast to be open by 2025.

By 2035, it is estimated that there will be on average over 2800 trips undertaken by bike on the path each weekday, as well as 465 walking or running trips and around 290 trips on e-scooters or other devices. By 2050 it is estimated that there will be on average over 3,800 trips by bike on the path each weekday, 630 walking or running trips and 500 trips on e-



scooters or other devices. Recreational use will see even more people walking, running and enjoying the path at weekends. The growing use of e-bikes is expected to contribute additional users classed as cyclists using the shared path due to e-bikes being used for longer commuting trips and the tendency for e-bike owners to bike longer distances and take more trips per week (compared with conventional cycle owners).

2.3 The Connection between Ngā Ūranga ki Pito-one and TQHR

Linking the Ngā Ūranga to Pito-one section with the upgraded active mode facilities proposed on Hutt Road is key to ensuring a safe and seamless transition between the two projects. The interface between the two projects when completed will not be of a standard to cater for the increased number of users.

Once Ngā Ūranga to Pito-one is constructed and the changes to Thorndon Quay and Hutt Road are implemented, there will be several significant changes to how people travel through the area. The shared path will permit two-way travel by pedestrians and cyclists along Hutt Road, and Ngā Ūranga to Pito-one. This will significantly reduce any demand for cyclists to travel along SH2 north/southbound using the shoulder. It also means that the current configuration which only provides for southbound cyclists to enter Hutt Road will be a significant constraint for a two-way continuous shared path.

2.4 Current Location Configuration

The area where the two active mode paths will join is complex as shown in Figure 3. Currently the separated cycle path alongside SH2 south exits alongside the SH2 southbound offramp and people cycling can continue along Hutt Road along the existing shared path or must negotiate the junction area to travel to the shared path that runs along the highway to the north.

The lane configuration from SH2 is a single exit off ramp that then splits into three lanes. These lanes pass under the overbridge with the left lane providing a dedicated free left turn onto Hutt Road. The other two lanes end at a signalised intersection allowing traffic to enter SH1 northbound towards Johnsonville, Jarden Mile and/or back onto SH2 towards Petone.

Located off Hutt Road and near to the SH2 southbound offramp, is the entrance to a stock effluent disposal facility. The facility is available for disposing of stock effluent, and effluent from self-contained campervans. An underpass provides access to the effluent disposal facility on the seaward side of the state highway(s). Vehicles using the facility then circle back to the SH2 southbound offramp. It is a popular facility as it is the only effluent disposal site in Wellington, and is used prior to accessing the ferries, or the port.

Ngā Ūranga is a key industrial and commercial land-use area. Due to demand, a bus stop is located immediately beside the stock effluent disposal facility entrance on Hutt Road (southbound) and the Ngā Ūranga train station is located on the seaward side of the stock effluent disposal facility site. This bus stop is serviced by both Wellington northern suburbs and Hutt Valley to Wellington City services. The train station is serviced by the Hutt Valley and Melling train services.

No parking is available at the Ngā Ūranga Station. Pedestrians need to access the station by following the existing Hutt Road shared path, under SH2 / alongside the SH2 Ngauranga southbound offramp. The path extends to a subway that provides access to the station platform underneath the up main rail line.



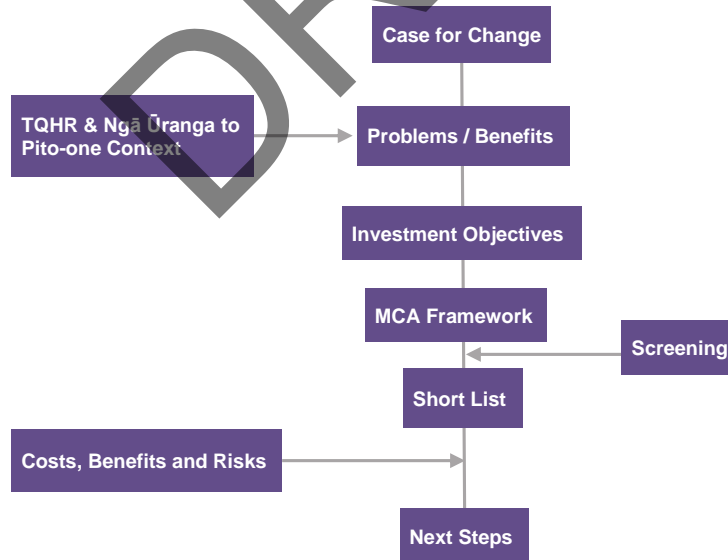
Figure 3: Current Site Arrangement



2.5 Process

The process for undertaking this business case assessment is outlined below in Figure 4.

Figure 4: Process Chart



3 The Connection Problems, Benefits and Project Objectives

3.1 Key Problems

Three key problems were initially identified with the Let's Get Wellington Moving Technical Advisory Group to be addressed for 'The Connection': These identified problems with reduced active user demand resulting from the poor state of the facility, increased safety risk due to the



difference in speed between people cycling and pedestrians, and safety risks with the conflicting uses in the project area. These three problems had similar characteristics that ultimately impacted active mode user demand and so they were consolidated into a single problem statement:

Key Problem - The current state of the existing active mode facility combined with the variability in speeds between active modes and vehicle access results in increased conflict between users, increases real and perceived safety risk and limits attractiveness to increase volumes of active mode users.

The evidence supporting this problem statement is summarised below.

a. Current Standard of the facility

A review of the Crash Analysis System data for the previous five years that showed one on-road minor injury crash involving a person cycling on the road in the area. There was one other recorded non-injury active mode crash within the area of 'The Connection' on the current path, or the shared path along Hutt Road. It is expected that incidences could be higher due to under-reporting for crashes on these facilities.

The area linking the Thorndon Quay and Hutt Road shared path and the Ngā Ūranga to Pito-one shared path is a significant constraint for the forecasted volumes of users. The existing path under the SH2 overbridge at Ngā Ūranga is too narrow for bi-directional travel of high volumes of people cycling with an effective width less than 2.5 metres due to the retaining wall and the traffic lanes running parallel to the path (Figure 5).

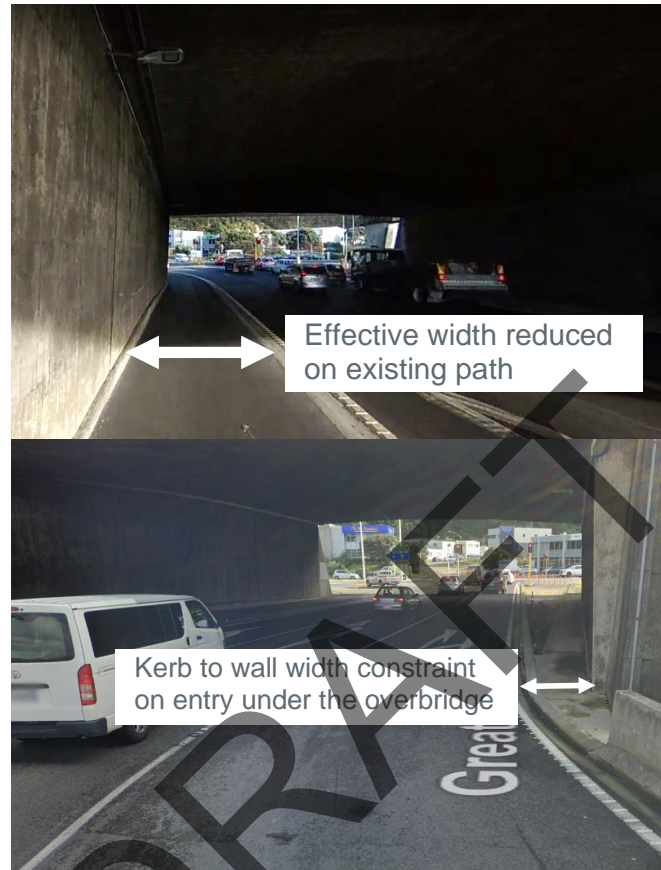
For a regionally significant shared path with anticipated high future use, the current effective width is significantly less than the typical widths specified in the Austroads standards of between 3.0m and 4.0m and wider where the numbers of cyclists and pedestrians are very high or there is a high probability of conflict between users (e.g., people walking dogs, in-line skaters etc).

This constraint escalates the perceived and real risks of using the shared path to connect and maintain a continuous shared path. The risk has the potential to limit the attractiveness of the facility for new users.

Figure 5 also shows the constraint on the northeast side of the overbridge. A path previously located on the northwest side of the overbridge has been closed and removed because of the safety risks. The safety risk was exacerbated by the narrow width between the kerb and the wall on the northeast side of the overbridge. This width constraint is a key consideration in the identification of suitable options as this will limit the extent to which lane width can be configured under the overbridge.



Figure 5: Width Constraints Under SH2 Overbridge



b. Difference in Speeds

Due to the range of users that will be permitted to use the shared paths, the constrained area along 'The Connection' will create a significant risk for different users on the shared path. The mix of users will result in a speed range averaging for pedestrians at 4-5km/h, cyclists at 15-35 km/h depending on ability, e-bikes and other micro mobility devices such as e-scooters and e-skateboards at 20-40 km/h, and mobility scooters at 12-15 km/h. These speed differentials, combined with the constrained environment at the Ngā Ūranga intersection increases the perceived and real safety risk of the existing narrow path, that may discourage future users.

c. Conflict Areas

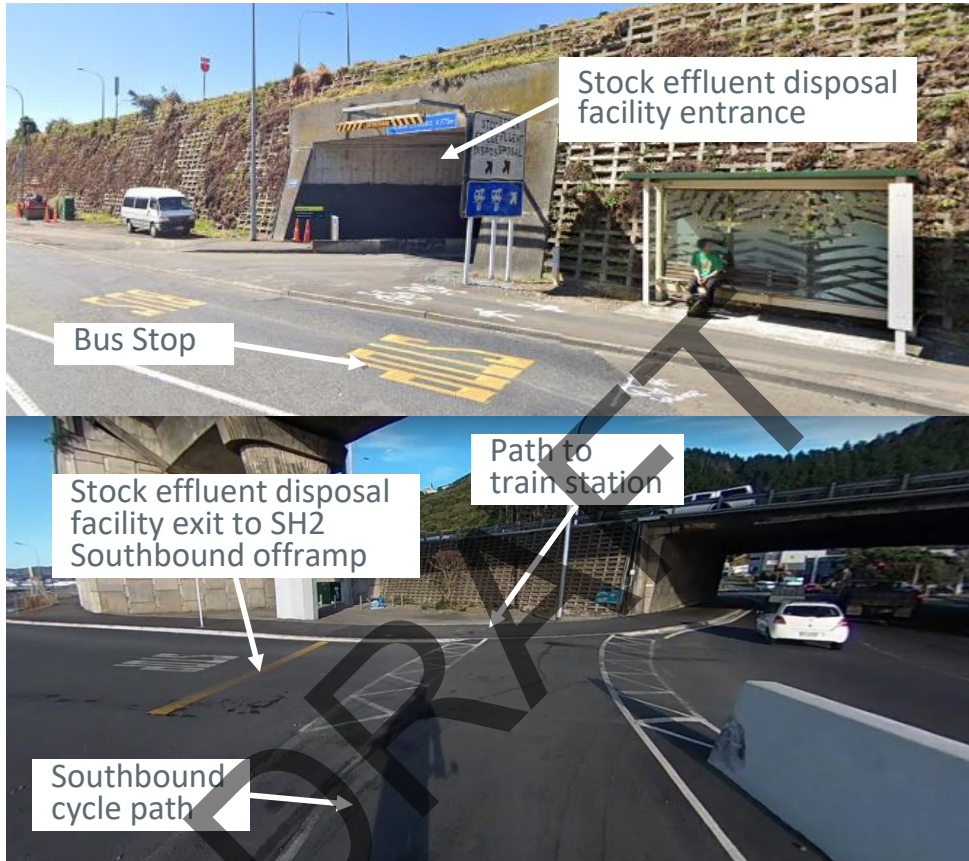
The area is complex and is a high conflict area noting the forecast number of users of the new shared paths and vehicles travelling through to access key destinations. The key destinations include the stock effluent disposal facility, the existing bus stop (Figure 6), Ngā Ūranga Station, Jarden Mile businesses and for KiwiRail work vehicles requiring access to the sidings along the Hutt Valley Line, in addition to the SH1 / SH2 interchange. With the forecast growth in users along the shared paths, the level of conflict will increase with the exposure risk for active modes increasing.

The evidence highlights the complex nature of the area around 'The Connection', as well as the key changes to be implemented through changes to the shared paths. This complexity results in a significant amount of conflict that could deter new users and impact the safe and



efficient use of the shared paths at 'The Connection' point between Hutt Road and the Ngā Ūranga to Pito-one project.

Figure 6: Bus Stop, Entrance and Exit for the Stock Effluent Disposal Facility



3.2 Benefits

The key benefit of successfully investing to address these problems with 'The Connection' have been identified as:

- Improved safety and perception of safety for all users, which is a catalyst for increased active mode users, and thus active mode share.

In achieving this benefit two following benefits aligned to the Thorndon Quay and Hutt Road, and Ngā Ūranga to Pito-one projects will also be enhanced:

- Health benefits from increased active mode share.
- Resilience benefits from creating an additional transport link (additional to the existing road and rail modes) that could also be used in emergencies.
- Access to Public transport (rail via Ngā Ūranga station and bus stops on Hutt Road) between the Hutt Valley, Wellington CBD and locations further north via the Ngā Ūranga Gorge.



4 Evaluation Criteria

4.1 Investment Objectives

In order to effectively assess the different options available for 'The Connection' the following investment objectives were developed:



Investment objective 1: To increase the number of active mode users between Wellington and the Hutt Valley by improving the level of service and perceived safety for active modes;



Investment objective 2: Improve Safety for all users;



Investment objective 3: To improve the connections and integration of active mode infrastructure to public transport and the strategic cycling and walking networks.

These align with the objectives for the Thorndon Quay Hutt Road project:



4.2 Critical Success Factors

In developing and assessing the options for 'The Connection' several critical success factors were identified. These were considered alongside the Investment Objectives as outcomes to progress further for assessment.

- Maintain access to the stock effluent disposal facility and Ngā Ūranga Station area.
- Ensuring that the queue length of the SH2 southbound offramp does not reduce the safety for vehicular drivers.
- Ensure the timing of improvements to 'The Connection' is coordinated with other wider network improvements, such as Aotea Quay Roundabout, Te Ara Tupua etc, as the network will be operating differently on their completion.

4.3 Other Criteria

To ensure consistency of evaluation with the LGWM programme the following additional criteria were included in the evaluation:

- Social, environmental and economic effects.
- Feasibility / delivery / operational characteristics.

4.4 MCA Scoring Methodology

To assess the merits of each option, a multi-criteria analysis was undertaken scoring all the related criteria against identified options. For this assessment a scoring scale of -5 to +5 was used with the guidance in Figure 7 provided to inform the score. Where the benefits truly are



marginal and not differentiators, then a score of 2 across options was justified. Scores were then moderated in a workshop to ensure consistency.

Figure 7: MCA scoring guidance

Score	
5	Substantial benefits and a high degree of confidence of benefits being realised and/or long term / permanent benefits
4	High extent of benefits and confidence of benefit being realised and/or medium - long term benefits
3	Good benefits and/or medium term
2	Low or localised benefits and/or short term
1	Very low benefits and/or very short term
0	No change in benefits, impacts or difficulties from current situation
-1	Few difficulties, very low cost or low impact on some resources/values and/or very short term
-2	Minor difficulties, low cost or minor impacts on resources/values and/or short term
-3	Some difficulties, moderate cost or some impact on resources/values and/or medium term
-4	Clear difficulties, high cost or high impact on resources/values and/or medium - long term
-5	Substantial difficulties, very high cost or substantial impact on resources/values and/ long term / permanent

5 Options Development

5.1 Options Identification

An initial longlist of options was considered, noting that significant changes to the Ngā Ūranga to Pito-one section of Te Ara Tupua were excluded as it has been consented based on its current design. The Do Minimum option for this project was leaving the current link unchanged, or a 'do nothing' option. The options are summarised in Table 1 and shown in graphically in Figure 8.

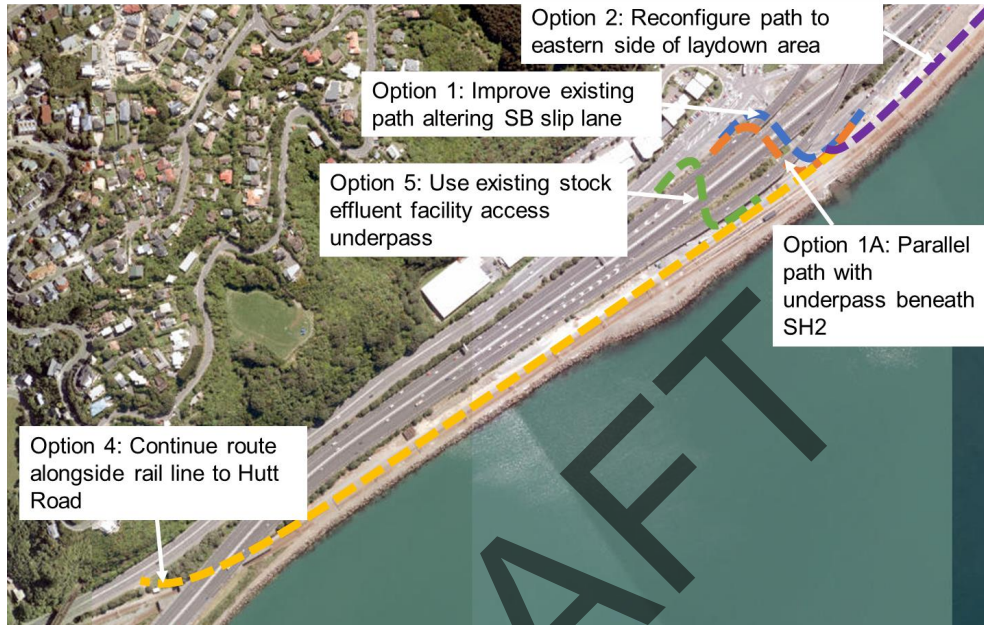
Table 1: Options considered

Option	Description
Option 1	Improve existing path through altering the existing SH2 southbound offramp slip lane onto Hutt Road
Option 1A	New parallel shared path with underpass beneath the state highway
Option 2	Proposed shared path on the eastern side of the laydown area with tie-in into the Ngā Ūranga to Pito-one overbridge, and either the improved existing path on the southbound slip lane (Option 1), or the underpass beneath the state highway (Option 1A).
Option 4	Continue proposed shared path alongside rail line to Hutt Road



Option 5	Use existing stock effluent disposal facility access
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Figure 8: Options considered



Within these five initial options different permutations for the alignment and facilities were considered (refer to Appendix A). These were generally considered as a different sub-option in order to understand the benefits and risks for each sub-option.

Common elements of all options include:

- Adopt a 4m safety zone running parallel to, and measured from, the centre of the closest rail line plus a 3m wide maintenance track for KiwiRail maintenance vehicles.
- That the existing KiwiRail laydown area will remain operational. This laydown area provides KiwiRail with land within the rail designation to store materials, equipment etc for rail activities. This is shown in Figure 9.
- Have lighting to P3 standard, which is similar to the lighting of SH2, with pole heights in keeping with Te Ara Tupua, Petone to Melling shared path projects and the Thorndon Quay Hutt Road project.
- Provision for CCTV to ensure safety for people using the area.



Figure 9: KiwiRail Laydown Area



5.2 Options Assessment

5.2.1 Multi-criteria Analysis

To undertake the multi-criteria analysis a Lead Assessor and Subject Matter Experts were assigned to each of the assessment criteria. The assignment of the Lead Assessor and Subject Matter Experts were based on their expert knowledge for the assessment criteria, and knowledge of the project area. The people engaged were drawn from Let's Get Wellington Moving, Waka Kotahi, Greater Wellington Regional Council, Wellington City Council, as well as the Beca and AECOM consultant team.

Key considerations for scoring each assessment criteria were provided for guidance. This was to ensure consistency of approach when scoring, but also to highlight what key considerations could affect the scores assigned to each option. The scores assigned to each of the options is included in Appendix A.

The multi-criteria criteria analysis was undertaken using several steps:

1. A meeting was held with all assessors to brief them of the project and the requirements for scoring.
2. The assessors then went and scored the options independently.
3. A workshop was held for the assessors to discuss the scoring, the reasons why they gave that score and to seek other feedback from the representation at the workshop to moderate and finalise the score.

The moderation workshop was held with representatives from Let's Get Wellington Moving, Waka Kotahi, Greater Wellington Regional Council, Wellington City Council, KiwiRail, Mana Whenua, Beca, and AECOM on the 1st September 2021. The purpose of the workshop was to obtain a moderated score across the different criteria for the options being considered.



Taking both the Lead Assessors and Subject Matter Expert's scoring into account by averaging the score between them for each category and each option, gave the following ranking shown in Table 2 using the overall score from highest to lowest.

Table 2: Multi-criteria analysis ranking

Rank	Option	Score
1 st	Option 1 Lane space reallocation	8
2 nd	Option 1A New shared path underpass	3
3 rd	Options 2 and 2A Shared path on the eastern side of the KiwiRail laydown area	-10
4 th	Option 4 Continue route alongside rail line to Hutt Road	-11
5 th	Option 1C Slip Lane remains open. (a sub-option of Option 1 reducing cost of slip road retaining wall alterations).	-12
6 th	Option 5 Use existing stock effluent disposal facility access	-35

5.2.2 Fatal Flaws Assessment

As part of the assessment of the various options the partners to the business case identified fatal flaws in some of the initial options, which excluded them from further assessment. The options where fatal flaws were identified are summarised in Table 3.

Table 3: Options Excluded

Option	Reason for exclusion
Options 2 and 2A Shared path on the eastern side of the KiwiRail laydown area	Options that generally impacted the KiwiRail laydown area, either through a reduced area for operation, or impedance for KiwiRail equipment and vehicles were considered a fatal flaw. KiwiRail indicated that separation of their laydown area from the rail tracks by the cycleway was not acceptable operationally and for land ownership reasons.
Option 4 Continue route alongside rail line to Hutt Road	This option would require use of the tunnel at the southern end to connect shared path users with Hutt Road. However, on the basis of KiwiRail wanting to use the tunnel at the south end for bringing together the upmain and downmain lines, the conflict with shared path users would be too great to overcome and was discounted.
Option 5 Use existing stock effluent disposal facility access	This option was not considered feasible. The current geometry of the underpass is too narrow to safely accommodate both heavy vehicles and campervans, and shared path users. These safety concerns were considered too great to overcome unless the stock effluent disposal facility was moved to an entirely new location, which is also considered to be unfeasible due to the extreme difficulty in finding a new location suitable for this type of facility.



5.2.3 Short-list Options

On the basis of the MCA analysis, and the views of KiwiRail on the impacts on their operations, two short-list options were identified, being Options 1 and 1A. During the cost estimating process of these options, a third option (Option 1D) was identified, which was a variation to Option 1, resulting in a reduction in cost to Option 1.

i. Options 1 – SH2 southbound offramp lane space reallocation

The reallocation of lane space on the SH2 southbound offramp (reference Option 1) would provide additional width for a bi-directional shared path connection with the Ngā Ūranga to Pito-one shared path through the closure of the dedicated left-hand turn lane on the SH2 southbound offramp. This lane area would be reallocated to shared path users, increasing the current effective width under the overbridge to meet current standards. Some widening would be required for the existing cycle path in order to accommodate the width for a bi-directional shared path. The existing egress from both the stock effluent disposal facility, and the KiwiRail laydown area would be consolidated into a single lane egress.

ii. Option 1A – New shared path underpass

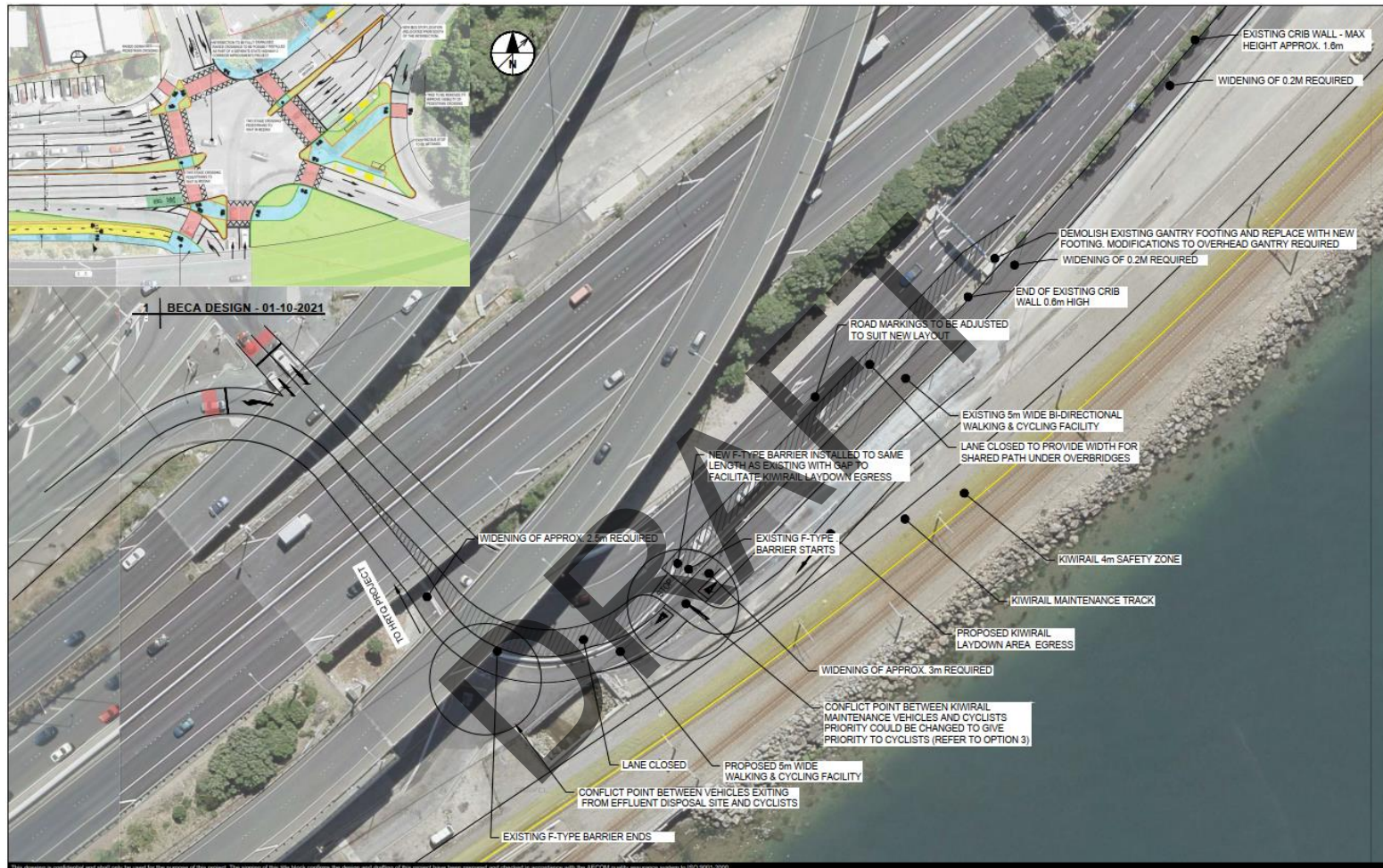
The second option (reference Option 1A) would install a new underpass beside the existing path under the state highway overbridges for connecting the shared paths. Some widening on the rail side would be required to the existing SH2 cycle path, adjacent to the SH2 southbound offramp, in order to accommodate the width of a bi-directional shared path. The egress for the KiwiRail layover area would be moved to the southern end of the site. The existing lane configuration on the SH2 southbound offramp would remain unchanged.

iii. Option 1D – Lane space reallocation

Option 1D is a variation to Option 1 in that the space required for widening the existing path adjacent to the SH2 southbound offramp would come from land on the rail side of the existing path, thereby negating the need to relocate an existing gantry and to re-build an existing retaining wall. Closure of the dedicated left turn lane on the SH2 southbound offramp would still be required.

The concept drawings for Option 1, Option 1A and Option 1D are shown below in Figure 10, Figure 11, and Figure 12. These concept drawings can be viewed in more detail in Appendix C.

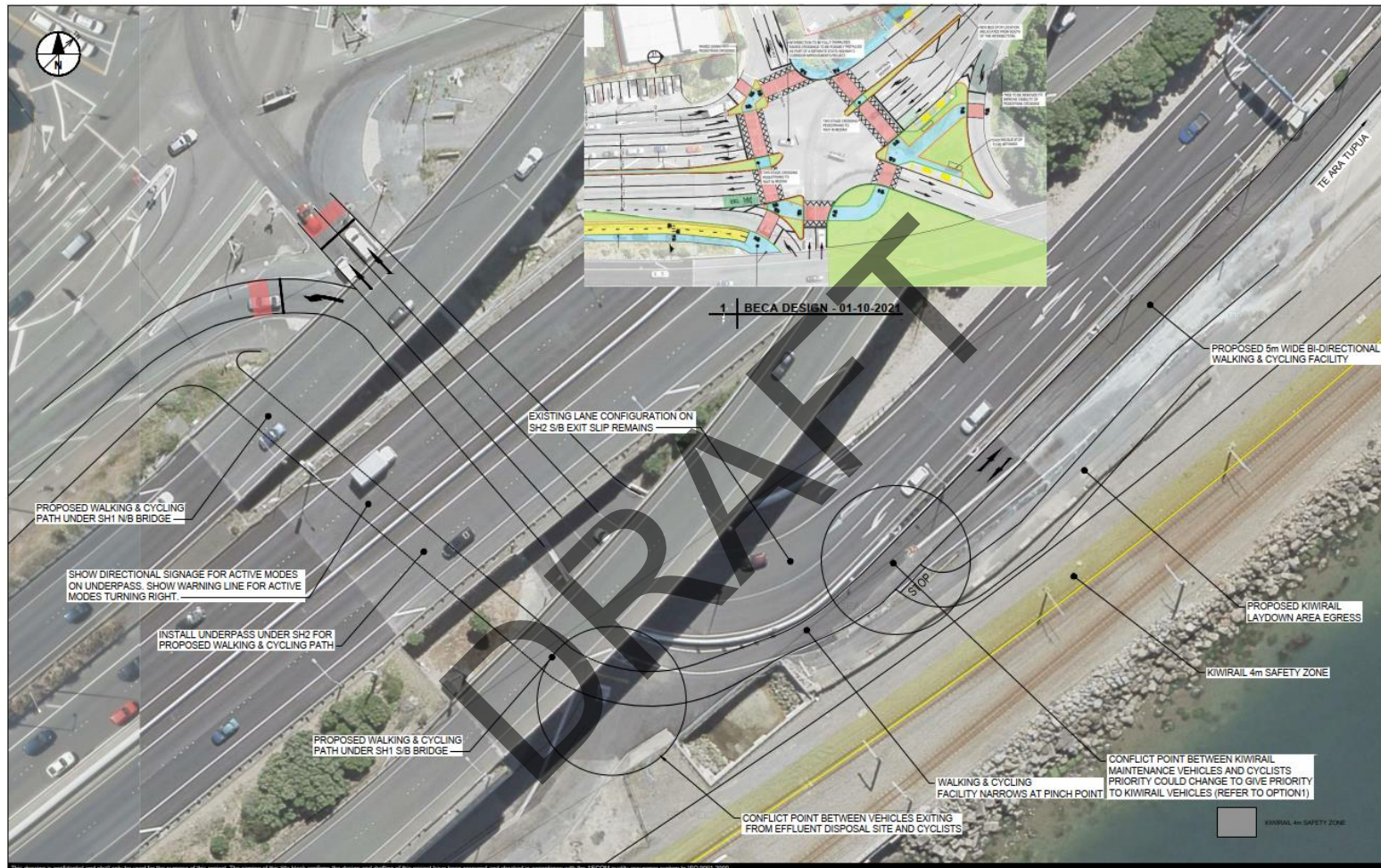
Figure 10: Option 1 - Improve existing path altering SB slip lane



This drawing is confidential and shall only be used for the purpose of this project. The signing of this site block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2000.

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Figure 11: Option 1A Parallel Path with Beneath SH2 Overbridge



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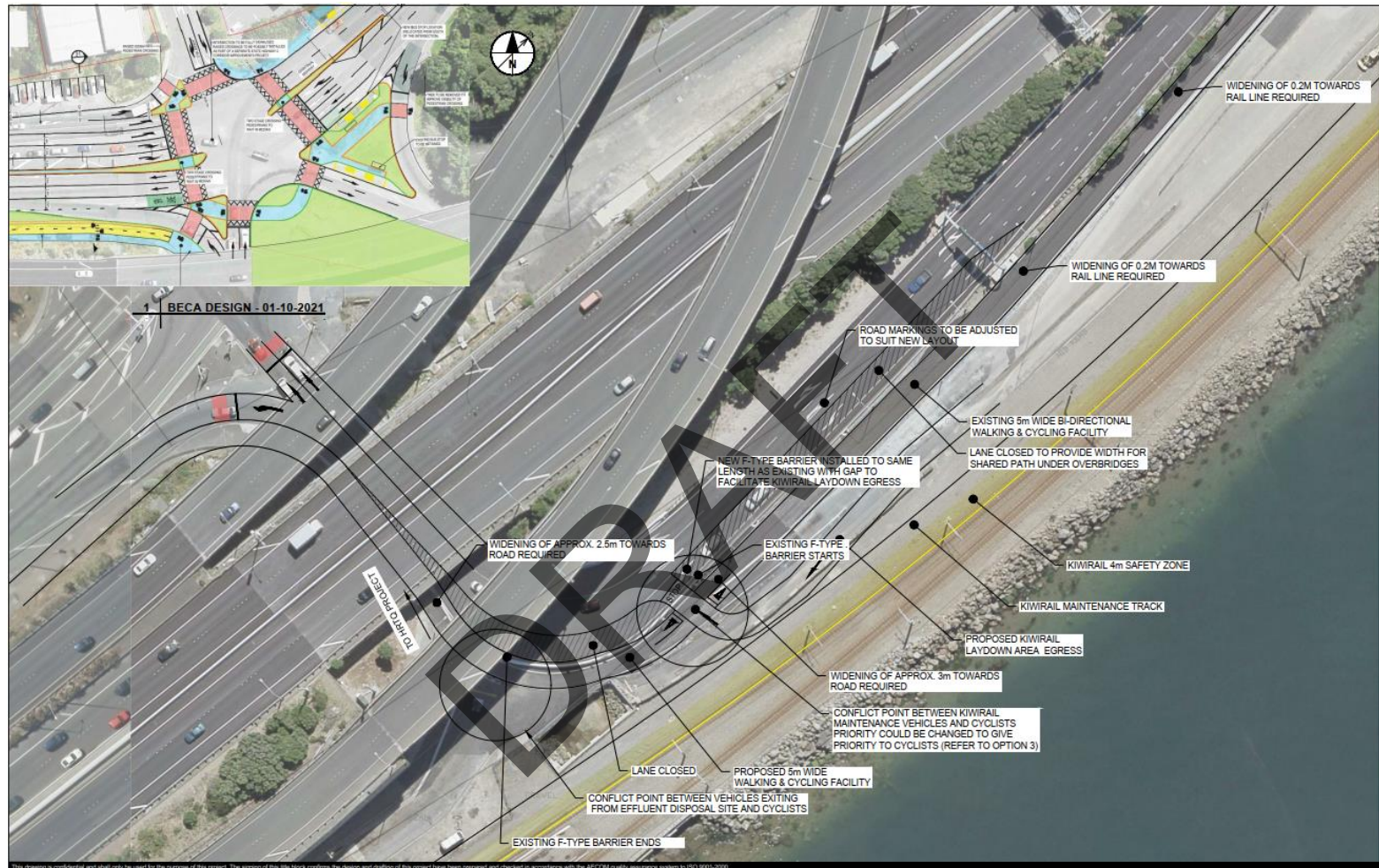


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A	Aug-21 FOR DISCUSSION

PROJECT NUMBER	
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SHEET TITLE	
CONCEPT PLAN OPTION 1A	
SHEET NUMBER	
CI-0003	

Figure 12: Option 1D - Variation to Option 1 to Improve Existing Path Altering SB Slip Lane



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5.3 Short-list Options Assessment

5.3.1 Costs

Indicative Outturn Cost Estimates for Option 1, 1A and 1D were prepared following the Waka Kotahi Cost Estimate Manual SM014:

- Option 1 - Lane space reallocation - \$4,750,000
- Option 1A - New shared path underpass - \$12,880,000
- Option 1D - Lane space reallocation - \$3,468,000.

Out-turn costs for the indicative estimates include property costs, consultant costs and fees and client managed costs for the remaining phases of work. The SM014 cost estimates can be referenced in Appendix D. The cost estimate informing Option 1A has been derived from the parallel cost estimate.

The parallel cost estimate noted that further engineering inputs are to develop the cost estimate for Option 1A. The inputs are required to understand the complexity of the tunneling below the state highway without major disruption, and the location of the underpass to the existing crib walls and abutments.

5.3.2 Benefit Cost Ratio

Preliminary health benefits for 'The Connection' project have been estimated based pro rata on the length of the Te Ara Tupua economics for Option 1 (and by inference Option 1D), and Option 1A. The pro-rata length of 'The Connection' is 400 metres, with the new active mode users derived from the estimated users of the Ngā Ūranga to Pito-one section to Hutt Road. Table 4 shows that the estimated NPV benefits and disbenefits for each option.

Health benefits are similar for both Options 1 and Option 1A. This is based on the length of the facility, and the number of new users that are anticipated as a result of its construction.

Disbenefits for each option are different across the benefit categories. Option 1A being the underpass has a neutral benefit against Travel Time and Safety costs for traffic, but the monetised disbenefit for Traffic Disruption is based on the likely length of closure of the motorway in order to construct the facility. Option 1 has a neutral impact on traffic disruption, but instead has disbenefits for traffic and safety. Traffic will have some additional delays through queuing resulting from the removal of the left-turn slip lane. Safety disbenefits are associated with a higher incidence of rear-end crashes through the increased length of queues.

Table 4: Net present value (NPV) health benefits

Option	Health Benefits (NPV)	Travel Time	Safety	Traffic Disruption
Option 1 – lane space reallocation	\$ 10.9M	-\$ 7.24M	-\$ 0.2M	-
Option 1A – new underpass	\$ 10.9M	-	-	-\$ 5.6M

The costs, benefits and disbenefits for the two options have been evaluated and combined with the BCR analysis for the TQHR project. The combined BCR is summarised below in Table 5. The overall BCR is similar with the difference between the overall costs and benefits for the two options.

Table 5: TQHR and The Connection Combined Options BCR

Option	NPV Benefits	NPV Costs	BCR
TQHR + Option 1 – lane space reallocation	\$ 96.1M	\$ 59.6M	1.6
TQHR + Option 1A – new underpass	\$ 101.6M	\$ 63.3M	1.6

The two options are expected to have no significant impact on the overall BCR for the Wellington to Hutt Valley / Te Ara Tupua facility. An initial analysis against the Wellington to Hutt Valley / Te Ara Tupua economics for the two options result in no change to the BCR of 1.1.

Intrinsically however 'The Connection' will further the key benefits of the Te Ara Tupua facility. These include providing a high quality shared path for people of all ages and abilities to use, promoting healthy lifestyles, and more sustainable and affordable transport choices. Supporting increasing numbers of users will further contribute to shifting people from vehicles to walking and cycling reducing traffic congestion and emissions. For the economy a high-quality facility supports tourism-related cycling and boosts the Wellington regional economy.

5.3.3 Traffic Impacts

The impacts on traffic for the lane space reallocation options (Options 1 and 1D) were considered through traffic modelling using SIDRA. The two options involve the closure of the left-hand slip lane of the SH2 southbound offramp, with the reallocation of the lane space to shared path users. It was necessary to understand at this stage what the impact for queue lengths on the offramp could be with the left-hand slip lane being closed to traffic.

A summary of the modelling assumptions and results are included in Appendix E.

The SIDRA modelling shows a reasonable probability of lane spill from the SH2 southbound offramp into the main SH2 lanes occurring out to 2031. Lane spill from queuing during the peak period has the potential to exacerbate existing delays along SH2 southbound in peak periods. The corridor is sensitive to disruption, and impacts can be potentially severe for motorists commuting during the peak periods in additional delay, and safety risk. The average queues will remain within the length of the slip lane, but the modelling shows the potential for brief periods when the back of the queues beyond the length of the slip lane, and into the SH2 southbound lane.

The modelling assessment was carried out on pre-Covid traffic volumes and didn't consider the Thorndon Quay and Hutt Road project as modelling was still underway. In addition, further assessment is being carried out on the freight movements by a third party and this was not available at the time. The traffic impacts need to be considered in the next phase when all modelling work is finalised. This will help to understand the impacts on different types of users including bus public transport, and freight travelling to the ferries from SH2. In particular, the freight movements to Aotea Quay will be influenced by the changes proposed by TQHR to remain on the state highway reducing these demands on the slip lane.

The extent to which safety impacts can be managed or mitigated will be considered in the next phase. Additional modelling will be able to define more accurately the frequency and impact of queues extending in the SH2 southbound lanes from the lane closure option, combined with optimisation of the intersection. The management or mitigation of these safety risks can then be considered alongside the general impacts for vehicle travel times, and the broader objectives for mode shift and emissions reduction that Te Ara Tupua is looking to achieve.

5.3.4 Risk Assessment and Safety in Design

A Risk Workshop and a Safety in Design (SiD) Workshop was held on 20th September 2021 attended by subject matter experts from Let's Get Wellington Moving, Waka Kotahi, Greater Wellington Regional Council, Wellington City Council, KiwiRail, the Te Ara Tupua Alliance, Beca and AECOM.

The following risks were identified in Table 6 and Table 7, assessed for likelihood and consequences and mitigation actions suggested. The full risk register is attached in Appendix B.

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Table 6: Critical Risks

Risk Description	Likelihood Pre mitigation	Consequence	Risk Level	Mitigation Actions
There is a threat that a reduction in the 3 lanes on the off ramp to 2 causes queueing back onto the State highway creating unmanageable safety concerns, or travel time delays.	Likely	Severe	Critical	Construct new underpass if funding available. Alternative is to monitor and manage the slip road. Undertake further modelling. Consider extending VMS on SH2. Consider reducing speed limit on off ramp.
There is a risk that the speed differential on the slip lane will be large leading to increase in crashes.	Likely	Severe	Critical	Maintain 3 lanes if possible. Enforce speed limits to reduce speed. Look at separation between cyclists and pedestrians. Consider different types of signage. Manage as demand grows.
There is a risk that there is a level of uncertainty about what the future traffic patterns will be.	Likely	Severe	Critical	Undertake further modelling. Monitor traffic once COVID restrictions lifted
There is a risk that construction of the underpass under the State highways is not feasible due to construction restraints, or significant risks around the length of state highway closure.	Likely	Extreme	Critical	Obtain As-Built information from Waka Kotahi archives. Consider jacked installation and ground freezing, use steel cables to lubricate jacking and hand auger. Use existing path. Look at compromise solution.
There is a risk of unforeseen obstacles to construction of the underpass (e.g.) MSE behind the crib wall.	Likely	Severe	Critical	Obtain As-Built information from Waka Kotahi archives. Undertake Geotechnical site investigation
There is a safety risk around using the existing facility (blind corner on the western side).	Likely	Severe	Critical	1) Design with good geometrics 2) Waka Kotahi and Austroads design guidelines. 3) Markings (Yellow double line). 4) Second tunnel (one bound direction per tunnel). 5) Wayfinding signs. 6) Information signs
Covid19 impacts on supply chains and construction price	Likely	Severe	Critical	Considered in the next phase where the impacts can be more fully determined based on the design, and where the allocation of risk can be considered in the commercial, financial and management cases.

Table 7: Safety in Design Risks

Safety Risk Description	Likelihood Pre mitigation	Consequence	Risk Level	Mitigation Actions
There is a threat that the level of service for cyclists would be significantly decreased during the construction phase.	Possible	Moderate	High	1) Ensure some cycling facility during the construction phase. 2) Monitor and manage.
There is a risk that a large amount of construction will happen in the small area during the same time.	Possible	Severe	High	1) Need to check the swept paths for HCVs as part of the construction considerations. 2). Expected that the construction for Option 1/1D takes a couple of months. Option 1A will have a longer construction period. Need to avoid cyclists mixing with trucks and buses. 2) Construction could be as part of the Alliance contract.

6 Recommendations and Next Steps

Based on the assessment it is recommended that both the emerging preferred Option 1/1D providing lane space reallocation under the overbridge to the shared path through closure of the left slip lane, and Option 1A providing the new underpass through the SH2 embankment be investigated further in parallel.

These options were ranked the highest based on the average scores between Lead Assessors and the Subject Matter Experts, and they are acceptable to KiwiRail. The next phase for TQHR is the Pre-Implementation phase and the recommendation is that both options for 'The Connection' are progressed further as part of this contract until any potential fatal flaws for the options are closed out and the preferred option confirmed.

The following should be included in the scope of the Pre-Implementation phase for further investigating the options:

1. Additional modelling will need to be undertaken incorporating the changes to traffic movements after the opening of Transmission Gully, and a normalised post-covid traffic volume through the area has been established. The traffic modelling will provide a better understanding of the options impacts, in particular the queue delays for the slip lane based on Options 1 and 1D. The modelling will allow for optimisation of the intersection and approaches to be assessed, as well as the management or mitigation of any safety and travel time impacts resulting from queues extending into the southbound SH2 lanes.
2. Design considerations in the Pre-Implementation will consider the impact of both options for transport users. Design considerations include managing sightline constraints, potential conflicts between different users such as mobility scooters, urban design, and assessing the land requirements needed for path widening beside the rail corridor and the existing road carriageway.

Sightline constraints and visibility will be assessed for each option at the interface with Hutt Road. The Pre-Implementation will need to consider the design measures

each option can provide for improving sightline visibility along Hutt Road from the shared path. Improving sightline visibility will provide safety benefits for all users of the shared path with differences in speed of travel.

The design concept plans note areas where space constraints require attention, including potential widening of 0.2 metres for the existing cycling path for Options 1 and 1D. These will be confirmed in the detailed design.

3. Feasibility of different construction methodologies for Option 1A, the underpass, should be further investigated due to the significant structural and constructability constraints for the option. Currently anticipated closures of the motorway are based on standard cut and cover methods for underpass installation. Examples of alternative more innovative construction methodologies could include ground freezing and thrusting techniques which have the potential for minimising closures and therefore lessening impact on motorway users.

Continuing the investigation of the underpass in parallel with Option 1 will maximise the time available prior to Te Ara Tupua opening. Sequencing of the changes around 'The Connection' need to align with the opening of the TQHR, and Ngā Ūranga to Pito-one projects that are forecast to be completed in 2024 and 2025 respectively. This time will be maximised by developing the design, construction methodology and time to construct for the underpass due to any fatal flaws in Option 1 being identified.

4. A key objective for 'The Connection' is to contribute to the overall increase of active mode users attracted to Te Ara Tupua. To understand the impact of each option sensitivity testing of the benefits from 'The Connection' will be assessed.
5. A temporary lane closure on the SH2 southbound offramp should be trialed in the next phase to better understand the traffic impacts on the southbound offramp, and queues. The trial should be undertaken once the Transmission Gully project is open to traffic and traffic movements have become consistent. The trial can incorporate traffic signal changes at the intersection to inform the approach to optimisation.
6. The delivery mechanism for 'The Connection' will be considered as part of the Commercial and Management cases. A number of different mechanisms for constructing 'The Connection' are available, including aligning with either the delivery of TQHR, the Alliance delivering Ngā Ūranga ki Pito-one, the Wellington Transport Alliance maintenance contractor, or alternatively a separate procurement approach for delivery. The advantages and disadvantages of the different approaches would be investigated, and an approach to delivery recommended.



Appendix A

Workshop MCA Scores and Rankings

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	Option 1 - Lead Assessor	Option 1 - SME	Option 1A - Lead Assessor	Option 1A - SME	Option 1C - Lead Assessor	Option 1C - SME	Option 2 - Lead Assessor	Option 2 - SME	Option 2A - Lead Assessor	Option 2A - SME	Option 4 - Lead Assessor	Option 4 - SME	Option 5 - Lead Assessor	Option 5 - SME
Overall Score	+3	+17	-3	+13	-3	-7	+5	-7	-1	-3	-6	+3	-25	-47
Overall Score based on average between Lead and SMEs	+8		+3		-12		-10		-10		-11		-35	
Ranking based on average between Lead and SMEs	1		2		6		3		3		5		7	
Ranking after fatal flaws identified	1		2		NA		NA		NA		NA		NA	

NA = Not applicable



Appendix B

Risk Register

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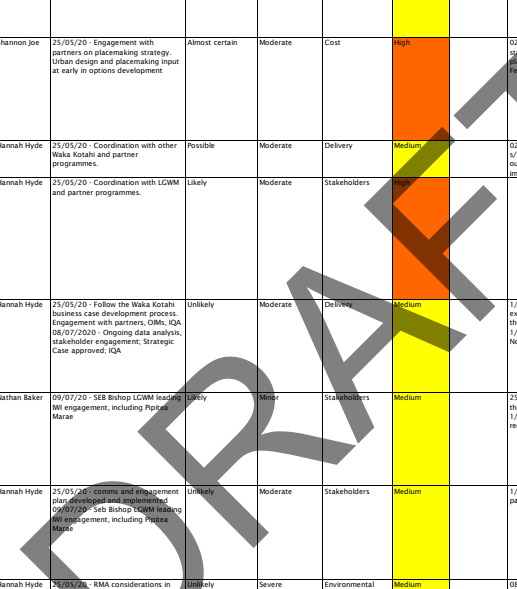
Council 24 February 2022 order paper - Let's Get Wellington Moving - Thorndon Quay Hutt Road single stage business case

Sensitivity: General



Project/Contract Description	Thorndon Quay Hutt Road - The Connection	NZTA Lead	Hannah Hyde
Contract ID	To be inserted	Supplier Lead	Gravim Delivery
Contract Value	Up to \$10M	Supplier Risk Management Specialist (if applicable)	Adam Ashford

Risk Identifier	Date raised (dd/mm/yyyy)	Risk Description (include whether this is a threat or an opportunity)	Risk Cause(s)	Risk Consequence(s)	owning Organisation	Risk Owner	Controls	Current Risk Likelihood	Current Risk Consequence	Consequence Category	Current Controlled Risk Level	Covered by risk acceptable, when implemented	Planned Risk Treatment Actions <i>(None, if more than one treatment action, either)</i>	Treatment Owner(s)	Planned Treatment Implementation	Risk Treatment Progress Updates	Residual (Target) Risk Likelihood	Residual (Target) Risk Consequence	Residual (Target) Risk Level	Risk status	Comments
2	3/17/2020	There is a threat that approvals take longer than expected	The cause of the threat is that the TWG has not been given priority and the project options have an engineering focus, rather than aligning with city aspirations.	The consequence of the threat is additional effort to chase TWG & OIM's additional engagement, poor feedback on inputs, wrong decisions made, poor benefits / outcomes	LGMW	Hannah Hyde	17/04/20 - TWG / OIM spreadsheet letting out workshops and deliverable reviews so that TWG and OIM can manage their workload 1/12/20: TWG and OIM's now have a comments prioritisation register	Unlikely	Moderate	Delivery	Medium				6/30/2020	20/7/7 - HH has been proactively managing input from OIM's and TWG. Raised today that there is a possibility of a new group called "TAG" which may have approval rights. 1/12/20: There is now a TAG group, but we don't need their formal endorsement.	Unlikely	Moderate	Medium	Live-Treat	20/6/7 - risk description updated
10	3/17/2020	There is a threat of a cost increase for the project and whole of life costs	The cause of the threat is changing the funding priority (Covid, etc) market uncertainty (Covid), people availability, high post lockdown gear-up constraints, change of market forces (reduced construction resources in the market due to increased shovel ready programmes), change in political funding decisions.	The consequence of the threat is some projects not proceed, increased costs, programme delays, benefits not realised, reputational impacts, safety benefits not realised	LGMW	Hannah Hyde	25/05/20 - Robust business case methodology with input from stakeholders and partners. Knowledge of market costs. Contractor relationships	Likely	Minor	Cost	Medium		01/05/20 - ACTION: Eric Whitfield to speak with GSI team, to understand market forces impact on business case economic case. SSBC to consider and document possible impacts	Eric Whitfield	6/30/2020	20/7/7 - feedback is that market remains competitive, shovel-ready and other stimulus projects are slow to come to market.	Unlikely	Minor	Low	Live-Treat	16/04/20 - Linked to RD16, RD10, RD59 1/12/20: this risk will be reviewed for whole of project costs at next risk workshop 12/09/20 - RD6, RD59 combined 20/7/7 - residual risk likelihood reduced
16	3/17/2020	There is a threat the preferred option is not aligning with the Placemaking Framework and Amenities Strategy / Urban Design	The cause of the threat is that placemaking has not been given priority and the project options have an engineering focus, rather than aligning with city aspirations.	The consequence of the threat is public complaints, difficulty for approval, benefits not realised, future network impacts and maintenance issues, programme delays, costs, reputational impacts, cultural and community amenities benefits not realised	Beca / WAM	Shannon Joe	25/05/20 - Engagement with partners on placemaking strategy. Urban design and placemaking input at early in options development	Almost certain	Moderate	Cost	High		02/04/21 - ACTION: Develop with key stakeholder engagement, the placemaking/urban design framework for TQHR. Feed into the Prelim Design	Eric Whitfield & Shannon Joe		20/7/7 - Shannon Joe has met with WCC urban design team to discuss placemaking and amenity on the project. WCC support short list options. Further engagement necessary during recommended option development.	Almost certain	Moderate	High	Live-Treat	16/04/20 - Linked to RD17 08/05/20 - RD16, RD17 combined 20/06/20 - changed owner to project team 1/12/20: no agreed placemaking strategy, amenity costs included in cost estimates. Category changed to cost
38	3/17/2020	There is a threat of lack of coordination with other regional projects having an effect on the programme progression of the corridor.	The cause of the threat is the wider effects changes to the Intermodal ferry terminal, in the area of the reassignment traffic to other/Alternative routes during the gorge lane closure	The consequence of threat is programme delays, complaints, reputational impacts, safety impacts for road users	LGMW	Hannah Hyde	25/05/20 - Coordination with other Waka Kotahi and partner programmes.	Possible	Moderate	Delivery	Medium		02/03/2021 - Progress C&E with other project s/ programmes. Share information and design outcomes early, assess journey outcomes implications.	Eric Whitfield	5/30/2021		Unlikely	Moderate	Medium	Live-Treat	12/05/20 - Risk owner changed from Tim Brown to Hannah Hyde as per Eric Whitfield instructions Linked to Risk 117
41	3/17/2020	There is a threat of other project changes having an impact of final results.	The cause of the threat is the possible change in government funding / priorities post Covid, lack of clarity re other capital project scope and interdependencies to TQHR, Kāwhia/Centerport Future Developments, Lambton bus interchange, WCC coordination with Wellington Water, roading maintenance, GasCo, T&C, etc. mis-communication re maintenance programmes	The consequence of the threat is public complaints and reputation damage. Redesign needed, additional effort & work, programme delays and cost impacts, benefits not optimised or realised.	LGMW	Hannah Hyde	25/05/20 - Coordination with LGMW and partner programmes.	Likely	Moderate	Stakeholders	Medium						Unlikely	Moderate	Medium	Live-Treat	16/04/20 - Duplicate Risks combined RD20, RD31, RD40, RD41, RD43, RD45, RD47, RD83 20/6/7 - owning org changed to LGMW
55	3/17/2020	There is a threat the business case justification does not meet expectations of all LGMW partners	The cause of the threat is inadequate data analysis, lack of detailed (deep dive) investigations, lack of site or ground investigations at the correct phases, in accurate data, data gaps	The consequence of the threat is the business case is not based on sound information, incorrect assumptions are made, the project outcomes / benefits are not realised, additional effort and rework, cost & programme impacts, reputational impacts, potential RMA breaches, property acquisitions issues	LGMW	Hannah Hyde	25/05/20 - Follow the Waka Kotahi business case development process. Engagement with partners, OIM, IGA 08/07/2020 - Ongoing data analysis, stakeholder engagement; Strategic Case approved; IGA	Unlikely	Moderate	Delivery	Medium		1/5/20 - ACTION - Neil Trotter to define the extent of any additional data requirements for the SSBC 1/12/20: manage scope to established process. Note need to satisfy TWG.	Neil Trotter	6/30/2020	20/7/7 - project team continue to follow the published guidance.	Unlikely	Moderate	Medium	Live-Treat	16/04/20 - Linked to RD54, RD56, RD57, RD58 08/05/20 - Related risks combined and closed, RD55 open
62	3/17/2020	There is a threat the Marae parking arrangements does not meet the user requirement	The cause of the threat is informal parking arrangements with WCC would be affected by the project, the new facilities are not designed to user requirements, insufficient funds to provide all user requirements (compromises), gaps in requirements data, lack of stakeholder engagement with both WCC and Councils and Reading authority	The consequence of threat is unhappy stakeholders and complaints, infringement notices, harm to users, future remedial works (cost and programme), reputation	Beca	Nathan Baker	09/07/20 - SEB Bishop LGMW leading WCC engagement, including Pipera Marae	Likely	Minor	Stakeholders	Medium		25/05/20 - ACTION: engagement with WCC and the council (progressing) 1/12/20: we need to determine what their requirements are	Nathan Baker	7/30/2020		Possible	Moderate	Medium	Live-Treat	17/04/20 - Transferred from Rachel Dahlberg to Nathan Baker 1/12/20: likelihood changed to high, consequence minor
65	3/17/2020	There is a threat of a delay to the programme due to poor engagement with WCC.	The cause of the threat is a lack of engagement with Heritage NZ & WCC, lack of archaeological/dive expertise impacts into business case & early investigations, key significance areas not identified including notable trees, and features around Mulgrave Street, cultural areas, historical features	The consequence of threat is key engagement information is lacking. Also public complaints, design may not include engagement from Mana Whenua - redesign required	LGMW	Hannah Hyde	25/05/20 - Ongoing and engagement plan developed and implemented 09/07/20 - see Bishop TQHR planning WCC engagement, including Pipera Marae	Unlikely	Moderate	Stakeholders	Medium		1/12/20: there has been meeting with WCC partnership working group				Possible	Moderate	Medium	Live-Treat	16/04/20 - Linked to RD63, RD64 17/04/20 - Transferred from Zoe Thompson to Nathan Baker. Duplicate risks - Combined RD63, RD64, RD65 20/6/7 - risk description updated 06/7/21: likelihood lowered as LGMW now involved in engagement, assessed options against mana whenua values
67	3/17/2020	There is a threat of RMA / construction delays	The cause of the threat is a lack of engagement with Heritage NZ & WCC, lack of archaeological/dive expertise impacts into business case & early investigations, key significance areas not identified including notable trees, and features around Mulgrave Street, cultural areas, historical features	The consequence of the threat is a delay to the programme, breach of RMA, Whanganui constraints not met, cultural friction, rework of C&E and investigations, cost and programme delays, reputational impacts	LGMW	Hannah Hyde	25/05/20 - RMA considerations in options assessment	Unlikely	Severe	Environmental	Medium		08/05/20 - ACTION - Emily Alleyway to speak with Mark Lindsay at WCC regarding the RMA requirements to support the development of the business case 20/7/7 - ACTION - update social and env screen in Stage 2, for recommended option	Eric Whitfield	5/30/2020	20/7/7 - social and env screen completed on short list options. No significant RMA issues are expected at present. Detailed assessment will be completed on recommended option.	Unlikely	Moderate	Medium	Live-Treat	16/04/20 - Linked to RD67 12/09/20 - RID 66 Combined 1/12/20: review at beginning of stage 2, next risk workshop
70	3/17/2020	There is a threat of the corridor not being adequate for the specialist users of the corridor (Wellington Free Ambulance and Fire Station. Over width vehicles, police, accident response etc)	The cause of the threat is the corridor does not provide sufficient width for various vehicle user types, lack of stakeholder requirements gathering, lack of data, not captured in BC, not captured in design development	The consequence of threat is safety issues for road users, compounding access issues, complaints, costs to remedy, ongoing future issues, reputational impacts	LGMW	Hannah Hyde	25/05/20 - use of industry practice design standards.	Unlikely	Severe	Stakeholders	Medium		25/09/2010 - ACTION: Engagement with emergency service providers	Hannah Hyde	7/30/2020	20/7/7 - continue to engage with emergency services during the development of a recommended option.	Unlikely	Moderate	Medium	Live-Treat	16/04/20 - Linked to RD68, RD69
87	3/17/2020	There is a threat of community and stakeholder expectations are not met or unrealistic	The cause of the threat is a lack of consideration of previous information and engagement, focus on only opportunities, and problems not being confirmed, lack of or too much engagement, certain stakeholders have a greater influence than most (loudest voices), extent of engagement doesn't follow AP2 principles	The consequence of threat is a time delay to the programme, and information being duplicated, higher costs, problems and opportunities not being accurately identified, not meeting the expectations/needs of all stakeholders - retailers high risk, public confusion, long term options not suitable	LGMW	Hannah Hyde	25/05/20 Review of previous engagement processes and outcomes and incorporation into the project comms and engagement plan and strategic case 09/07/20 - Engagement strategic progressing with LGMW to support July shortlist public engagement activity	Likely	Moderate	Public/Media	High					20/7/7 - There is a plan in place for the upcoming engagement rounds, including the type of and scale of information to be included, as well as visualisations 20/2/11 - shortlist option engagement delayed until March/April 2021 1/12/20: there are ongoing discussions about engagement strategy and material with partners	Possible	Moderate	Medium	Live-Treat	16/04/20 - Linked to RD78, RD79, RD80, RD81, RD84, RD85, RD86 17/04/20 - Transferred from Zoe Thompson to Nathan Baker; Duplicate risks - Combined RD78, RD79, RD80, RD84, RD85, RD86, RD87



Council 24 February 2022 order paper - Let's Get Wellington Moving - Thorndon Quay Hutt Road single stage business case

Attachment 1 to Report 21.606

Sensitivity: General



Project/Contract Description	Thorndon Quay Hutt Road - The Connection	NZTA Lead	Hannah Hyde
Contract ID	To be inserted	Supplier Lead	Gaeem Dolery
Contract Value	Up to \$10M	Supplier Risk Management Specialist (if applicable)	Adam Ashford

Risk Identifier	Date rated (dd/mm/yyyy)	Risk Description (include whether this is a threat or an opportunity)	Risk Cause(s)	Risk Consequence(s)	Risk Owner	Controls	Current Risk Likelihood	Current Risk Consequence	Consequence Category	Current Controlled Risk Level	Level of risk acceptable, when controlled	Planned Risk Treatment Actions <i>Note: If more than one treatment action, either:</i>	Treatment Owner(s)	Planned Treatment Implementation	Risk Treatment Progress Updates	Residual (Target) Risk Likelihood	Residual (Target) Risk Consequence	Residual (Target) Risk Level	Risk status	Comments		
																					Contract Risk Register	
89	3/17/2020	There is a threat that the extent of stakeholder engagement is not as planned	The cause of the threat is that not all groups have been represented, and there has been a lack of engagement with a number of groups - eg. advocacy groups not invited to PKG, engagement fatigue, engagement approach not reaching the intended audience	The consequence of threat is public complaints and reputation, rework, redesign, delays to programme	LGMW	Hannah Hyde	25/05/20 - comms and engagement plan developed and implemented. Engagement with LGMW comms team re strategy. 09/07/20 - progressing strategy with LGMW, public engagement planned for July	Unlikely	Moderate	Public/Media	Medium	Low	25/05/20 - Continue to monitor the situation re: ongoing engagement with LGMW comms team, consider online events	Eric Whitfield	Ongoing	20/7/7 - There is a plan in place for the upcoming engagement round which will be public plus a stakeholder briefing. 20/2/11 - shortlist option engagement delayed until March/April 2021	Unlikely	Moderate	Medium	Live-Treat	16/04/20 - Linked to RD71, RD72, RD88, RD90 17/04/20 - Transferred from Zoe Thompson to Nathan Baker. Duplicate risks combined RD71, RD72, RD88, RD89 20/2/7 - residual likelihood reduced to possible due to scale of upcoming engagement 1/12/20: likelihood changed to possible	
91	3/17/2020	There is a threat of opposing feedback and a delay to the programme.	The cause of the threat is that residents or stakeholders are not supportive of the design solutions eg. parking bus stops, bus shelters, No In My Back Yard (NIMBY), Negative Public Reaction, Objections to the Cycleway outside Businesses; issues outside the project influence (bus routes); loss of car parking; the design solution does not accommodate easy access into businesses	The consequence of threat is public complaints and reputation, rework, redesign, delays to programme, additional funding / costs, solutions not aligned to need (street views view, community support reduced/lost reputational impacts, loss of trade for local business owners along the corridor wider area	LGMW	Hannah Hyde	25/05/20 - comms and engagement plan developed and implemented. Engagement with LGMW comms team re strategy. Review of and incorporation of previous engagement feedback. 09/07/20 - progressing strategy with LGMW, public engagement planned for July - 3 options to consult on.	Likely	Moderate	Public/Media	High	High	25/05/20 - ACTION: Implement engagement as per comms and engagement plan.	Eric Whitfield	Ongoing	20/7/7 - undertake engagement as per plan and reassess risk following engagement feedback 20/2/11 - shortlist option engagement delayed until March/April 2021. This increases the risk of opposing feedback	Likely	Moderate	High	Live-Treat	16/04/20 - Linked to RD76, RD14, RD73, RD91, RD13, RD77 20/04/20 - Transferred from Zoe Thompson to Nathan Baker. Duplicate risks combined 1/12/20: likelihood changed to likely 6/7/21: consequence lowered. There is currently a risk of \$8 from TG Collective	
92	3/17/2020	There is a threat of negative stakeholder and public feedback from mismanagement of project information	The cause of the threat is that project information is not released in a timely manner to other projects and the public, incorrect information or confidential information being released, property acquisition information not managed correctly. CRB's not managed within legislated requirements	The consequence of the threat is reputational impacts, property acquisition issues - additional costs, benefits lost, scope and solution confusion, CRB breaches	LGMW	Hannah Hyde	25/05/20 - Existing procedures regarding the control and release of official information. Comms and engagement team review	Possible	Moderate	Public/Media	Medium	Medium	25/05/20 - ACTION - Comms and engagement team review of information	Hannah Hyde	7/30/2020	20/7/7 - procedures are in place. No CRB's received to date. Engagement will commence end of July which could trigger requests for information	Possible	Severe	High	Live-Treat	1/7/04/20 - Transferred from Hannah Hyde to Eric Whitfield 12/05/20 - Transferred from Eric Whitfield back to NZTA (they release CRB's) 1/12/20: consequence changed to moderate	
99	12/1/2020	There is a threat that the current recommended option does not proceed	The cause of the threat is project cost exceeds programme budget expectations	Project does not proceed or is scaled down	LGMW	Hannah Hyde	02/03/21 - Services investigations progressing with design development	Rare	Severe	Stakeholders	Low	Low	1/12/20: after review of the costs, value engineering prior to pre-imp if required				Possible	Moderate	Medium	Live-Treat		
103	3/2/2021	There is a threat Utilities / Underground services are not identified	The cause of the threat is due diligence not completed, inaccurate As Built data, new assets included over course of project delivery	The consequence of the threat is design rework for new assets, relocation of services to accommodate design requirements, lost costs, reduces safety benefits of a compromised solution, reputation, delays to programme	LGMW	Hannah Hyde	02/03/21 - Services investigations progressing with design development	Likely	Moderate	Cost	High	High	02/03/21 - ACTION: LGMW Team to provide data and reports. Further assessments as design progresses.	Blaise Cummins	5/30/2021	28/06/2021 - Services information still pending	Possible	Moderate	Medium	High	Live-Treat	
104	3/2/2021	There is a threat of conflict access points onto the corridor	The cause of the threat is the number and nature of business driveway / accesses on the corridor cross over other modes - conflict of modes	The consequence of the threat is vehicle / ped / cycle crashes as business owners access their premises cross in the path of cyclists	LGMW	Hannah Hyde	02/03/2021 - Corridor and access ways design review, RSD reviews - identify access way clashes to design safe access solutions	Possible	Moderate	Delivery	Medium	Medium	02/03/21 - ACTION: Progress design HSD access to design solution access points that do not clash with other modes such as Peds / cycle / bus	Blaise Cummins	5/30/2021		Unlikely	Moderate	Medium	Live-Treat		
105	3/2/2021	There is an opportunity to improve the Hutt Road and Thorndon Quay Express / Access	The cause of the opportunity is to gain end-users agreement to combine business accesses	The consequence of the opportunity is reduced access points, improved safety for other modes, improved traffic flows	LGMW	Hannah Hyde	02/03/21 - Early identification of key assets / facilities, HSD design review, stakeholder engagement	Possible	Minor	Delivery	Medium	Medium	02/03/21 - ACTION: Progress assessment of area, progress improved design solutions for access way points	Blaise Cummins	5/30/2021		Likely	Moderate	High	Live-Treat	Linked to RD 70 Specialist users access on corridor (Fire, Ambulance, first responses, wide vehicles)	
106	3/2/2021	There is a threat the solution does not enable safe access / egress to existing key assets/facilities (parking stations, fire station for maintenance and emergency response	The cause of the threat is the lack of investigation, stakeholder engagement / feedback, lack of HSD design assessment, poor design solutions	The consequence of the threat is the restriction of access to key facilities: time / costs to move assets (dump stations or the like), rework designs to accommodate assets, programme delays and costs, reputation, poor safety outcomes	LGMW	Hannah Hyde	02/03/21 - Early identification of key assets / facilities, HSD design review, stakeholder engagement	Unlikely	Severe	Delivery	Medium	Medium	02/03/21 - ACTION: Progress design investigations for facilities on the corridor; 'future consented' new assets / buildings that may be built on the corridor between now and future construction	Blaise Cummins	5/30/2021		Unlikely	Moderate	Medium	Live-Treat	Linked to RD 70 Specialist users access on corridor (Fire, Ambulance, first responses, wide vehicles)	
108	3/2/2021	There is a threat the intersection design approach philosophy changes	The cause of the threat is the intersection modelling identifies design issues that require late design changes	The consequence of the threat is incorrect design assessments in the model, future design phases incorrect, additional late costs for rework or construction, unsafe solutions on the corridor, reputational impacts	LGMW	Hannah Hyde	02/03 - Design approach in review, pending outcome / decision	Unlikely	Severe	Delivery	Medium	Medium	02/03/21 - ACTION: Review the intersection design model, design approach is agreed / compliance to required standards within limited corridor widths - gain approvals	Blaise Cummins	5/30/2021		Rare	Moderate	Low	Live-Treat		
109	3/2/2021	There is a threat of data gaps - such as lack of survey data, Ped counts, Business economics data Metrics	The cause of the data gaps is insufficient information provided to the project team from external sources, lack of budget to fund investigations / on site surveys at the Prelim stage of delivery, old / historic data provided no longer relevant	The consequence of the threat is the design does not tie in with the existing on-site reality, incorrect assumptions made in the business case, designs incorrect or does not meet demands; later costs to correct during construction & additional construction costs	LGMW	Hannah Hyde	02/03/21 - Survey of 'access requirements' completed	Possible	Moderate	Delivery	Medium	Medium	02/03/21 - ACTION: progress investigations / source required information; document information gaps & assumptions made; identify in future project phases	Blaise Cummins	5/30/2021		Unlikely	Minor	Low	Live-Treat		
111	3/2/2021	There is an opportunity to improve the Jardin Mile area outcomes	The cause of the opportunity is to improve the urban design solution to the design process	The consequence of the opportunity is improved safety outcomes for users and amenity usability	LGMW	Hannah Hyde	02/03/2021 - ACTION: Review the Jardin Mile area to assess further urban design and safety requirements to increase amenity outcomes	Possible	Minor	Stakeholders	Medium	Medium		Blaise Cummins	5/30/2021		Likely	Moderate	High	Live-Treat		
113	3/2/2021	There is a threat critical heritage buildings, places of significance, cultural protected flora / fauna species are not identified & managed	The cause of the threat is lack of cultural investigations, lack of council plans inputs assessments or data provided, lack of user requirements assessments, lack of archaeological investigation during design phase	The consequence of the threat is breach of consents / regulations / legal requirements; impact of value of buildings; cultural value impacts to key stakeholders; loss of critical historical values; loss of historical earthworks values; cost impacts, delays to safety outcomes	LGMW	Hannah Hyde	GIS Model layer to replace heritage cultural values; Social and environment screening, heritage assessment in scope	Possible	Moderate	Legal/Compliance	Medium	Medium	02/03/21 - ACTION: Investigate the shared path - does this now go on the southern side of Hutt Road towards the Onslow Rd connection? Investigate historic horse trough that jets out into the road berm at this point on the northern side - and is quite rare. Investigate archaeological authority to modify the wall around it or the trough itself. Review historic images of the trees and street views to understand setting and space around the building (courtyard) for design inputs Investigate further any historic deposits turn up during earthworks - e.g. archaeological or cultural material for design inputs or future consenting requirements	Eric Whitfield	5/30/2021		Rare	Moderate	Low	Live-Treat	Linked to RD 89 - lack of stakeholder engagement for specialist groups. Note: We can mitigate this to a large extent by doing assessments of historic, archaeological and cultural heritage once we have a preferred option/alignment and earthworks design. But can't totally mitigate the unknown input/output materials that may turn up along the old shoreline here. That's why we will likely need an archaeological authority for the project so the earthworks can be monitored.	
114	3/2/2021	There is a threat the current corridor configuration will change before design & construction completed	The cause of the threat is changing assets on the corridor including changes to quake prone buildings, new buildings / infrastructure already consented is built	The consequence of the threat is late corridor design changes; impacts to asset owners, cost, cost, reputation, programme delays	LGMW	Hannah Hyde	02/03/21 - Survey of 'access requirements' completed	Possible	Moderate	Delivery	Medium	Medium	02/03/21 - ACTION: Review known information re new asset plans; quake prone building changes; speak with council & source any new building / asset information on proposed corridor Investigate additional CIS layer in model to identify clashes / impacts on design	Blaise Cummins	5/30/2021		Unlikely	Moderate	Medium	Live-Treat		
115	3/2/2021	There is a threat other transport mode requirements are omitted from the project	The cause of the threat is lack of stakeholder engagement and user requirements, poor design investigations, changes of requirements during design stages	The consequence of the threat is different user types can not use the corridor safely, complaints, costs and delays to remediate design, potential construction cost increases	LGMW	Hannah Hyde	02/03/21 - Survey of 'access requirements' completed	Unlikely	Severe	Public/Media	Medium	Medium	02/03/21 - ACTION: Progress further investigations to corridor solutions; accommodate other transport modes	Blaise Cummins	5/30/2021		Rare	Minor	Low	Live-Treat		
116	3/2/2021	There is a threat the Cost Estimates for Business Case not accurate to support funding application	The cause of the threat is insufficient investigations / stakeholder engagement to confirm requirements, lack of agreed	The consequence of the threat is incorrect funding / business case decisions, design solutions compromised, late in the programme	LGMW	Hannah Hyde	02/03/21 - design development and response to top tier requirements feeding into funding case	Unlikely	Severe	Cost	Medium	Medium	02/03/21 - ACTION: Progress further investigations to manage cost estimate to the level of accuracy required for the business case	Blaise Cummins	5/30/2021		Unlikely	Moderate	Medium	Live-Treat	Costings based on preliminary design, risk items have been discussed and considered	
121	9/20/2021	There is a threat that the funding isn't available	The cause of the threat is that funding has not been approved for the project and there is a shortage of funding from the MLTF.	The consequence of the threat is the project is delayed and the benefits from the project do not materialise or are delayed and opens after Te Ara Tupua.	LGMW	Hannah Hyde	Waka Kotahi funding assessment and funding prioritisation procedure.	Likely	Severe	Delivery	High	High	Ensure robust evidence is available for IQA purposes to support funding application. Consider funding from Te Ara Tupua as a variation.	Gaeem Dolery			Possible	Severe	High	Live-Treat		

Sensitivity General



Project/Contract Description	Thorndon Quay Hutt Road - The Connection	NZTA Lead	Hannah Hyde
Contract ID	To be mirrored	Supplier Lead	Graeme Doherty
Contract Value	Up to \$10M	Supplier Risk Management Specialist (if applicable)	Adam Ashford

Risk Identifier	Date rated (dd/mm/yyyy)	Risk Description (include whether this is a threat or an opportunity)	Risk Cause(s)	Risk Consequence(s)	Risk Owner	Controls	Current Risk Likelihood	Current Risk Consequence	Consequence Category	Current Controlled Risk Level	Lower or more acceptable, when available	Planned Risk Treatment Actions <i>Note: If more than one treatment action, either:</i> It is assumed that all options would include improvements to PT connectivity. This needs to be shown on the drawings and included in the option cost estimates.	Treatment Owner(s)	Planned Treatment Implementation	Risk Treatment Progress Updates	Residual	Residual	Residual	Risk status	Comments
																(Target) Risk Likelihood	(Target) Risk Consequence	(Target) Risk Level		
123	9/20/2021	There is a risk that the improved connectivity to the left station is not achieved even though it was a project objective.	The cause of the threat is that it may not have been included in the scope of the project scope. And funding is constrained	The consequence of the threat is that the improved PT connectivity is not achieved and demand for Te Ara Tupua is reduced.	AECOM	Graeme Doherty	PT Rail station design guidance. Project scope definition	Possible	Moderate	Cost	Medium		Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
124	9/20/2021	There is a threat that a reduction in the 3 lanes currently on the off ramp to 2 causes queuing back onto the State highway. Also AOTEA and TC (Hannah)	The cause of the threat is that the traffic on the right two lanes is pretty much saturated through the lights every phase. There has been an increase in demand especially in the evening peak between the Hutt area and the Petone area since COVID. If left turners are included in the two lanes it reduces the saturation and increases the queue length.	The consequence of the threat is an increase in safety risks due to the risk posed by queues onto the Expressway.	AECOM	Graeme Doherty	Waka Kotahi and Austroads design guidelines.	Likely	Severe	Health & Safety	Critical		Graeme Doherty			Possible	Severe	High	Live-Treat	
125	9/20/2021	There is a risk that the speed differential on the slip lane will be large.	The cause of the threat is that in the evening the inbound flow into Wellington is much higher speed. As the moment the in lane flares to 3 lanes and the queue is rarely long enough to block the left turn lane. We understand SH68 improvements not going to take pressure off this route.	The consequence of the threat is reduced safety due to higher speed differentials.	AECOM	Graeme Doherty	Waka Kotahi and Austroads design guidelines.	Likely	Severe	Health & Safety	Critical		Graeme Doherty			Possible	Severe	High	Live-Treat	
126	9/20/2021	There is a risk that there is a level of uncertainty about what the future traffic patterns will be.	The cause of the threat is that the modelling is based on assumptions about the future which may turn out to be incorrect.	The consequence of the threat is future demand is uncertain.	AECOM	Graeme Doherty	AUSUM Modelling allows us to look at the effect of assumptions and what may happen. SIDRA modelling has been done. Some risk that inputs aren't reliable - depends on the inputs.	Likely	Severe	Health & Safety	Critical		Graeme Doherty			Possible	Severe	High	Live-Treat	
127	9/20/2021	There is a threat that people wouldn't use the connection if the LOS was poor and that the poor safety and reputation would mean cyclists stay on SH	The cause of the threat is if The Connection has poor LOS then the user experience would be poor.	The consequence of the threat is some people (about -50 users per day) might stay on the State highway and the anticipated volume of users would be less. It is also not a good look having made a substantial investment. Safety could reduce and reputation could suffer.	AECOM	Graeme Doherty		Possible	Moderate	Cost	Medium		Graeme Doherty			Possible	Minor	Medium	Live-Treat	
128	9/20/2021	There is a threat that the Te Ara Tupua and TQHR lane markings lines may not be consistent.	The cause of the threat is that Te Ara Tupua assumes pedestrians are on seaward side. TQHR assumes pedestrians are on the east side. Doesn't tie in with the design which assumes that all the southbound users were on the east side and all the northbound users are on the West side.	The consequence of the threat is there is a safety issue which will flow on into lower uptake of the cycleway.	AECOM	Graeme Doherty		Possible	Moderate	Health & Safety	Medium		Graeme Doherty			Likely	Minor	Medium	Live-Treat	
129	9/20/2021	There is a risk that in the future there might be a need to do some kind of physical separation of the modes in the future	The cause of the threat is that Accessible Streets is considering a default national speed limit on shared paths, and if that goes ahead then we may need to have a separation between the modes in order to allow cyclists to travel at higher than the standard shared path speed limit of might be 25 kph might be 30 kph. Which will be low enough to be safe for shared paths in general and low enough to be discouraging for long distance cycle commuters.	The consequence of the threat is more width may be required to accommodate physical separation or if the higher speeds are not dealt with there may be a safety issue, leading to a separation issue and lower uptake.	AECOM	Graeme Doherty		Likely	Moderate	Health & Safety	High		Graeme Doherty			Possible	Minor	Medium	Live-Treat	
131	9/20/2021	There is a risk around who gives way at the intersection between the shared path and KwiRail vehicles in the laydown area	The cause of the threat is that the give way priority is shown differently in the two options. If KwiRail vehicles have priority their speed may be unsafe at the intersection.	The consequence of the threat is there is a potential for collisions at the intersection.	AECOM	Graeme Doherty		Possible	Severe	Health & Safety	High		Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
132	9/20/2021	There is a risk that construction of the underpass under the State highway is not feasible.	The cause of the threat is that disruption to traffic caused by construction may not be acceptable or that geotechnical conditions such as presence of MSE straps means may be feasible.	The consequence of the threat is delays to the construction of the underpass and cost increases. Or it may not be possible to construct it at all.	AECOM	Marcus Brown		Possible	Extreme	Cost	Critical		Graeme Doherty			Unlikely	Extreme	High	Live-Treat	
133	9/20/2021	There is a risk of unforeseen obstacles to construction of the underpass (e.g. MSE behind the orb wall)	The cause of the threat is lack of Structures As Built information	The consequence of the threat is an increase in cost	AECOM	Graeme Doherty		Likely	Severe	Cost	Critical		Graeme Doherty			Possible	Severe	High	Live-Treat	
134	9/20/2021	There is a risk that construction is delayed and cost increase about unknown services.	The cause of the threat is lack of As Built information about existing services e.g. Substation, Water main.	The consequence of the threat is an increase in cost	AECOM	Graeme Doherty		Likely	Moderate	Cost	High		Graeme Doherty			Possible	Moderate	Medium	Live-Treat	
135	9/20/2021	There is a safety risk around using the existing facility (blind corner on the western side).	The cause of the threat is the existing blind corner at the western side of the underpass which leads to conflict points.	The consequence of the threat is that it puts stress on people and increases the chances of head-on crashes.	AECOM	Simon Kennett		Likely	Severe	Health & Safety	Critical		Graeme Doherty			Possible	Severe	High	Live-Treat	
136	9/20/2021	There is a risk that the existing Hutt Road facility on the eastern side pathway will provide an inadequate level of Service.	The cause of the threat is the existing pathway is too narrow and cannot accommodate the future level of pedestrians, cyclists, scooters and etc.	The consequence of the threat will lower the user experiences of the pathway. Pedestrians, cyclists, scooters and etc cannot go through the pinch point simultaneously, which can cause safety issues (bumping and knocking over).	AECOM	Simon Kennett		Likely	Moderate	Health & Safety	High		Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
138	9/20/2021	There is a threat that cyclists would not use this new cyclist facility	The cause of the threat is due to the potential poor connectors of the new cycle facilities to other facilities and destinations.	The consequence of the threat is that it could cause cyclists to avoid this new cycle facility and use other routes that provide better connections. This could also negatively affect the community acceptance of funding for cycling facilities as few cyclists would be using this new facility.	AECOM	Shaheen Hanwan		Possible	Severe	Public/Media	High		Graeme Doherty			Possible	Moderate	Medium	Live-Treat	
139	9/20/2021	There is a risk around the level of use of the KwiRail maintenance yard by vehicles.	The cause of the risk is that dependant on the use of the KwiRail maintenance yard (staging of construction, storing materials and etc) the maintenance area's traffic volume could change.	The consequence of the threat is that it could increase the traffic volume of the area increasing conflict with cyclists and pedestrians using the Connection.	AECOM	Shaun Bullard		Possible	Moderate	Health & Safety	Medium		Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	

Sensitivity: General



Project/Contract Description	Thorndon Quay Hutt Road - The Connection	NZTA Lead	Hannah Hyde
Contract ID	To be inserted	Supplier Lead	Graeme Doherty
Contract Value	Up to \$10M	Supplier Risk Management Specialist (if applicable)	Adam Ashford

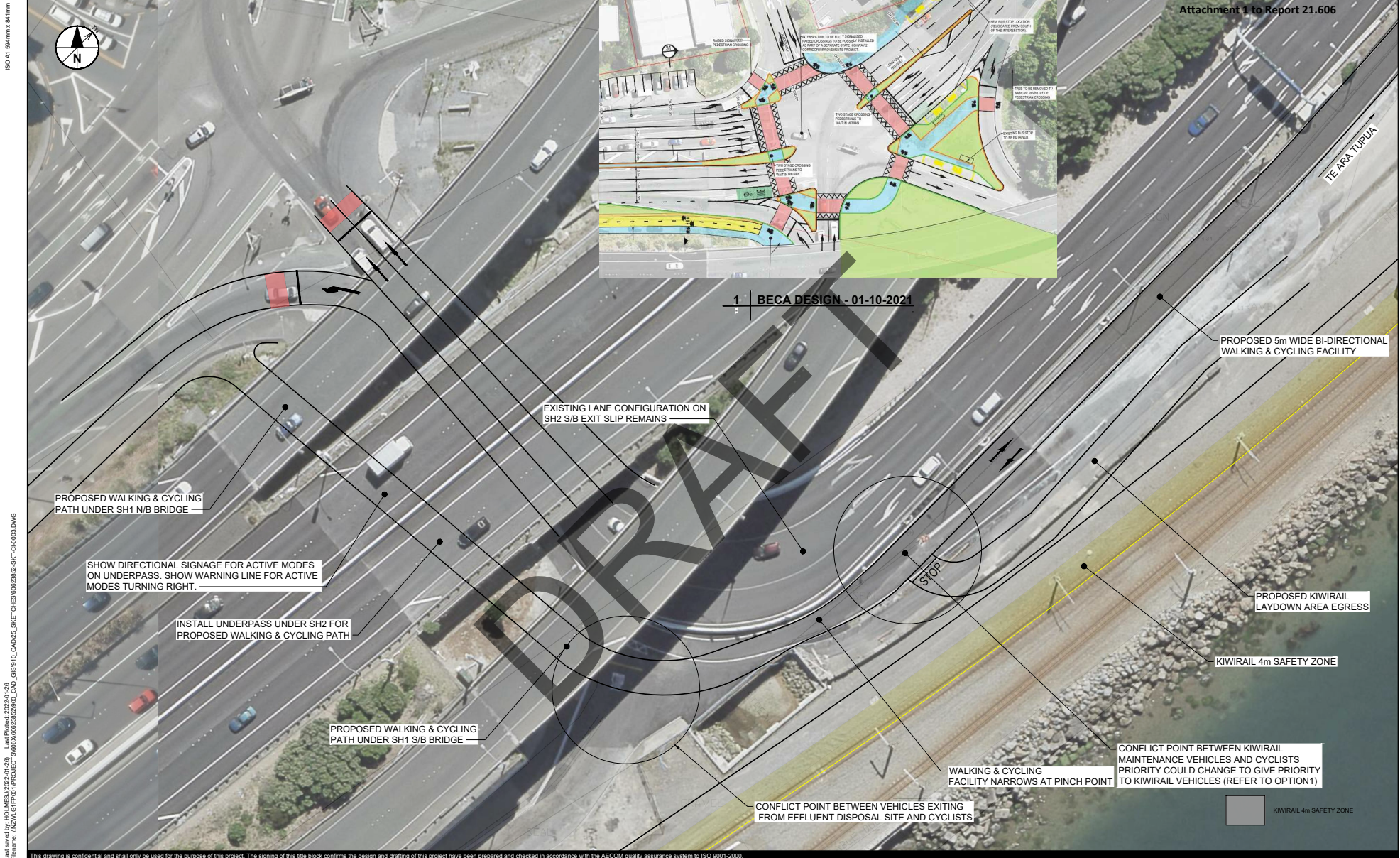
Risk Identifier	Date rated (dd/mm/yyyy)	Risk Description (include whether this is a threat or an opportunity)	Risk Cause(s)	Risk Consequence(s)	Risk Owner	Controls	Current Risk Likelihood	Current Risk Consequence	Consequence Category	Current Controlled Risk Level	Lower than acceptable, when controlled	Planned Risk Treatment Actions (Note: if more than one treatment action, either: 1) Design with good geometrics 2) Waka Kotahi and Austroads design guidelines. 3) Monitor and manage.	Treatment Owner(s)	Planned Treatment Implementation	Risk Treatment Progress Updates	Residual	Residual	Residual	Risk status	Comments
																(Target) Risk Likelihood	(Target) Risk Consequence	(Target) Risk Level		
140	9/20/2021	There is a risk of using the existing cyclway due to light levels that could impair the vision of cyclists.	The cause of the threat is cyclists travelling between light and dark areas underpass and the two shared areas. The existing pedestrian hold bar is also obstructing cyclists.	The consequence of the threat is that it could become a safety hazard causing collisions. In addition, this pedestrian hold bar also increases the risk of collision with cyclists.	AECOM	Kylie Hook	Likely	Moderate	Health & Safety	High	Lower than acceptable, when controlled	1) Design with good geometrics 2) Waka Kotahi and Austroads design guidelines. 3) Monitor and manage.	Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
141	9/20/2021	There is a threat that there could be sun strike early in the morning.	The cause of the threat is due to the direction of travel in the morning.	The consequence of the threat is that it could impair the vision of cyclists and become a safety hazard.	AECOM	Graeme Doherty	Possible	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	1) Design with good geometrics 2) Waka Kotahi and Austroads design guidelines. 3) Monitor and manage.	Graeme Doherty			Possible	Minor	Medium	Live-Treat	
142	9/20/2021	There is a threat that the sightlines are below standard.	The cause of the threat is the geometry of the site which can affect the sightlines for active mode users.	The consequence of the threat is that it could negatively affect safety and cause conflicts.	AECOM	Lorelei Schmitt	Possible	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	1) Design with good geometrics 2) Waka Kotahi and Austroads design guidelines. 3) Monitor and manage.	Graeme Doherty			Possible	Minor	Medium	Live-Treat	
143	9/20/2021	There is a threat that there might be a conflict between PF and active mode movement.	The cause of the threat is conflict in movement between the people exiting the tunnel and people travelling along the footpath outside the tunnel's exit (e.g. people getting off the bus stop and along Hutt Road).	The consequence of the threat is that it could become a safety hazard as people exiting the tunnel could collide with the people travelling along.	AECOM	Graeme Doherty	Likely	Moderate	Health & Safety	High	Lower than acceptable, when controlled	1) NZTA public transport design guideline (still in draft version) 2) Mainline good sightlines. 3) Road marking to reduce speed (e.g. keep left, slow down and centre line). 4) Monitor and manage.	Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
144	9/20/2021	There is a threat that the existing bus shelter could conflict with the sightlines.	The cause of the threat is due to the location of the bus shelter and stop. The bus stop is also potentially in the way of the cycle lane.	The consequence of the threat is that the bus shelter could conflict with the sightlines and therefore become a safety hazard. The existing bus stop in a pull in bay which is also a safety hazard for cyclists that will use the cycle lane.	AECOM	Alex Campbell	Likely	Moderate	Health & Safety	High	Lower than acceptable, when controlled	NZTA public transport design guideline (still in draft version). The intent will be to design the bus shelter consistent with the latest public transport design guidance incorporating bus stop layout design. This includes working with the private SME's (e.g. Simon Kenneth/Lordie Schmitt) and OW to check design risks are well mitigated in the detailed design.	Graeme Doherty			Unlikely	Minor	Low	Live-Treat	
145	9/20/2021	There is a threat that the level of service for cyclists would be significantly decreased during the construction phase.	The cause of the threat is that the existing cycling facility (e.g. existing on-road cycle lane) will be removed to accommodate for construction traffic during the construction phase.	The consequence of the threat is it will reduce the demand for existing cyclists.	AECOM	Matt Shipman	Almost certain	Moderate	Health & Safety	High	Lower than acceptable, when controlled	1) Secure some cycling facility during the construction phase. 2) Monitor and manage.	Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
146	9/20/2021	There is a threat of stormwater flooding issues on the western side.	The cause of the threat is that the grading of the intersection tends to be towards one side of the intersection and can cause flooding issues during a heavy storm.	The consequence of the threat is that the puddling from a heavy storm can become a safety hazard for vehicles drive through it.	AECOM	Kylie Hook	Possible	Moderate	Environmental	Medium	Lower than acceptable, when controlled	Using CCTV to identify the issue.	Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
147	9/20/2021	There is a threat of unplanned parking on the berm on the western side.	The cause of the threat is that some people are crossing the road safely and becoming a safety hazard for others.	The consequence of the threat is that it could become a safety hazard for others.	AECOM	Graeme Doherty	Possible	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	1) Existing parking on south Hutt Road. 2) Yellow line marking to enforce no parking 3) Create parking on KwiKalf maintenance yard	Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	Issue for TQHR to address if outside the Connection area / scope.
148	9/20/2021	There is a threat of funneling of the wind through the tunnel.	The cause of the threat is that cyclists could experience extreme wind conditions when cycling through the tunnel.	The consequence of the threat is that it could become a safety hazard for cyclists to lose control.	AECOM	Hannah Hyde	Possible	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	1) Warning system for high wind (VMS, social media and etc) 2) Wind break structure.	Graeme Doherty			Rare	Moderate	Low	Live-Treat	
149	9/20/2021	There is a threat of northwestern wind going through the tunnel.	The cause of the threat is the occasionally northwestern wind going against the cyclists when cycling through the tunnel.	The consequence of the threat is that the northwestern makes it challenging to cycle through and can cause cyclist to lose control.	AECOM	Hannah Hyde	Possible	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	1) Warning system for high wind (VMS, social media and etc) 2) Wind break structure.	Graeme Doherty			Rare	Moderate	Low	Live-Treat	
150	9/20/2021	There is a threat of sea level rise.	The cause of the threat is that global warming causes the rise of sea level.	The consequence of the threat is that the rise of sea level could flood the tunnel.	AECOM	Adam Ashford	Possible	Moderate	Environmental	Medium	Lower than acceptable, when controlled	Design to Ministry of Environment suggested future sea level.	Graeme Doherty			Rare	Moderate	Low	Live-Treat	
151	9/20/2021	There is a threat that the tunnel attracts unsavoury activities to the area.	The cause of the threat is that the area becomes a pleasant and enclosed area and therefore may attract unsavoury activities.	The consequence of the threat is that people start to feel unsafe crossing through the area.	AECOM	Lorelei Schmitt	Possible	Minor	Health & Safety	Medium	Lower than acceptable, when controlled	1) Strong lighting. 2) CCTV. 3) Design for passive surveillance. 4) Maintenance. 5) Place making. 6) Traffic Calm.	Graeme Doherty			Rare	Minor	Low	Live-Treat	
152	9/20/2021	There is a risk that the use of the Effluent station going to be changed.	The cause of the threat is that the use of the effluent station may change.	The consequence of the threat is that more traffic might be generated in the area.	AECOM	Graeme Doherty	Unlikely	Moderate	Cost	Medium	Lower than acceptable, when controlled	Liaise with the Effluent station operators.	Graeme Doherty			Rare	Moderate	Low	Live-Treat	
153	9/20/2021	There is a threat that motorised vehicles will be using the connections.	The cause of the threat is that access for motorised vehicles is not controlled.	The consequence of the threat is that it could become a safety hazard for other active mode users.	AECOM	Graeme Doherty	Possible	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	1) Enforce by laws. 2) Road marking 3) Geometrics.	Graeme Doherty			Rare	Moderate	Low	Live-Treat	
154	9/20/2021	There is a risk that trail bikes will be access the Connection as seen in the Hutt River area.	The cause of the threat is the use of trail bikes around the Hutt area.	The consequence of the threat is that it could become a safety hazard for other active mode users.	AECOM	Matt Shipman	Possible	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	1) Enforce by laws. 2) Road marking. 3) Geometrics.	Graeme Doherty			Rare	Moderate	Low	Live-Treat	
156	9/20/2021	There is an opportunity to bring Iwi Mana Whenua urban design into the project.	The cause of the opportunity is that there is currently a lack of urban design in the area.	The consequence of the opportunity is that it can increase the overall experience when using the facility and bring in the rich history of the past.	AECOM	Hannah Hyde	Possible	Moderate	Stakeholders	Medium	Lower than acceptable, when controlled	Consider Opportunities to improve design with mana whenua representatives.	Graeme Doherty			Possible	Moderate	Medium	Live-Treat	
157	9/20/2021	There is a threat that the current channel level is not sufficient.	The cause of the threat is that the channel level has changed over the years and the current channel level is unknown.	The consequence of the threat is that it cannot accommodate the stormwater and cause flooding in the area.	AECOM	Kylie Hook	Unlikely	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	Survey the channel level and make improvements if needed.	Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
158	9/20/2021	There is a threat that the water can leak from the flyover overhead.	The cause of the threat is that there appears to be leakage from the joints of the flyover.	The consequence of the threat is that it could cause flooding in the area.	AECOM	Adam Ashford	Unlikely	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	Investigate the flyover leaks overhead and maintain	Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
159	9/20/2021	There is a threat of conflicting travel modes and movement in the area.	The cause of the threat is that a range of different modes (e.g. traffic, pedestrians, cyclists and etc) use that area to get to a range of different places (e.g. stations, bus stops and etc) and therefore, can conflict with each other.	The consequence of the threat is that the conflict moving and difference in speed could cause crashes with each other.	AECOM	Hannah Hyde	Likely	Moderate	Health & Safety	High	Lower than acceptable, when controlled	1) Road marking (slow down, double yellow lines, keep left) 2) Design with good geometrics 3) Waka kotahi and Austroads design guidelines.	Graeme Doherty			Possible	Moderate	Medium	Live-Treat	
160	9/20/2021	There is a risk that the existing footpath kerb is being hit by vehicles and some places are damage.	The cause of the threat is that vehicles are hitting and damaging the existing footpath kerb.	The consequence of the threat is that it will need more frequent maintenance. It is also not safe for cyclist cycling next to the kerb.	AECOM	Graeme Doherty	Unlikely	Severe	Health & Safety	Medium	Lower than acceptable, when controlled	1) Reduce speed. 2) Water with 3) Reductive kerbs.	Graeme Doherty			Unlikely	Severe	Medium	Live-Treat	
161	9/20/2021	There is an increased risk of crashes during the maintenance of the slip road.	The cause of the threat is that some road sections will be closed down due to maintenance of the road.	The consequence of the threat is that it could disrupt traffic and cause safety hazards.	AECOM	Graeme Doherty	Possible	Moderate	Health & Safety	Medium	Lower than acceptable, when controlled	1) maintenance at night time. 2) Sweeping.	Graeme Doherty			Unlikely	Moderate	Medium	Live-Treat	
163	9/20/2021	There is a risk that a large amount of construction will happen in the small area during the same time.	The cause of the threat is a range of project construction (TAT and the connection) that could be happening in the small area during the same time.	The consequence of the threat is that it could increase the safety risk for the road users and construction workers in the area.	AECOM	Graeme Doherty	Possible	Severe	Health & Safety	High	Lower than acceptable, when controlled	1) Need to check swept paths for HCVs. Option takes a couple of months. Option 1A a bit longer. Need to avoid cyclists mixing with trucks and buses. 2) Built in alliance 3) Built into contract.	Graeme Doherty			Possible	Severe	High	Live-Treat	
164	9/20/2021	There is a threat that requiring path users to give way to vehicles coming out of the RL land may be illegal.	The cause of the threat is that it may be illegal to require path users to give way to vehicles coming out of the RL land. By law, a direct entering or existing driveway must give way to road users on a footpath cycle path or shared path.	The consequence of the threat is that the intervention is not approved.	AECOM	Graeme Doherty	Possible	Moderate	Stakeholders	Medium	Lower than acceptable, when controlled	Update drawings to show KR vehicles and effluent vehicles giving way.	Graeme Doherty			Rare	Moderate	Low	Live-Treat	



Appendix C

Option 1, 1A and 1D Drawings

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CONNECTION BETWEEN
HUTT ROAD & TE ARA
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Let's GET Wellington MOVING

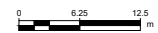
PROJECT MANAGEMENT INITIALS

GD	TR	AA
DESIGNER	CHECKED	APPROVED

ISSUE/REVISION

NO	DATE	DESCRIPTION
C	26.01.2022	REVISIONS FOR ISSUE
B	25.08.2021	KIWIRAIL AMENDMENTS
A	Aug-21	FOR DISCUSSION
NR	DATE	DESCRIPTION

PROJECT NUMBER
60623852
SHEET TITLE
CONCEPT PLAN OPTION 1A
SHEET NUMBER
CI-0003





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PROJECT MANAGEMENT INITIALS

GD	TR	AA
DESIGNER	CHECKED	APPROVED

ISSUE/REVISION

NO	DATE	DESCRIPTION
B	26.01.2022	REVISIONS FOR ISSUE
A	Sept-21	FOR DISCUSSION
NR		

PROJECT NUMBER
 60623852
SHEET TITLE
 CONCEPT PLAN OPTION 1D
SHEET NUMBER
 CI-0009



Appendix D

Cost Estimates and Parallel Cost Estimate

DRAFT

Project Estimate Form C		DBE		
Thorndon Quay Hutt Road SSBC - The Connection Option 1		Detailed Business Case Estimate		
Item	Description	Base estimate	Contingency	Funding risk
A	Nett project property cost	110,000	16,500	11,000
	Project Development Phase			
	- consultancy fees	nil	nil	nil
	- the NZTA-managed costs	nil	nil	nil
B	Total Project Development			
	Pre-implementation Phase			
	- consultancy fees	225,000	67,500	112,500
	- the NZTA-managed costs	180,000	54,000	90,000
C	Total Pre-implementation	405,000	121,500	202,500
	Implementation Phase			
	- Implementation fees	99,000	29,700	49,500
	- consultancy fees	100,000	30,000	50,000
	- the NZTA-managed costs	100,000	30,000	50,000
	- consent monitoring fees	5,000	1,500	2,500
	Sub-total base Implementation Fees	304,000	91,200	152,000
	Physical works			
1	Environmental compliance	15,000	7,500	4,500
2	Earthworks	209,040	104,520	62,712
3	Ground improvements	0	0	0
4	Drainage	106,625	53,313	31,988
5	Pavement and surfacing	328,910	164,455	98,673
6	Bridges	0	0	0
7	Retaining walls	210,000	105,000	63,000
8	Traffic services	461,700	230,850	138,510
9	Service relocations	110,000	55,000	33,000
10	Landscaping	7,500	3,750	2,250
11	Traffic management and temporary works	240,000	120,000	72,000
12	Preliminary and general	779,388	389,694	233,816
13	Extraordinary construction costs	0	0	0
14	Sub Total Base Physical Works	2,468,163	1,234,081	740,449
D	Total for Implementation Phase	2,772,163	1,325,281	1,632,898
E	Project Base Estimate (A+C+D)	3,287,163	1,463,281	1,846,398
F	Contingency (Assessed/Analysed)	(A+C+D)	1,463,281	
G	Project Expected Estimate (E+F)		4,750,444	
	Nett Project Property Cost Expected Estimate		126,500	
	Project Development Expected Estimate		Nil	
	Pre-Implementation Expected Estimate		526,500	
	Implementation Expected Estimate		4,097,444	
H	Funding risk (Assessed/Analysed)		(A+C+D)	1,846,398
I	95th percentile Project Estimate (G+H)		(G+H)	6,596,841
	Nett Project Property Cost 95th percentile Estimate			137,500
	Project Development 95th percentile Estimate			Nil
	Pre-Implementation 95th percentile Estimate			729,000
	Implementation 95th percentile Estimate			5,730,341

Date of estimate: Sept 2021	Cost index (Qtr/Year)
Estimate prepared by: Marc Cilliers	Signed
Estimate internal peer review by: Graeme Doherty	Signed
Estimate external peer review by	Signed
Estimate accepted by the NZTA	Signed

Note: (1) These estimates are exclusive of escalation and GST.

Project Estimate Form C		DBE		
Thorndon Quay Hutt Road SSBC - The Connection Option 1D		Detailed Business Case Estimate		
Item	Description	Base estimate	Contingency	Funding risk
A	Nett project property cost	110,000	16,500	11,000
	Project Development Phase			
	- consultancy fees	nil	nil	nil
	- the NZTA-managed costs	nil	nil	nil
B	Total Project Development			
	Pre-implementation Phase			
	- consultancy fees	225,000	67,500	112,500
	- the NZTA-managed costs	180,000	54,000	90,000
C	Total Pre-implementation	405,000	121,500	202,500
	Implementation Phase			
	- Implementation fees	99,000	29,700	49,500
	- consultancy fees	100,000	30,000	50,000
	- the NZTA-managed costs	100,000	30,000	50,000
	- consent monitoring fees	5,000	1,500	2,500
	Sub-total base Implementation Fees	304,000	91,200	152,000
	Physical works			
1	Environmental compliance	15,000	7,500	4,500
2	Earthworks	178,005	89,003	53,402
3	Ground improvements	0	0	0
4	Drainage	125,650	62,825	37,695
5	Pavement and surfacing	328,910	164,455	98,673
6	Bridges	0	0	0
7	Retaining walls	0	0	0
8	Traffic services	139,750	69,875	41,925
9	Service relocations	110,000	55,000	33,000
10	Landscaping	72,900	36,450	21,870
11	Traffic management and temporary works	240,000	120,000	72,000
12	Preliminary and general	403,065	201,532	120,919
13	Extraordinary construction costs	0	0	0
14	Sub Total Base Physical Works	1,613,280	806,640	483,984
D	Total for Implementation Phase	1,917,280	897,840	1,119,968
E	Project Base Estimate (A+C+D)	2,432,280	1,035,840	1,333,468
F	Contingency (Assessed/Analysed)	(A+C+D)	1,035,840	
G	Project Expected Estimate (E+F)		3,468,119	
	Nett Project Property Cost Expected Estimate		126,500	
	Project Development Expected Estimate		Nil	
	Pre-Implementation Expected Estimate		526,500	
	Implementation Expected Estimate		2,815,119	
H	Funding risk (Assessed/Analysed)		(A+C+D)	1,333,468
I	95th percentile Project Estimate (G+H)		(G+H)	4,801,587
	Nett Project Property Cost 95th percentile Estimate			137,500
	Project Development 95th percentile Estimate			Nil
	Pre-Implementation 95th percentile Estimate			729,000
	Implementation 95th percentile Estimate			3,935,087

Date of estimate: Sept 2021	Cost index (Qtr/Year)
Estimate prepared by: Marc Cilliers	Signed
Estimate internal peer review by: Graeme Doherty	Signed
Estimate external peer review by	Signed
Estimate accepted by the NZTA	Signed

Note: (1) These estimates are exclusive of escalation and GST.



LET'S GET WELLINGTON MOVING: THORNDON
QUAY AND HUTT ROAD – THE CONNECTION

PARALLEL ESTIMATE

17 January 2022

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CONTACT	1
1 INTRODUCTION	2
2 FINANCIAL SUMMARY	2

APPENDICES

APPENDIX A: IBC ESTIMATE SUMMARY

CONTACT

DETAIL	DESCRIPTION
Name of Company/Trading Name	WTP NZ Infrastructure Limited
Name of Representative	Luke Donnelly
Position	Director
Head Office Address	18 Shortland Street, Auckland
Telephone	+64 3 365 7669
Mobile	+64 21 684 163
Email	Luke.donnelly@wtpartnership.co.nz

DRAFT

DOCUMENT STATUS	NAME	DATE
PREPARED BY	Filip Lalovich	01.12.21
REVIEWED BY	Luke Donnelly	17.01.22
E-SIGNATURE APPROVED	Luke Donnelly	17.01.22

REVISION NO.	REVISION DATE	DRAFT.FINAL
00	01.12.21	FINAL
01	21.12.21	FINAL
02	17.01.22	FINAL

1 INTRODUCTION

WT Infrastructure (WT) have been commissioned by Let's Get Wellington Moving to provide a parallel estimate for The Connection between the Thorndon Quay to Upper Hutt Cycleway and the Ngā Ūranga to Pito-one Cycleway. The works entail the construction of an underpass below SH2 and cycleway works to link between the two projects.

We were provided with the following documents which helped form the basis of this updated budget estimate.

- *The Connection Draft Final SSBC addendum 37* by Aecom
- *The Connection Draft Final SSBC addendum 33* by Aecom
- *SH1N_10679_Original Construction Drawings 1982* drawing pack of the original structures
- *SH1N_10679_Original Construction Drawings 1982* drawing pack of the original structures
- *SH1N_10679_Original Construction Drawings 1982* drawing pack of the original structures

2 FINANCIAL SUMMARY

The following table provides a summary of the cost estimate included in Appendix A, along with a comparison to the Aecom Estimate. Please refer to our assumptions, clarifications and exclusions listed later in the document.

Item	Description	WT	Aecom	Variance
1	Project Base Estimate	8,465,114	5,753,321	2,711,793
2	Project Expected Estimate	11,973,346	8,449,681	3,523,665
3	95th percentile Project Estimate	14,270,679	11,775,773	2,494,906

2.1 VARIANCES

We have only been provided with the Aecom estimate summary, so we cannot comment on any detailed rates variances, but we have highlighted any discrepancies between the two estimates below:

- Pre-implementation fees = +\$980k. We have allowed 14.5% for consultancy fees and 8.4% for NZTA managed Costs, which is in line with the agreed allowances for the wider Thorndon Quay and Upper Hutt project.
- Implementation Phase Fees = +\$600k. We have allowed 8.4% for consultancy fees and 6.5% for NZTA managed Costs, which is in line with the agreed allowances for the wider Thorndon Quay and Upper Hutt project.
- Physical Works = +\$800k. It is difficult to analyse the exact variances as we only have the Aecom cost summary and it is unclear which costs are captured under each element. Given the limited design information available to produce the estimates, differences are inevitable based upon the assumptions made.
- Project Contingency = +\$800k. Please refer to the contingency section of the report for our allowances.
- P95 Contingency = -\$1m. Please refer to the contingency section of the report for our allowances.

2.2 CONTINGENCY

We have used the General Approach to contingency and have applied the following percentages to each element:

Element	Project Contingency	P95 Contingency
Property Cost	30%	25%
Pre-implementation Phase	30%	25%
Implementation Fees	30%	25%
Environmental Compliance	40%	25%
Earthworks	40%	25%
Ground Improvements	50%	30%
Drainage	40%	25%
Pavement and Surfacing	40%	25%
Bridges & Tunnels	50%	30%
Retaining Walls	50%	30%
Traffic Services	40%	25%
Service Relocations	40%	25%
Landscaping	40%	25%
Traffic Management and Temporary Works	50%	30%
Preliminary and General	40%	25%
Extraordinary Construction Costs	50%	30%
Contractor's Offsite OH&P	40%	25%

2.3 METHODOLOGY

For the purposes of developing this estimate, we have assumed the following methodology for the installation of the underpass:

- The underpass will be installed open cut through the existing embankment.
- The works will be split into 2 stages to allow one-way traffic to be maintained on SH2. It is assumed the traffic travelling in the other direction will be diverted off SH2 earlier and re-directed on past this intersection.
- We have allowed to sheet pile down to 12m and excavate to subgrade.
- We have allowed for a 5m x 4m concrete culvert, with all construction details assumed.
- We have assumed a raft foundation and no allowance is included for piling.
- We have assumed that the full extent of crib wall on each side of the embankment will need to be replaced.

2.4 ALTERNATIVE METHODOLOGY & COST

The methodology described in 2.3 above will be very disruptive to traffic on SH2. The Aecom drawings referenced the works being completed under the Kiwirail line at Petone Station and indicated a similar methodology here. We believe that the works here are more complex than what we have seen of the Petone crossing due to the existing crib walls and abutments in close proximity to the works. As such we believe that these works would take longer than the 10 days indicated. It may therefore not be feasible to disrupt the SH2 traffic for this length of time.

However, without further engineering inputs, we are unable to develop a cost estimate for an option which effectively 'tunnels' below the SH without major disruption. We would suggest for budgeting purposes that a base estimate allowance of between **\$10m** and **\$15m** is carried to allow for this.

We therefore recommend that the value carried forward for budgeting reflects this higher cost. The table below uses the base estimate including contingency as the *Project Expected Estimate* and carries the alternative methodology costs as the *95th Percentile Estimate* (reflected as a 100% mark-up on the expected estimate).

Item	Description	\$
1	Project Base Estimate	7,571,025
2	Project Expected Estimate	12,884,841
3	95th percentile Project Estimate	25,800,000

2.5 GENERAL ASSUMPTIONS, EXCLUSIONS AND CLARIFICATIONS

As part of our estimate we have assumed the following:

- We have used the same Land Purchase costs as Aecom but are unsure what these are based on.
- Project Development fees are excluded
- Development contributions are excluded
- Temporary works to the existing bridge and flyovers is excluded
- We have allowed for 30% of excavated material to be contaminated.
- We have allowed for a signalised cycleway / pedestrian crossing to the south of the underpass
- GST is excluded
- We have included an allowance of night works for 10 days
- We have included an allowance of \$150k for urban design upgrades, to allow for etching or patterns to the new abutment retaining walls and the inside concrete face of the underpass
- Traffic management allowances are assumed based upon SH2 being shut in one direction for approximately 2 months in total.

DRAFT

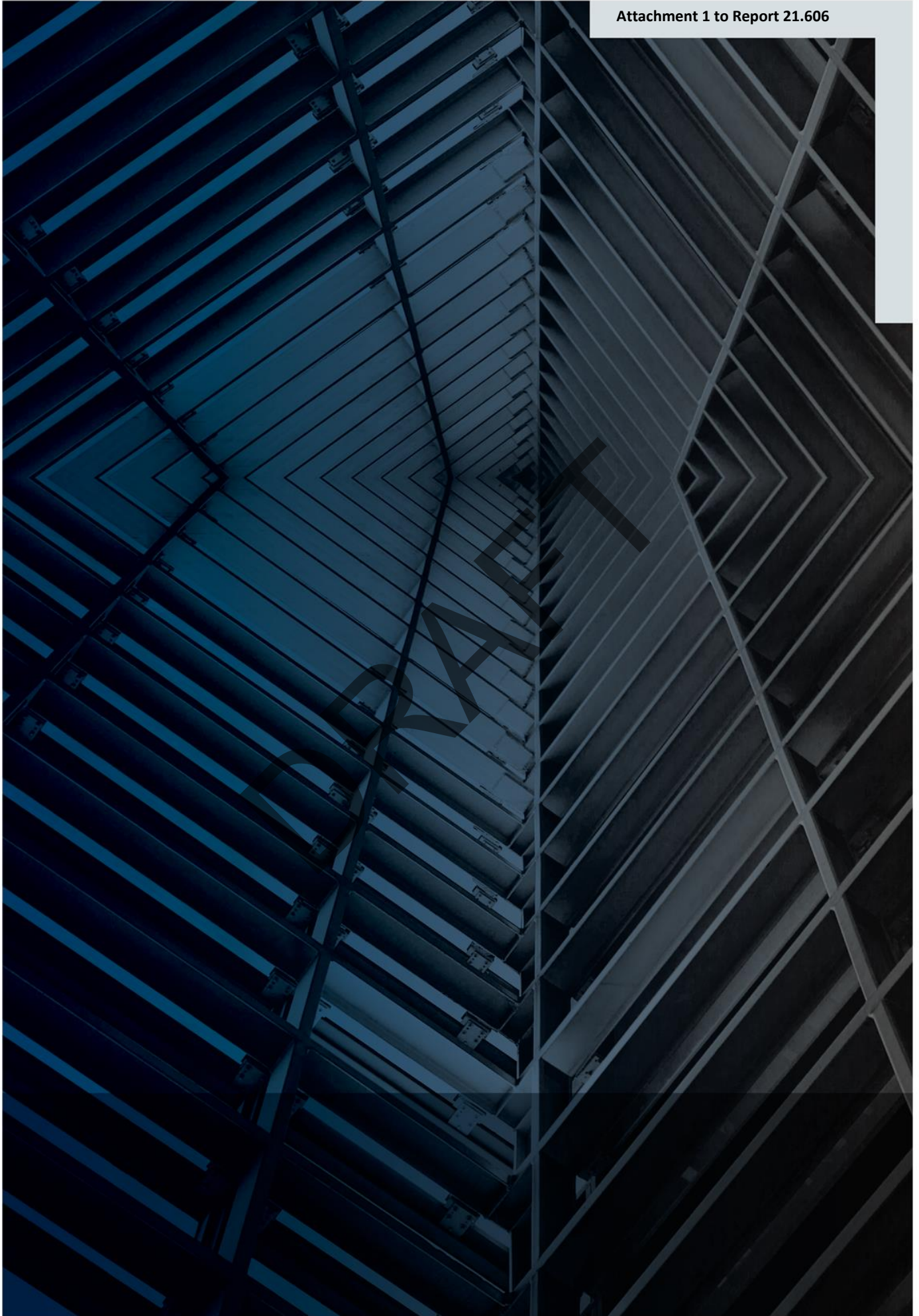


APPENDIX A

IBE Estimate Summary

Project Estimate - Form B		Indicative Business Case Estimate		
Project Name: LGWM - Thorndon Quay - The Connection		IBE		
Item	Description	Base Estimate	Contingency	Funding Risk Contingency
A	Nett Project Property Cost	110,000	33,000	27,500
B	Project Development Phase			
	- Consultancy Fees	Excluded	Excluded	Excluded
	- NZTA Managed Costs	Excluded	Excluded	Excluded
B	Total Project Development	0	0	0
C	Pre-Implementation Phase			
	- Consultancy Fees	877,338	263,201	219,334
	- NZTA Managed Costs	510,080	153,024	127,520
C	Total Pre-implementation	1,387,418	416,225	346,855
D	Implementation Phase			
	Implementation Fees			
	- Consultancy Fees	510,080	153,024	127,520
	- NZTA Managed Costs	391,742	117,522	97,935
	- Consent Monitoring Fees	0	0	0
	Sub Total Base Implementation Fees	901,822	270,547	225,455
	Physical Works			
	1 Environmental Compliance	82,337	32,935	20,584
	2 Earthworks	224,750	89,900	56,188
	3 Ground Improvements	57,969	28,985	17,391
	4 Drainage	68,882	27,553	17,221
	5 Pavement and Surfacing	177,108	70,843	44,277
	6 Bridges & Tunnels	1,929,132	964,566	578,740
	7 Retaining Walls	624,000	312,000	187,200
	8 Traffic Services	175,000	70,000	43,750
9 Service Relocations	50,000	20,000	12,500	
10 Landscaping	150,000	60,000	37,500	
11 Traffic Management and Temporary Works	660,000	330,000	198,000	
12 Preliminary and General	818,852	327,541	204,713	
13 Extraordinary Construction Costs	350,000	175,000	105,000	
14 Contractor's Offsite OH&P	697,844	279,138	174,461	
Sub Total Base Physical Works	6,065,874	2,788,460	1,697,524	
D	Total for Implementation Phase	6,967,696	3,059,006	1,922,979
E	Project Base Estimate (A+B+C+D)	8,465,114		
F	Contingency (Assessed/Analysed) (A+B+C+D)		3,508,232	
G	Project Expected Estimate (E+F)		11,973,346	
	Nett Project Property Cost Expected Estimate		Excluded	
	Project Development Phase Expected Estimate		0	
	Pre-implementation phase Expected Estimate		1,803,644	
	Implementation Phase Expected Estimate		10,026,702	
H	Funding Risk Contingency (Assessed/Analysed) (A+B+C+D)			2,297,334
I	95th percentile Project Estimate (G+H)			14,270,679
	Nett Project Property Cost 95th percentile Estimate			170,500
	Project Development Phase 95th percentile Estimate			0
	Pre-implementation Phase 95th percentile Estimate			2,150,498
	Implementation Phase 95th percentile Estimate			11,949,681
Date of Estimate		4Q 2021		
Estimate prepared by		Filip Lalovic		
Estimate internal peer review by		Luke Donnelly		
Estimate external peer review by		N/A		
Estimate accepted by NZTA				

Attachment 1 to Report 21.606





Appendix E

Traffic Modelling Summary

DRAFT



Traffic volumes for the SIDRA analysis were derived from pre-Covid traffic volumes. Currently, due to Covid-19 the number of trips into and out of the city has changed. Traffic has gone back to 10% lower in December 2021 and may increase further to pre Covid levels in near future. The changes to travel patterns due to Covid-19, combined with changes through the opening of the Transmission Gully project, will become clearer through ongoing monitoring. As monitoring establishes a normalised travel pattern, further video review work will be undertaken to confirm the traffic baseline.

The modelling analysis assumed:

- A 10% growth rate to 2031 at 1% per annum
- Sensitivity tests based on a 15% growth rate to 2031

The results of the initial modelling analysis undertaken showed that:

- Volumes on SH2 are regulated by upstream constraints at the southbound Petone entry slip lane, which is beneficial for the performance of the options as this regulates traffic reaching the SH2 / Jarden Mile / Centennial Highway (Nga Ūranga) intersection, so mitigating to some extent the impact of the reduced capacity of the two options.
- Historic data has shown that the future growth on the corridor is likely to be focused on the shoulders of existing peak travel times.
- The table shows the modelled average and 95% number of metres to the back of queue for both Option 1 and 1D. Cells highlighted in green indicates queue lengths are less than 400 metres (approximately the total length of the Hutt Road southbound off ramp slip lane) and cells highlighted in orange indicate queue lengths are greater than 400 metres.

Modelled SH2 southbound offramp queue lengths

	AM		PM	
	Average queue (m)	95% back of queue (m)	Average queue (m)	95% back of queue (m)
2021 Existing	73	118	222	362
2031 Existing	98	160	233	380
2031 Existing (Sensitivity Test)	114	185	257	419
2021 Option	118	193	227	370
2031 Option	154	251	300	490
2031 Option (Sensitivity Test)	170	277	346	565

- The predicted outcomes of the 95% back of queue for the 2031 scenario and both of the 2031 Sensitivity Test scenarios in the PM peak period are greater than 400 metres and therefore could affect the main movement along the SH2 southbound lanes.



www.lgwm.nz

Council
24 February 2022
Report 22.23



For Decision

PUBLIC TRANSPORT ANNUAL FARES REVIEW

Te take mō te pūrongo

Purpose

1. To advise Council on the fares share of operating funding and confirm fare levels for 2022/23.

He tūtohu

Recommendations

That Council:

- 1 **Notes** the assumption in the current Te Mahere Pae Tawhiti Long Term Plan 2021-31 (LTP) that fares will increase by inflation during the term of the LTP.
- 2 **Notes** that due to the ongoing impacts of COVID-19, fare revenue is expected to be below the levels budgeted in LTP.
- 3 **Agrees to:**
[either]
 - a increase fares from 1 July 2022 by 3 percent in line with the policy in Te Mahere Waka Whenua Tūmatanui o te Rohe o Pōneke Wellington Regional Public Transport Plan 2021-31 (which sets fare increases by inflation up to 3 percent)[or]
 - b retain the current fare levels over the next financial year 2022/23.
- 4 **Agrees** that from 1 July 2022, standard Metlink fares will replace the current special fixed fares on after-midnight services to encourage demand for the services.

Te tāhū kōrero

Background

2. Annual Fares Review (AFR) is a means to adjust the contribution of one of the three main sources of funding (fares, rates and national funding). This is to ensure costs are shared in a manner that is equitable and sustainable in the long term.

3. The AFR looks at the expectations of costs and revenue, and determines the extent of any fare adjustments required to balance the user contribution with public funding.
4. The AFR cycle for this year started in the second quarter of 2021/22 in line with the 2020/21 Annual Report and annual planning for 2022/23.
5. The requirements and assumptions related to AFR are set out in the Policies and Plans outlined in the following paragraphs.

Policy context

Wellington Regional Public Transport Plan

6. Policy 6.6(e) of Te Mahere Waka Whenua Tūmatanui o te Rohe o Pōneke Wellington Regional Public Transport Plan 2021-31 (RPTP) requires fares to be reviewed annually through the Annual Plan or Long Term Plan process.
7. The policy preference is for regular, rather than infrequent and substantial adjustments. This is intended to be primarily achieved by amending fare levels annually with inflation (within 1 to 3 percent), subject to reviews and Council decisions through the AFR process. Amending fares with inflation is also meant to align revenue with costs and help reduce the pressure on rates and debt funding.
8. Under the current policy, the AFR needs to consider likely impacts of any fare adjustments on patronage, affordability and mode shift, and on overall integrity of the fare structure within a wider policy and operational context.

Long Term Plan Budget

9. The budget set in the 2021-31 Long Term Plan (LTP) is based on the assumption that fares will increase annually by inflation during the term of the LTP (at 2.9% operational inflation rate for 2022/23).

Annual fares review process

10. The annual fares review involves:
 - a Reporting on performance against the fares and funding policies in the RPTP and LTP for the previous year (*performance review*); and
 - b Determining the extent of any fare adjustments required to achieve the expectations of fare revenue for the following year (*fare level review*).
11. The review also involves checking whether any aspect of the fare structure or policy needs review and any minor adjustments to tickets or ticketing operations required to ensure they are fit for purpose and deliver the expected fares policy outcomes.

Current comprehensive fares review

12. The Council's current comprehensive review of fares, to be enabled by electronic/integrated ticketing, is a separate matter to the AFR and is estimated to be implemented approximately 12 months on from this AFR.
13. Key components of the comprehensive review of fares along with pricing include fare structure, fare products and concessions.
14. With the exception of night buses, this year's AFR is simply adjusting prices to the existing structure, products and concessions.

Te tātaritanga

Analysis

Fare performance review (2020/21)

15. Performance review measures actual performance against the expectations in the LTP and reports the fares share of operating costs for the previous year (2020/21).
16. The outcome of the performance review for 2020/21 indicates that:
 - a Fares share of operating costs in 2020/21 (**excluding** Waka Kotahi's COVID-19 support for the foregone revenue) was 34 percent and below the budget.
 - b The Fares share of operating costs **with** Waka Kotahi's additional funding support was 43.6 percent and in line with the expected fares share of funding for 2020/21.

Fare level review (2022/23)

17. Fare level review involves determining the extent of any fare adjustments required to achieve the expectations of fare revenue for 2022/23.

Budget expectations

18. Based on the expectations of cost and revenue in the budget for the current year (2021/22) and 2022/23, fare revenue was estimated to recover approximately 35 percent of the total operating expenditure.
19. The budget assumes a sustained patronage recovery over the course of the LTP after returning to 2018/19 levels in 2021/22.

Actual and anticipated fares share of funding

20. At the end of December 2021, total fare revenue from bus and rail was approximately two thirds of the amount budgeted for and resulted in \$15.5 million revenue deficit.
21. The fares share of operating expenditure is therefore expected to potentially drop below 30 percent by the end of current financial year (2021/22) and likely include a material shortfall in 2022/23 (15-20 percent below budget depending on patronage recovery).

National funding

22. For the current financial year 2021/22, Waka Kotahi has agreed to fund 51 percent at current Funding Assistance Rate (FAR) of the additional revenue shortfall to 30 June 2022. The remaining 49 percent shortfall will be financed from debt funding; budgeted to \$8 million for the financial year 2021/22.
23. Assuming that Waka Kotahi will continue contributing to potential funding shortfall over the next two financial years at 51 percent, the remaining 49 percent is budgeted in LTP to be recovered from debt funding up to \$6 million for the financial year 2022/23 and \$4 million for 2023/24.

24. Any additional funding shortfall will be reassessed towards the end of the financial year to determine whether there is a need to increase the loan if patronage recovery is limited.

Fare adjustment options

25. Council may decide either to:
- a increase fares from July 2022 by 3 percent to help reduce the pressure on budget caused by COVID-19 restrictions and upward pressure of inflation on costs; or
 - b retain the current fare levels over the next financial year 2022/23.
26. Implications of these options are outlined below.

Potential impacts (price elasticities)

27. The table below shows the approximate impacts of patronage and revenue through either increasing fares by 3 percent or keeping fares unchanged:

	Fare increase by 3%	No fare change	Net impact of increase v no change
Patronage growth	0.3m (1%)	0.7m (2%)	-0.4m
Fare revenue increase	\$3m (4%)	\$1.5m (2%)	\$1.5m

Note: estimates are at current patronage and inflation levels

28. After accounting for the Waka Kotahi’s share of funding, the net revenue increase for Greater Wellington would be approximately \$0.75 million.

Potential impact on affordability and mode-share

29. It is noted that keeping the increase in fares below the actual inflation (3% v 5.9%), the extent of any impact on affordability of fares would be lower than the relative increase in other living costs.
30. Retaining the current fare levels could potentially encourage some higher patronage uplift. This is because the real fares at their current levels would be more affordable and competitive with the costs of non-active modes when accounting for the current inflation and fuel price.
31. Whether or not fares are adjusted, the increase in petrol price (30 percent to December 2021) combined with the high inflation rate is likely to encourage a potential shift to public transport largely by price sensitive groups.

Pricing impact of 3% fare increase

Non-cash fares

32. For bus and rail, the 3% fare increase would involve an average 3% increase in most non-cash fares, with some minor variations due to rounding.
33. Ferry fares are set at a higher price than standard fares. As a result, the non-cash ferry fares would increase by on average 3% (approximately).

34. Non-cash fares include Snapper, and rail and ferry 10-trip fares (which cover adult, child, Accessible Concession and Tertiary Concession), rail and ferry monthly passes, MonthlyPlus passes, and Wellington and Eastbourne 30 Day passes.

Cash fares

35. Cash fares are at least 25 percent higher than the Snapper/ten-trip fares and rounded up to 50 cents. Therefore, increases to cash fares would only be made once the increase rounds up to 50 cents.
36. For bus and rail there would be an increase of 50 cents to:
- a adult cash fares for zones 6, 7, 8, 9, 11, 13 and 14
 - b child/concession cash fares for zones 9, 11, 13 and 14.
37. All other cash fares would remain unchanged.

Other fares

38. Metlink Explorer day passes would increase by \$1.00 each.
39. The minimum fare on the afternoon outbound Wairarapa Line would be at the price of 8 zones cash ticket (\$11.00) with \$1.00 increase to each of the two surcharges.
40. Kāpiti Combo tickets and event tickets would remain unchanged.
41. Fares on after mid-night services are further discussed below.

After midnight fares review

Current state

42. The current after mid-night bus services have been in operation for over 10 years (since 1999), connecting Wellington suburbs as well as areas in Lower Hutt, Upper Hutt, Eastbourne, Porirua and Plimmerton to Wellington CBD during early hours of Saturdays and Sundays.
43. Currently the fares on after Midnight services are fixed fares and the same when using Snapper card or paying by cash on board (\$7.00 for up to and including 3 zones travel and \$14.00 for a single trip of 4 zones or more).
44. Except for SuperGold concession and some of the Metlink passes (including Metlink Explorer tickets and 30 Day bus passes), no other concession or discount is accepted on after midnight services.
45. Despite the after-midnight fares being set at a higher level than the standard Metlink fares, these services have a significantly low cost recovery from fares. This is primarily due to the low patronage and utilisation rate of these services.
46. Prior to COVID-19, patronage on after mid-night services accounted for a very small portion of all bus trips (less than 0.1%) with a relatively low utilisation rate and showing a declining trend. COVID-19 has resulted in a further decline in the usage of after midnight services.

Review of after midnight service fares

47. Metlink has undertaken a review of after midnight services and fares last year. As part of the review, Metlink has engaged with The Pōneke Promise, hospitality industry and social providers, and with people out on Friday and Saturday evening.
48. The current higher fares have been identified as a major barrier to using the after-midnight buses, along with the need to improve awareness of the service and making routes and numbering easy to understand.
49. As the first step, the review recommended replacing current fixed fares with standard fares (Snapper and cash). Further improvements are being considered to the after-midnight buses in the medium term – including to service frequency and marketing.

Impacts of replacing current after-midnight fares with standard fares

50. Replacing the current fixed fares with the Metlink standard fares means:
 - a Adults will pay the off-peak fares (as the services operate during off-peak hours)
 - b Passengers with a concession entitlement will pay a concession fare (currently child, accessible and tertiary concessions)
 - c SuperGold card holders, children under 5 years old and carers accompanying passengers with an accessible concession will travel for free
 - d The conditions for the tickets that are currently allowed on after-midnight services will remain unchanged (Metlink Explorer tickets and 30 Day bus passes)
51. These changes are expected to potentially increase demand for the after-midnight buses by approximately 50 percent (approximately 7,000 trips).
52. Fare changes would proportionally lower the revenue by approximately \$50,000-\$60,000 due to the overall reduction in fares.
53. As the after-midnight services account for a very small portion of the Metlink patronage and fare revenue, the expected reduction in revenue would have no material impact on budget.

Ngā hua ahumoni Financial implications

54. As set out above, the government part-funding of the lost fare revenue plus debt funding is expected to reduce the financial risk for the current year 2021/22 budget until end of June 2022. Any additional funding shortfall will be reassessed towards the end of the financial year to determine whether this will be loan or reserve funded.
55. The estimated revenue generated by a 3 percent fare increase is expected to reduce pressure on rates by approximately \$0.75 million.
56. Given the continuous Government response to resurgences of COVID-19 cases, any slower than expected patronage recovery may require additional funding to recover costs and keep up with inflation.

Te huritao ki te huringa o te āhuarangi **Consideration of climate change**

57. The AFR neither significantly contributes to nor is at odds with Council's and Greater Wellington's policies and commitments relating to climate change.
58. The AFR will not impact on greenhouse gas emissions to any significant degree.
59. The AFR has no significant implications for greenhouse gas emissions and therefore do not require an approach to reduce them.
60. Climate change impacts will not have any direct effect upon the AFR.

Ngā tikanga whakatau **Decision-making process**

61. The matter requiring decision in this report was considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga **Significance**

62. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matter, taking into account Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*.
63. Officers consider that the matter is of low significance, on the basis that:
 - a fare policies have been consulted on as part of the RPTP; and
 - b any fare adjustment would be in line with the policies set out in the RPTP

Te whakatūtakitaki **Engagement**

64. The RPTP sets out the Council's policies in relation to fare increases.
65. The RPTP was adopted following a Special Consultative Process.

Ngā tūāoma e whai ake nei **Next steps**

66. Should the Council decide to increase fare levels:
 - a Officers will engage with the operators and Snapper to implement the fare changes.
 - b Officers will develop an appropriate media campaign to advise the Metlink customers of the fare changes.

**Ngā kaiwaitohu
Signatories**

Writer	Reza Chalabianlou – Senior Advisor – Strategy and Funding
Approver	Richard Baker – Commercial & Investment Manager Tim Shackleton – Manager Strategy and Investment Scott Gallacher – General Manager Metlink

He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council or Committee's Terms of Reference</i> The Council has authority to make the decisions in relation to fares policies and funding fares initiatives for the Wellington Region.
<i>Implications for Māori</i> There are no known impacts for Māori.
<i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i> The proposals in this report contribute to the delivery of public transport aspects of the 2021-31 Long Term Plan.
<i>Internal consultation</i> In preparing this report there has been consultation with officers in the Public Transport, Finance and Community Engagement departments.
<i>Risks and impacts: legal / health and safety etc.</i> There are no identified legal or health and safety risks arising from the matters in this report.

Council
24 February 2022
Report 22.64



For Information

WELLINGTON RAILWAY STATION

Te take mō te pūrongo

Purpose

1. To provide an update on work being undertaken in relation to Wellington Railway Station.

Te tāhū kōrero

Background

2. The Wellington Railway Station is the only railway station on the Network not owned by Greater Wellington Rail Limited (a Council Controlled Trading Organisation).
3. GWRC leases the Wellington Railway Station from KiwiRail.
4. In 2014 a Detailed Seismic Assessment was undertaken by KiwiRail, which determined the building was Earthquake Prone.
5. There were four components within the building which influenced this status:
 - a the atrium trusses
 - b internal stairs
 - c unreinforced masonry ducts within the concourse
 - d urns in the outside of the building.
6. The building needs to be strengthened by 4 March 2024.

Remediation work undertaken and planned

7. In 2018, work to remediate the components outlined above was undertaken with most of these items addressed. There were, however, three items unable to be remediated due to the noise and vibration making it impossible for Train Control to work. They were put on hold and a project commenced to move Train Control from the building.
8. Train Control has a new location and will vacate the building by December 2022 whereby the remaining works can be undertaken.
9. These works will include the strengthening of the last stairwell (main KiwiRail stairwell), the removal of unreinforced masonry on Duct F within the concourse. The remediation of the urns being tied back into the building will be completed in February 2022.

Use and occupation of the building while outstanding items are yet to be completed

10. KiwiRail has advised it does not have substantive safety concerns about the ability of staff to continue to safely occupy the building and commuters to use the building. This is because the areas of local vulnerability are small and well understood, and the building is an IL3 structure¹. There is a clear plan to remediate the building after Train Control vacates in 2022 which will ensure the building is no longer earthquake prone.
11. A risk assessment has been undertaken by KiwiRail around these outstanding items and it was determined that there is a medium risk associated with these. The main area of concern was the unreinforced masonry duct in the concourse due to the public access and further detailed analysis was undertaken on this (as set out below).
12. KiwiRail has worked with seismic consultants, Holmes, and Hawkins Construction (Holmes), who undertook the remediation works to the other ducts within the main atrium, to assess whether an interim or temporary fix could be put in place to reduce seismic risk in respect of Duct F.
13. KiwiRail will be installing a scaffold wrapped with structural ply around Duct F in February 2022 which will reduce the risk of any falling masonry until the full remediation can be undertaken.

Greater Wellington assurance

14. From a Greater Wellington officer perspective, we have met with the KiwiRail Health and Safety representative to assure ourselves that all practicable steps have been taken.
15. We will meet with the KiwiRail Health and Safety representative again on completion of the work to brace and restrain the urns to undertake a joint inspection and to develop the HSW plan.
16. KiwiRail has also provided Greater Wellington with a copy of their Health, Safety and Wellbeing risk assessment on the seismic strength of the building which assesses the current residual risk to passengers and staff due to falling masonry and ability to escape via the stairwells in an emergency due to stairwell damage as medium.

Ngā tūāoma e whai ake nei

Next steps

17. We will continue to work with KiwiRail on the matters and will update the Council as required.

¹ The Building Code defines the significance of a building by its importance level (IL), which is related to the consequences of failure. There are five levels of importance, considered by the importance of the building to society. An IL 3 classification is used for structures that may contain crowds, have contents of high value to the community or pose a risk to large numbers of people in close proximity.

**Ngā kaiwaitohu
Signatories**

Writers	Fiona Abbott – Manager, Assets and Infrastructure, Metlink Julie Barber – Manager, Health and Safety, People and Customer
Approver	Scott Gallacher – General Manager, Metlink

<p style="text-align: center;">He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council's roles or with Committee's terms of reference</i> GWRC leases the Wellington Railway Station from KiwiRail.</p>
<p><i>Implications for Māori</i> There are no implications for Māori in this report.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i> The Wellington Railway Station is a key part of the public transport network.</p>
<p><i>Internal consultation</i> Metlink and People and Customer have been involved in the development of this report.</p>
<p><i>Risks and impacts - legal / health and safety etc.</i> This report deals with risks and impacts related to the Wellington Railway Station.</p>

Council
24 February 2022
Report 22.49



For Decision

PLAN CHANGES 2022: REGIONAL POLICY STATEMENT CHANGE 1 ISSUE STATEMENTS AND OBJECTIVES; PROGRAMME UPDATE

Te take mō te pūrongo

Purpose

1. To provide Council with an overview on work underway on the Regional Policy Statement (RPS) Change 1 and the Natural Resources Plan (NRP) Changes 1, 2 and 3, and to seek Council endorsement to the proposed approach to the RPS Change 1 including issue statements and objectives.

He tūtohu

Recommendations

That Council:

- 1 **Endorses** the draft issue statements and objectives for RPS Change 1 outlined in this report for the following topics: overarching / integrated management, climate change, indigenous ecosystems, urban development, and Te Mana o Te Wai, noting that they are likely to continue to evolve during the policy development phase.
- 2 **Agrees** that officers work jointly with Mana Whenua on amending the Tangata Whenua chapter.
- 3 **Notes** that the RPS Change 1 and NRP Changes 1, 2, and 3 are progressing towards August 2022 notification.

Te tāhū kōrero

Context

Regional Policy Statement Change 1

2. The RPS is the legislative instrument that must integrate national direction in the regional context and give integrated direction to the regional and district plans. RPS Change 1 includes four significant and urgent resource management issues: the impacts of climate change, loss and degradation of indigenous biodiversity, degradation of freshwater, and lack of urban development capacity. Climate change, indigenous biodiversity and freshwater create an integrated frame for how the RPS will direct urban development capacity and housing intensification.
3. The primary driver for undertaking RPS Change 1 in 2022 is the National Policy Statement on Urban Development (NPS-UD), which requires changes to the RPS and district plans by August 2022 to enable more urban development and housing

intensification. The NPS-UD sets a prescriptive framework for intensification and development, unless the district councils identify that growth would conflict with specific matters. These “qualifying matters” include giving effect to any other National Policy Statement and providing for matters of national significance (RMA section 6 matters). The RPS can identify these matters to give clear direction to district councils.

4. The National Policy Statement for Freshwater Management 2020 (NPS-FM) requires Te Mana o Te Wai to be articulated as an Objective and long-term visions for freshwater in the region to be embedded in the Regional Policy Statement. We intend for RPS Change 1 to give effect to these requirements in part, for those parts of the region where the whitua process has been completed.

Previous briefings

5. The Environment Committee was briefed at its June 2021 meeting on the context of the RPS and Proposed Natural Resources Plan (PNRP) and plan change work programme to give effect to the NPS-FM and NPS-UD (Report 21.148 refers). The Environment Committee was briefed at its August 2021 meeting on the scopes and forward work programme for each of the workstreams within RPS Change 1 and NRP Changes 1, 2 and 3 (see Report 21.340).
6. The Environment Committee was briefed at its October 2021 meeting (Plan Changes 2022 – Update on Work Programme and Natural Resources Plan Change 2 – Report 21.474), and the Council was briefed at its 9 December 2021 meeting (Plan Changes 2022 – Progress Update, Approach for RPS and NRP Changes – Report 21.516) on the progress with the overall work programme, and the progress with the RPS Change 1 and NRP Plan Change 1.

Next steps for RPS Change 1

7. The next stage of work will focus on the development of policies to achieve the new and amended objectives. The iterative nature of policy development means that the issue statements and objectives in this paper will be revisited, and are likely to be fine-tuned, to ensure alignment and integration with the new and existing provisions.
8. None of the issue statements or objectives have been worked through with Mana Whenua yet. All parties share the will to get the joint work programme underway, particularly in relation to Te Mana o te Wai. However, due to a lack of capacity the work has not yet progressed. Officers are continuing with work on Te Mana o te Wai provisions using the materials and knowledge provided by Mana Whenua through the three completed Whitua processes, and other documents that express Mana Whenua aspirations.

Te tātaritanga Analysis

Overview of work programme

9. Officers are progressing development of each of the four plan changes and the individual work-streams within those. Background work to inform the plan changes is now well progressed or concluding, engagement with territorial authorities and stakeholders is progressing, and the partnership with Mana Whenua continues to

develop. Refining options and determining a preferred approach is advancing on most plan changes, and development of amended provisions is also underway.

10. The Plan Changes 2022 Working Group continues to consider options and proposals and provide important input and feedback on options being progressed.
11. Establishing partnership arrangements for this work programme with Mana Whenua and engagement with stakeholders is coordinated across the plan changes where possible. A step up in engagement will be an important focus in this first quarter of 2022 and then through to finalisation in August 2022.

Regional Policy Statement Change 1

Overarching/integrated management issue statements and objectives

12. RPS Change 1 includes four significant and urgent resource management issues: the impacts of climate change, loss and degradation of indigenous biodiversity, degradation of freshwater, and lack of urban development capacity. Climate change, indigenous biodiversity and freshwater create an integrated framework for managing urban development capacity and housing intensification. The draft issue statements and objective also encompass the principles of integrated management.

Overarching issues statements

13. Overarching issue 1: Inappropriate and poorly managed use of the environment, including both urban and rural activities, have damaged and continue to jeopardise the natural environment, destroying ecosystems, degrading water, and leaving communities and nature increasingly exposed to the impacts of climate change. Projected population growth and future development will place additional pressure on the natural environment.
14. Overarching issue 2: Te Ao Māori and Mātauranga Māori have not been given sufficient weight in decision-making, including from governance through to implementation.

Overarching objective

15. Overarching objective: Integrated and respectful environmental stewardship that embraces Te Ao Māori and prioritises the health of the natural environment in a way that:
 - a incorporates Mātauranga Māori alongside other diverse knowledge and evidence
 - b recognises ki uta ki tai – the holistic nature and interconnectedness of all parts of the natural environment
 - c protects and enhances the life-supporting capacity of ecosystems
 - d recognises the dependence of humans on a healthy natural environment
 - e responds effectively to future pressures, including climate change, population growth and development.

Climate Change issues statements and objectives

16. A new Climate Change chapter will raise the profile of climate change as the most significant resource management issue that the region must address. The draft issue statements and objectives reflect the need for a transformative change to make the Wellington Region low-emission and climate-resilient.

Climate Change issues statements

Climate change issue 1: Greenhouse gas emissions must be reduced significantly, immediately and rapidly.

17. Immediate, rapid, and large-scale reductions in greenhouse gas emissions are required to limit global warming to 1.5°C, the threshold to avoid catastrophic impacts on the natural environment, the health and well-being of our communities, and our economy. Extreme weather events and sea level rise are already impacting our region, including on natural hazards, biodiversity, and water quality and availability. Historical emissions mean that we are already locked into continued warming until at least mid-century, but there is still an opportunity to avoid the worst impacts if global net anthropogenic CO₂ emissions are reduced by at least 50% from 2017 levels by 2030, and carbon neutrality is achieved by 2050. In the Wellington Region, the main sources of greenhouse gas emissions are transport (39% total load in 2018-19), agriculture (34%), and stationary energy (18%)¹.

Climate change issue 2: Climate change and the decline of ecosystem health and biodiversity are inseparably intertwined.

18. Climate change is placing significant additional pressure on species, habitats, ecosystems, and ecosystem processes, especially those that are already threatened or degraded, further reducing their resilience, and threatening their persistence. This, in turn, reduces the health of natural ecosystems, affecting their ability to deliver the range of ecosystem services, such as carbon sequestration, natural hazard mitigation, erosion prevention, and the provision of food and amenity, that support our lives and livelihoods.

Climate change issue 3: The risks associated with natural hazards are exacerbated by climate change.

19. The hazard exposure of our communities, infrastructure, food, and water security is increasing because of climate on a range of natural hazards. Traditional approaches to development that have not fully considered the impacts on natural systems, and our over-reliance on hard engineered protection works, will ultimately increase the risk to communities and the environment as built protection becomes overwhelmed and uneconomic to sustain.

¹ Stationary energy includes all fossil fuels (gas and coal) used in electricity generation and in the direct production of industrial heat.

Climate change issue 4: The impacts of climate change will exacerbate existing inequities.

20. The impacts and costs of responding to climate change will not be felt equitably. Some communities have no, or only limited, resources to enable mitigation and adaptation and will therefore bear a greater burden than others, with future generations bearing the full impact.

Climate change issue 5: Social inertia and competing interests need to be overcome to successfully address climate change.

21. Many people and businesses lack an understanding of the connection between their actions, greenhouse gas emissions, climate change, the ways that climate change will impact their lives and businesses, and the changes that they can make to help the transition to a low-emissions and climate-resilient future. Social inertia and competing interests are the biggest issues to overcome to address climate change.

Climate Change objectives

22. Climate change objective 1: Immediate, rapid, and large-scale changes have transformed the Wellington Region into a low-emission and climate-resilient region. Climate change mitigation and adaptation are an integral part of sustainable land and water management, well-functioning urban and rural environments, and built and natural infrastructure. The way in which we transition ensures that the costs are shared fairly and equitably across local and central government, businesses, and our communities.
23. Climate change objective 2: Net greenhouse gas emissions in the Wellington Region are reduced by 50% from 2017 levels by 2030 as a minimum, focusing on emissions from transport, agriculture, and stationary energy, with net-zero emissions achieved by 2050 to meet the global goal of limiting warming to 1.5 degrees Celsius. Regional Emission Reduction Targets will prevail over these targets if they are more ambitious.
24. Climate change objective 3: Nature-based solutions are a core part of climate change adaptation and mitigation, including protecting, restoring, and managing natural and modified ecosystems to improve the health and resilience of people, biodiversity, and the natural environment. Priority is given to solutions that provide multiple benefits for nature and people.
25. Climate change objective 4: Land use planning recognises and provides for the short, medium, and long-term effects of climate change and sea level rise and avoids land use and development that would exacerbate natural hazard risk. Hazard management responses do not cause, or increase the risk from, hazards or adversely impact on natural processes, ecosystems, biodiversity, and mahinga kai.
26. Climate change objective 5: People and businesses understand what climate change means for their future and are actively involved in planning and implementing appropriate mitigation and adaptation responses.

Indigenous Ecosystems issues statements and objectives

27. Amendments are required to the Indigenous Ecosystems chapter to:
- a align with the direction in Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020
 - b contribute to implementing the NPS-FM
 - c pre-emptively consider the draft National Policy Statement on Indigenous Biodiversity expected to come into effect in 2022
 - d recognise the importance of healthy indigenous ecosystems for climate change mitigation and adaptation, and the need to provide resilience in indigenous ecosystems to respond to climate change.
28. The below issue statements and objectives are the current RPS Indigenous Ecosystems chapter issues statements and objectives. Proposed changes are shown in red tracked changes.

Indigenous Ecosystems issues statements

Indigenous ecosystems issue 1: The region's indigenous ecosystems are reduced in extent

29. The region's indigenous ecosystems have been significantly reduced in extent and are being increasingly fragmented. Loss of area and connectivity reduce the resilience of ecosystems to respond to ongoing pressures and threaten their persistence. The indigenous ecosystems most reduced in extent are:
- a wetlands
 - b lowland forests
 - c lowland streams
 - d coastal dunes and escarpments
 - e estuaries
 - f eastern 'dry land' forests.

Indigenous ecosystems issue 2: The region's remaining indigenous ecosystems are under threat

30. The region's remaining indigenous ecosystems, and the ecosystem processes that support them, continue to be degraded or lost due to ongoing pressure from invasive species, human use and development, and climate change.

Indigenous Ecosystems objectives

31. Objective 16 (amended): Indigenous ecosystems and habitats with significant ecosystem and/or biodiversity values, including those that make a significant contribution to climate change mitigation and/or adaptation, are increased in extent, and their condition restored to a healthy functioning state.

Objective 16A (new): The ecosystem health and connectivity of indigenous ecosystems, including the ecological processes that support them, are maintained and restored, and are resilient to the effects of climate change.

Urban Development issues statements and objective

32. The NPS-UD requires changes to the RPS, and district plans by August 2022 to enable urban development and housing intensification and provide for well-functioning urban environments that meet the changing needs of diverse communities.

Urban Development issues statements

33. Urban development issue 1: The Wellington Region lacks sufficient, affordable, and quality housing supply and choice to meet current demand, the needs of projected population growth and the changing needs of our diverse communities. Housing affordability has declined significantly over the last decade, causing severe financial difficulty for many lower-income households, leaving some with insufficient income to provide for their basic needs and well-being. There is a lack of supporting infrastructure to enable the development of sufficient housing and ensure quality urban environments.
34. Urban development issue 2: Inappropriate and poorly managed urban land use and activities have damaged, and continue to jeopardise, the natural environment, degrade ecosystems, particularly aquatic ecosystems, and increase the exposure of communities to the impacts of climate change.

Urban Development objective

Urban development objective: Urban development, including housing and infrastructure, is enabled in ways that deliver well-functioning and liveable urban environments which:

- a provide for sufficient development capacity to meet the needs of current and future generations, and
- b improve the overall health, well-being, and quality of life of the people of the region, and
- c protect and enhance the quality of the natural environment, and
- d support the transition to a low-emission and climate-resilient region, and
- e provide for a variety of low-emission housing types, and
- f enable Māori to express their cultural and traditional norms, and
- g support the competitive operation of land and development markets in ways that improve housing affordability, including enabling intensification, and
- h provide for commercial and industrial development in appropriate locations, including employment close to where people live, and
- i are well connected through multi-modal (private vehicles, public transport, walking and cycling) transport networks.

Te Mana o Te Wai issues statements and objectives

35. The NPS-FM requires that regional councils include an objective in the RPS that *“describes how the management of freshwater in the region will give effect to Te Mana o te Wai.”*² In addition, the RPS will also need to include long term visions as objectives for freshwater.
36. As directed by Mana Whenua, Officers have used the materials and knowledge previously provided by Mana Whenua to draft Te Mana o te Wai issue statements and objectives. The information was primarily from the completed Whaitua processes.

Draft Te Mana o te Wai issues statements

37. Te Mana o te Wai issue 1: Decision-making has prioritised the use of water for human and economic needs over the health and well-being of the waterbodies. As a result, the use of water for human and economic benefit has come at the expense of protecting the mauri of the wai and led to degraded, depleted and highly modified aquatic ecosystems.
38. Te Mana o te Wai issue 2: Mana Whenua have been alienated from carrying out cultural responsibilities (such as kaitiakitanga) and practices through a loss of rangatiratanga and decision-making power and disconnection from land and water bodies. This includes access to mahinga kai, the ability to manaaki manuhiri, as well as other customary practices or tikanga.
39. Te Mana o te Wai issue 3: The allocation of water has not been equitable. As a result, Mana Whenua and new users have predominately been shut out from equitable access to or allocation of water.

Draft Te Mana o te Wai objectives

40. Te Mana o te Wai objective 1: The mauri/mouri, health and well-being of water bodies and freshwater ecosystems is given priority so that the mana (dignity and esteem) of water as a source of life is restored. This includes:
 - a ensuring water bodies support healthy functioning ecosystems
 - b regarding and respecting all water bodies (including āku waiheke), repo (wetland) and estuaries as living entities
 - c caring for water in an integrated way through mai i uta ki tai
 - d ensuring water bodies are able to express their character and āhua, and exhibit their natural rhythms, forms, and hydrology

² The NPS-FM includes further detail on what we must do when “giving effect” to Te Mana o Te Wai:

- actively involve tangata whenua in freshwater management (including decision-making)
- engage with communities and tangata whenua to identify long-term visions, environmental outcomes, and other elements of the NOF;
- apply the hierarchy of obligations;
- enable the application of a diversity of systems of values and knowledge, such as mātauranga Māori, to the management of freshwater; and
- adopt an integrated approach, ki uta ki tai.

- e providing the conditions for mahinga kai species to thrive
 - f ensuring the resilience, health and well-being of water in a changing climate
41. Te Mana o te Wai objective 2: The sustained and improved mauri/mouri, health and wellbeing of water enables the second priority of essential human health needs to be met, now and in the future, including:
- a quality drinking water to support health
 - b water to maintain cleanliness/hygiene, and
 - c water that supports spiritual and mental health practices.
42. Te Mana o te Wai objective 3: People and communities are able to provide for their social, economic, and cultural well-being now and in the future through a respectful relationship with water bodies where the mauri/mouri, health and well-being of water bodies and freshwater ecosystems is prioritised.

Proposed approach for Tangata Whenua chapter

43. The Tangata Whenua chapter in the operative RPS was not signalled for amendments in RPS Change 1, and we anticipated that any changes would be considered as part of the full review of the RPS signalled for 2024. However, the work on issues statements and objectives identified the need to give the chapter greater prominence and address some commonalities across different chapters.
44. The Tangata Whenua chapter sits late in the operative RPS document (Chapter 3.10). Officers consider that moving the Tangata Whenua chapter to earlier in the RPS, and placing the relevant common objectives in the Tangata Whenua chapter would better:
- i. represent the importance of Te Ao Māori and Mana Whenua issues to the Wellington Region
 - ii. capture the holistic nature of Te Ao Māori for all natural resources rather than addressing it separately in each chapter
 - iii. express common issues and objectives in relation to Mana Whenua across the RPS and avoid repetition or inconsistencies across chapters
 - iv. reflect the ordering of sections in the National Planning Standards.
45. Officers will work jointly with Mana Whenua on potential changes to the Tangata Whenua chapter. There is a risk that adding new objectives and policies to the Tangata Whenua chapter could open the whole chapter to scrutiny and submissions when neither Mana Whenua nor Greater Wellington will have been able to sufficiently consider and review the existing provisions. Good communication will be important to reflect the intent to review the chapter in its entirety through the RPS review signalled for 2024.

Natural Resources Plan Changes updates

Plan Change 1 update

46. The purpose of Plan Change 1: Implementation of the National Objectives Framework – Part 1 (PC1) is to give effect to the NPS-FM and more specifically will be the first of two plan changes that implement the National Objectives Framework (NOF). The NOF is a prescriptive process set out in the NPS-FM requiring Council's to work with community and tangata whenua to develop outcomes for freshwater bodies and ecosystems. PC1 is focused on provisions in Te Awarua-o-Porirua and Te Whanganui-a-Tara whitua and will set objectives for water quality and ecosystem health and incorporate policies, rules and other methods related to issues such as stormwater, wastewater, earthworks.
47. Officers are developing the plan change objectives and policy approaches for Te Awarua-o-Porirua and Te Whanganui-a-Tara whitua. Mana whenua have indicated their interest in Plan Change 1 and conversations to establish working relationships with Mana Whenua is ongoing. The Whitua process is being drawn on heavily, and packages of provisions are in development to understand the options and implications of implementing the NPS-FM.
48. Technical work, including with Wellington Water Limited, is continuing community drinking water supply protection areas and updated NRP provisions/schedules.

Plan Change 2 update

49. Plan change 2 consists of amendments to the NRP relating to water quantity and allocation. The amendments are informed by the three Whitua Implementation Programmes (WIPs) received by Council so far, as well as feedback from consenting officers on the existing provisions in the NRP.
50. Several issues (non-consumptive takes, permitted takes, over-allocation clawbacks, municipal supply takes) have been analysed to develop preferred options. These will be submitted to Council for decision later, following engagement with existing consent holders and stakeholders, as part of a complete suite of water allocation provisions. Work is also continuing incorporating WIP recommendations into the NRP provisions as well as developing policy options for water races and Category A groundwater.
51. Officers are continuing to work with a range of council specialist areas on preferred policy options and drafting of provisions. This process is helping to evaluate the effectiveness of the current policies and rules from an implementation perspective.
52. Engagement with key stakeholders is being planned to introduce the plan change and its drivers (i.e., the WIPs and the NPS-FM 2020). Information about the technical work being undertaken in Parkvale, Booths Creek, Tauanui and Turanganui catchments in the eastern part of the Ruamāhanga catchment has been sent to landowners and officers have yet to receive any queries about this work.

Plan Change 3 update

53. Plan Change 3 includes several independent updates to the NRP. Work on Plan Change 3 is primarily adding to existing schedules, updating related maps, and minor wording updates.
54. Current indigenous biodiversity sites identified in the NRP are being updated with new information gathered and assessed since the PNRP was notified in 2015. Technical reports have been completed and sites peer reviewed to ensure proposed additions to the schedules meet the significance criteria (set out in the Regional Policy Statement).
55. There are 31 additional habitats to be added to Schedule F2: Significant habitats for indigenous birds; two within rivers and 29 in the coastal marine area. The 51 existing sites were also reviewed and alterations to some of the boundaries of 43 sites have been recommended.
56. There are 13 new sites to be added to Schedule F4: Sites with significant indigenous biodiversity values in the coastal marine area and one new habitat to be added to Schedule F5: habitats with significant biodiversity values in the coastal marine area.
57. This plan change also includes additions to natural character schedules as foreshadowed in the PNRP (Method M24). Officers are working on mapping, drafting amended provisions, and identifying private land parcels potentially impacted (most of the areas identified are on public (crown) land). A small number of private and public (i.e., Territorial Authorities) landowners (13) have been identified in the jurisdictional area of the NRP and engagement with them has commenced. Engagement on the amendments is also underway with territorial authorities including through the Regional Planning Managers Group.

Ngā hua ahumoni

Financial implications

58. The current work programme has been approved through the Long Term Plan. There are no immediate financial implications associated with this report.
59. It is anticipated that the overall implementation of the plan changes may have impact on the future Long Term/Annual plan cycles due to the long timescale and magnitude of the delivery. Assessment of potential implications and costs/benefits will be part of the section 32 report prepared as part of the RMA plan change documents.

Te huritao ki te huringa o te āhuarangi

Consideration of climate change

60. Climate change considerations are fundamental in RMA processes. The RPS Change 1 includes addition of a new Climate Change chapter as well as consideration of climate change across all the RPS chapters. The RPS objectives in this report reflect the need for the change to make the Region low carbon emission and climate resilient.

Ngā tikanga whakatau

Decision-making process

61. Council's core decisions will be in determining whether to notify the plan changes, having had regard to RMA section 32 matters in August 2022. Interim steps are reported for each workstream (including this report) towards the formal plan change documentation in August 2022.

Te hiranga

Significance

62. Officers have considered the significance of the matter, taking into account the Council's significance and engagement policy and decision-making guidelines. Due to the iterative nature of policy development process, for this decision, officers recommend that the matter be considered to have low significance.

Te whakatūtakitaki

Engagement

63. Engagement with stakeholders has commenced and will continue through to August 2022 as relevant information and decision points are reached. An update on partnership and engagement relevant to this report is provided in the analysis section above.
64. Officers had some focused engagement on RPS Change 1 issues and objectives with the city and district councils through the Regional Planning Managers Group. Further engagement on the issues statements and objectives will be carried through the engagement on the policy options approach and draft provisions package.
65. Engagement to date has been focused on individual workstream interests. A coordinated engagement plan across all work streams is in development with an engagement specialist. This will provide a plan to implement a coordinated engagement effort through to August 2022.
66. Officers are also working with the Marketing and Communications Team to identify audiences for this work programme and appropriate communications channels, and timing. This work is considering both identified stakeholders and a broader public audience.

Ngā tūāoma e whai ake nei

Next steps

67. To meet an August 2022 notification date, there is regular reporting to Council. The next updates on progress and approaches will be to the March 2022 Council meeting.
68. Continue engagement with key parties on these plan changes. We will be updating the Wellington Regional Leadership Committee on the RPS changes – specifically in relation to implementing the Wellington Regional Growth Framework through the RPS changes. We hope to make significant headway in engaging with our Mana Whenua partners.

69. An engagement plan that will cover the RPS Change 1 and the Natural Resources Plan changes is being developed.
70. At Council workshops and meeting in March/April 2022, the following will be put forward:
 - a The preferred policy approaches for RPS Change 1 topics
 - b The preferred approach for Plan Change 2 (water allocation topics)
 - c Preferred approaches and draft provisions/mapping for Plan Change 3 (natural character and indigenous biodiversity).
71. At Council workshops and meetings in April/May 2022, the NRP Plan Change 1 approaches, options and provisions development will be a key topic, and ongoing development of provisions and analysis for RPS Change 1, and NRP Plan Changes 2 and 3.

**Ngā kaiwaitohu
Signatories**

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He whakarāpopoto i ngā huritaonga Summary of considerations
<p><i>Fit with Council's roles or with Committee's terms of reference</i></p> <p>The considerations in this report align with Council's role and responsibility. The Council has responsibility to agree to changes to RMA plans including the Regional Policy Statement and Natural Resources Plan.</p>
<p><i>Implications for Māori</i></p> <p>The NPS-FM requires that freshwater is managed in a way that 'gives effect' to Te Mana o te Wai, fundamentally through involving Mana Whenua in all elements of that management. The current RPS and NRP Plan Change programme provides opportunities for mana whenua to be an integral part of the plan development process if they choose to be.</p> <p>RPS Change 1 will also provide significant opportunities for Mana Whenua to exercise their decision-making role as directed in the NPS-FM 2020.</p> <p>The RMA Schedule 1 process requires that Tangata Whenua, through Iwi authorities, are consulted on proposed plan changes in accordance with a Mana Whakahono a Rohe.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>The RPS sets out the framework and priorities for resource management in the Wellington region. RPS Change 1 is aligned with Greater Wellington's strategic directions and legislative responsibilities.</p> <p>Implementation of the national direction including the NPS-FM is a core resource management activity of the current LTP. Additional resources were allocated in the new LTP to meet Council's statutory obligations under the RMA.</p>
<p><i>Internal consultation</i></p> <p>Internal consultation with relevant internal groups has been undertaken for this report, and it will continue, as required.</p>
<p><i>Risks and impacts - legal / health and safety etc.</i></p> <p>There is legal risk to Council if the statutory obligations of the NPS-FM and NPS-UD are not met. This includes the RPS giving effect to the NPS-UD by August 2022.</p> <p>If changes to district plans to enable intensification (as required by the NPS-UD) are made without the RPS Change 1 provisions to direct where and how urban development occurs, there are significant environmental, socio-cultural and human health and wellbeing risks.</p>

Council
24 February 2022
Report 22.66



For Decision

LOW CARBON ACCELERATION FUND REVIEW

Te take mō te pūrongo

Purpose

1. To inform Council of the findings of the review of the Low Carbon Acceleration Fund (LCAF).

He tūtohu

Recommendations

That Council:

- 1 **Agrees** to:
 - a expand the total amount of funding under the LCAF to reflect the increasing value of Council's free allocation New Zealand Units.
 - b limit the funding to no more than 70 percent of the present value of the Council's 255,660 free allocation New Zealand Units that underpin the LCAF across all LCAF projects, past and present, determined by the current New Zealand Unit spot price at the time of funding decisions.
 - c pause further consideration of allocations of funds from the LCAF if the spot price of New Zealand Units drops, causing the current allocation of LCAF funding to exceed the 70% threshold.
- 2 **Agrees** that a provision for borrowing to support the expansion of the LCAF be included in the 2022-23 draft annual plan.
- 3 **Agrees** to expand the eligibility criteria of the LCAF to permit bids from Wellington Regional Stadium Trust (Option 1), noting that bids from within the Council will have priority.
- 4 **Notes** that none of the other criteria or decision-making processes for the LCAF are changed from what was previously agreed by Council, apart from the change described in recommendation 3.

Consideration by Committee

2. The matters for decision in this report were considered by the Climate Committee at its meeting on 15 February 2022. The Committee endorsed the report recommendations and recommended that Council approve the increase in LCAF funding and the expansion of the eligibility criteria.

Te tāhū kōrero

Background

3. On 21 August 2019, Council declared a climate emergency and adopted a target of reducing organisational carbon emissions to net zero by 2030. This declaration was supported by two ten-point action plans, a Corporate Carbon Neutrality Action Plan, and a Regional Climate Emergency Action Plan.
4. One of the actions in the Corporate Carbon Neutrality Action Plan is to:
 10. *Sell down the free allocation of carbon credits (NZUs) GWRC received for its pre-1990 forests to create a 'low carbon acceleration fund' to reduce the rates impact of this programme of work.*
5. This 'programme of work' is the pursuit of carbon neutral and then climate positive status for Greater Wellington as an organisation by reducing gross emissions and restoring native forests within its parks.
6. Council obtained a one-off free allocation of 255,660 New Zealand Unit (NZUs) carbon credits from the Government as part of the introduction of the Emissions Trading Scheme (ETS). At the time of writing, the spot price of NZUs in the ETS is \$75.25, meaning if they were sold today at this price, the proceeds would be \$19.2 million.
7. Council decided to borrow against the value of these emissions units because the capital gain from their increasing price is greater than the costs of interest from borrowing. Some of the units will need to be sold at some point in the future to repay the borrowing, but this is not likely to be necessary for many years.
8. The borrowed funds constitute the LCAF, the purpose of which is to help spur a step change in Council activities to reduce its emissions and achieve its agreed carbon reduction goals (primarily corporate carbon neutrality from 2030), while mitigating the rates impact of this work. The current criteria of the fund (outlined in [Attachment 1](#)) reflect this purpose.
9. The LCAF operated with a contestable funding round in 2020-21, with \$2 million available to allocate that year. Climate Committee had responsibility for considering bids and making recommendations to Council. The \$2 million was secured for projects related to the retirement of grazing and the establishment of native forest in regional parks, including projects at Kaitoke Regional Park and Queen Elizabeth Park, to employ a restoration co-ordinator and to make a detailed restoration plan for the remainder of the grazing land in parks identified for retirement.
10. In the 2021-31 Long Term Plan (LTP) process, the continued operation of LCAF and its purpose were revalidated following public consultation. A further \$6 million from it was allocated to the Parks restoration project through the LTP process. The total allocation to date (\$8 million) represents the approximate total value of the fund at the time of its approval in April 2020. The continuing rise in the value of NZUs raises the potential to borrow more to fund further projects.
11. This triggered a review of the fund, as discussed by the Climate Committee at its meeting on 19 October 2021, (Low Carbon Acceleration Fund update – Report 21.467) which has the purpose of answering the questions:

1) How should the Council's endowment of free allocation NZUs be managed to maximise the benefits while mitigating the financial risks?

2) What is the potential for further bids to the LCAF for projects that could meet its existing criteria?

3) How could the LCAF criteria be adjusted to make a wider range of projects eligible?

4) Would these newly eligible projects help Council meet its agreed carbon reduction goals, and more broadly, what are the advantages and disadvantages of any proposed adjustment to the LCAF criteria?

5) What is the potential for additional bids to the LCAF for projects if its criteria are adjusted?

12. This report summarises officers' findings in relation to each question and recommends a course of action.

Te tātaritanga Analysis

How should the Council's endowment of free allocation NZUs be managed to maximise the benefits while mitigating the financial risks?

13. Greater Wellington's Finance department has been consulted and they in turn sought advice from PricewaterhouseCoopers (PwC). PwC recommended not spending more than 70 percent of the current value of the emissions units underpinning the LCAF. The rationale is that this 30 percent buffer will guard against the effects of a drop in the value of NZUs, that could otherwise leave Greater Wellington in a position of having spent or borrowed more against these assets than they are worth. Their advice is to use this 30 percent buffer as a dynamic 'soft cap' on spending from the LCAF.
14. If there was a significant fall in the trading price of NZUs, there could be a freeze on spending from the LCAF until the 30 percent buffer had been regained. Greater Wellington could evaluate the option of selling some NZUs to start paying back the loans during such a hiatus, or if the NZU price had simply been static for a long time (approximately one year). The soft cap would be recalculated and advised to Council whenever a decision to allocate funding from the LCAF was before them.
15. 70 percent of the current value of the emissions units underpinning the LCAF is \$13.5 million. Removing the \$8 million that has been allocated for native forest restoration in Parks leaves \$5.5 million presently available under this cap. Interest costs also need to be repaid from the LCAF, so these would need to be taken into consideration when making new allocations.

What is the potential for further bids to the LCAF for projects that meet its existing criteria?

16. Projects that reduce Greater Wellington's organisational emissions (carbon footprint), excluding Centreport, Wellington Water Ltd (WWL) and Wellington Regional Stadium (WRS) are eligible under existing criteria. Bids for feasibility and planning are eligible alongside bids for implementation funding. The LCAF explicitly aims to fund those activities that would not have happened otherwise. It also aims to reduce emissions

significantly and projects that affect Greater Wellington’s largest sources of emissions have the most potential to do this.

17. As illustrated in Figure 1, given the exclusions, the largest sources of emissions eligible for the LCAF are Metlink bus and rail services and grazing in regional parks.

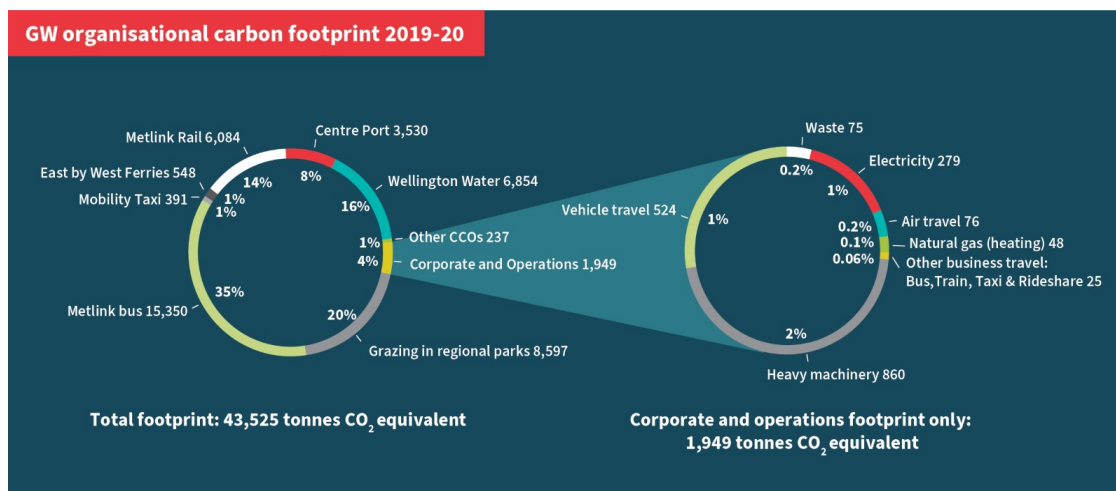


Figure 1 – Greater Wellington’s organisational carbon footprint

18. No bids for LCAF funding were received from Metlink during 2020-21. However, subsequent business cases have been developed for projects with carbon reduction potential that were not funded as part of the LTP. Some of these could be considered under the current LCAF criteria, notably the conversion of existing diesel buses to battery electric motive power, and possibly the expansion of public transport on demand services, should they displace the use of diesel bus services.
19. For Regional Parks, the maximum feasible rate of grazing retirement and restoration was approved as part of the 2021-23 LTP. This means there is not likely to be potential further acceleration of this activity, even if more funding was made available. Enhanced carbon sequestration in existing areas of native forest could possibly be achieved through increased control of browsing pest animals. However, these gains would be reversed if pest management activities were ever stopped. As LCAF is for projects, rather than an ongoing source of business-as-usual funding, it is not suited to supporting ongoing pest control activities.
20. Other potential projects in scope within the current LCAF criteria include replacing fossil fuelled vehicles in the corporate fleet with EVs (provided this is accelerated) and installing solar photovoltaic (PV) systems. The emissions reduction potential of EVs for Greater Wellington is limited to the number of fossil-fuelled vehicles we need to replace. The potential for solar PV is limited only by the suitable physical space Greater Wellington could use to install panels, since any excess electricity generated can be exported and sold, and Greater Wellington can use renewable energy certificates to claim the carbon reduction benefits of this. Using solar PV panels as covered car-parking at park-and-ride facilities could be considered, as it is a compatible usage of the land. For Council’s most significant land holding, regional parks, the commercial activity of large-scale solar PV electricity production is not compatible with the land’s designation for recreation and conservation.

Nga kōwhiringa

Options

How could the LCAF criteria be adjusted to make a wider range of projects eligible?

Would these newly eligible projects help Council meet its agreed carbon reduction goals, and more broadly, what are the advantages and disadvantages of any proposed adjustment to the LCAF criteria?

21. While retaining the overall goal of using the LCAF to hasten carbon emissions reduction, and while also seeking the maximum possible impact from these funds, there are five possible permutations of the eligibility criteria that are explored. The options for potential inclusion in the LCAF are outlined below:
22. **Option 1:** Allow applications for projects that reduce the emissions of Wellington Regional Stadium (preferred option).

Advantages:

- a Projects at WRS will directly contribute to Greater Wellington's emission reduction goals, as well as those of the co-owners.
- b Where the projects produce financial benefits, part of these will accrue to Greater Wellington, albeit indirectly.
- c Accountability is easier to manage as Greater Wellington has representation on the board of this organisation.
- d WRS have described potential carbon reduction (energy efficiency, fuel switching or renewable energy) projects that either warrant further investigation or are ready to implement if funding were available.

Disadvantages:

- a There is additional administration of grants (or possibly loans) to manage, compared to internal projects.
23. Option 1 is the preferred option as it has significant advantages and few disadvantages. It supports the LCAF purpose to help spur a step change towards Greater Wellington achieving its agreed carbon reduction goals, primarily corporate carbon neutrality from 2030.
 24. **Option 2:** Allow applications for projects that reduce the emissions of Wellington Water Limited (WWL).

Advantages:

- a Projects at WWL will directly contribute to Greater Wellington's emission reduction goals, as well as those of the co-owners.
- b Where the projects produce financial benefits, part of these will accrue to Greater Wellington, albeit indirectly.

- c Accountability is easier to manage as Greater Wellington has representation on the board of this organisation.
- d WWL have described potential carbon reduction (energy efficiency or renewable energy) projects that either warrant further investigation or are ready to implement if funding were available.

Disadvantages:

- a There is additional administration of grants (or possibly loans) to manage, compared to internal projects.
- b WWL is scheduled to be absorbed into the new water authority in 2024. It is not currently clear how investment in WWL by Greater Wellington that occurs between now and then would be dealt with as part of this transfer. It is unlikely that Greater Wellington will include any proportion of the emissions from the operation of the water supply assets in its organisational carbon footprint once control of them is passed to the new authority, although its emissions will still be included in the regional footprint.

25. **Option 3:** Allow applications for projects at CentrePort.

Advantages:

- a Projects at CentrePort will directly contribute to Greater Wellington's emission reduction goals, as well as those of its other owners.
- b Where the projects produce financial benefits, part of these will accrue to Greater Wellington, albeit indirectly.

Disadvantages:

- a CentrePort already has a \$14 million low interest loan from the Green Investment Bank to implement its carbon reduction plans, has significant cash reserves and the ability to raise finance independently. As such, there would be limited demand for additional funding (with additional administration costs) to pursue carbon emission reductions.

26. **Option 4:** Include projects that primarily or exclusively reduce emissions outside of Greater Wellington's organisational carbon footprint but are still led by Greater Wellington.

These projects would likely be extensions to Greater Wellington's existing activities such as public transport, land management, pest management, healthy homes grants and travel choice, as entirely new Greater Wellington led activities would need to be approved via the LTP process.

Advantages:

- a Greater Wellington would have direct control of these projects, simplifying accountability and financial arrangements.

- b Such projects would represent temporary increases to Greater Wellington's levels of service to the public and would reduce the regional carbon footprint.

Disadvantages:

- a Such projects would not help Greater Wellington towards becoming carbon neutral or climate positive. In some cases, they could cause increases in Greater Wellington's organisational emissions by increasing activity levels.
 - b As many of these functions involve influencing behaviour through the provision of advice, it will be difficult to reliably quantify the impact of such projects on emissions.
 - c Pest control activities in existing, unfenced forests need to continue indefinitely to maintain the associated carbon gains, so are not suited to project finance.
27. **Option 5:** Include projects that are intended to reduce emissions outside Greater Wellington's own carbon footprint and are led by external organisations.

That is, invite applications for LCAF funding from external organisations such as businesses, charities, societies and trusts.

The Wellington Community Trust ran a one-off climate action funding round in 2020. Wellington City Council announced their publicly contestable 'climate and sustainability' fund in late 2021. Upper Hutt City Council has a 'sustainability stimulus' public grant fund, opening in February 2022, which can be used for carbon reduction projects in their community. Option 4, if implemented, would share many similarities with these.

Advantages:

- a A very broad range of projects could be eligible.

Disadvantages:

- a Such projects would not help Greater Wellington towards its carbon neutral and climate positive goals, although they could reduce the regional carbon footprint.
- b Maintaining accountability to ensure the promised outcomes are achieved would be more challenging compared to internal projects, representing greater risk relative to the potential rewards.
- c Many community organisations, especially those run by volunteers, may lack the capacity to make well-formed proposals, and may need significant support beyond funding to manage implementation of their project.
- d There would be additional costs to Greater Wellington to administer a publicly accessible fund. The Wellington Community Trust, for example, had administration costs of \$1.2 million in 2018-2019 compared to the \$5.5 million of grants they awarded in the same period.
- e This option represents a new activity for Greater Wellington, one that the public has not been consulted on. If Council wished to take it, public consultation (as part

of the Annual Plan process for example) would be required. This and the resourcing of suitable administration for the new funding stream would take considerable time to enact.

What is the potential for further bids to the LCAF for projects if its criteria are adjusted?

28. **Attachment 2** provides an initial assessment of project ideas gathered during the review period against the existing LCAF criteria. This list is not exhaustive.
29. External projects that could be considered by a publicly contestable fund have not been explored as the range of possibilities is so large. However, an idea of the type of projects it might attract can be found in the description of the successful bids to the Wellington Community Trust Climate Action Fund.¹
30. There is considerable potential at Wellington Regional Stadium and Wellington Water Limited. These fall within options 1 and 2 for criteria changes. If the LCAF was used to fund the installation of large solar photovoltaic (PV) systems, special arrangements could be made for Greater Wellington to receive some or all of the renewable energy certificates generated to credit against its carbon footprint and/or the proceeds of electricity sales from it. This would ensure Greater Wellington benefits in proportion to its investment, even if ownership of such an asset is transferred.
31. Allowing applications for projects that reduce the emissions of Wellington Regional Stadium (Option 1) has the most advantages compared to disadvantages of the five options listed. Decisions on the most appropriate financial arrangements for LCAF-funded projects at WRS, whether grant or loan, would be made on a case-by-case basis with advice from Finance.
32. There are a range of projects worthy of further consideration within Greater Wellington, including Metlink transport projects and possible permanent pest animal removal from a Wainuiomata fenced sanctuary. These fall within existing criteria.

Ngā hua ahumoni Financial implications

33. A provision for borrowing to support the LCAF would be made in the 2022-23 draft annual plan.
34. This would be no more than 70 percent of the present value of the Council's 255,660 free allocation NZUs across all LCAF projects, past and present, determined by the current NZU spot price at the time.
35. If the spot price of NZUs dropped, causing the current allocation of LCAF funding to exceed the 70 percent threshold, there would be a hiatus in considering further allocations of funds from the LCAF.

¹ <https://wct.org.nz/climate-action-fund-recipients-project-overviews/>

Te huritao ki te huringa o te āhuarangi
Consideration of climate change

36. The matters requiring decision in this report were considered in accordance with the process set out in Greater Wellington’s climate change guidance.

Ngā tikanga whakataua
Decision-making process

37. The matters requiring decision in this report were considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga
Significance

38. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of these matters, taking into account Council's *Significance and Engagement Policy* and Greater Wellington’s *Decision-making Guidelines*. Officers consider that these matters are of low significance because it is a change to the administration of the LCAF.

Te whakatūtakitaki
Engagement

39. Given the low significance of the matters for decision, officers considered that no related public engagement was required.

Ngā tūāoma e whai ake nei
Next steps

40. A provision for borrowing to support the LCAF will be included in the 2022-23 draft annual plan.
41. Projects will be considered for funding according to the LCAF criteria and processes (**Attachment 1**).

Ngā āpitihanga
Attachments

Number	Title
1	Low Carbon Acceleration Fund description
2	LCAF review potential projects

**Ngā kaiwaitohu
Signatories**

Writers	Jake Roos – Climate Change Advisor Lisa Early – Team Leader, Climate Change
Approvers	Jake Gilmer – Manager, Strategic and Corporate Planning Luke Troy – General Manager, Strategy

<p>He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council's roles</i></p> <p>This matter is consistent with Council's climate change commitments.</p>
<p><i>Implications for Māori</i></p> <p>Tangata Whenua engagement will be carried out prior to confirmation of funding decisions being made by Council.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>This review relates to one of the four overarching strategic priorities of the 2021-31 Long Term Plan, responding to the climate emergency, and to one of the actions in the Corporate Carbon Neutrality Action Plan.</p>
<p><i>Internal consultation</i></p> <p>Staff from Wellington Water, Centreport, Wellington Regional Stadium, Metlink, Pest Management, Land Management, Travel Choice, Strategy and Finance were consulted as part of the LCAF review.</p>
<p><i>Risks and impacts - legal / health and safety etc.</i></p> <p>There are no risk and impacts arising from this paper.</p>

Attachment 1 to Report 22.66

Greater Wellington Low Carbon Acceleration Fund description for staff (2020-21)

24 April 2020

Purpose

The LCA Fund is intended to help our organisation achieve the goal of becoming 'carbon neutral' by 2030 through funding projects that will reduce our corporate carbon footprint. ('Carbon' means all greenhouse gases, expressed in units of tonnes of CO₂ equivalent)

Who can apply?

GW activity managers. CCOs and Centreport, while they form part of the corporate carbon footprint, cannot apply at this time.

What areas of council activities are eligible?

Improvements to bus and rail assets, buildings, vehicle fleet, and GW-managed land. Novel activities such as renewable energy investments will also be considered.

How much funding is available?

Approximately \$2M will be allocated from the LCA Fund to projects in 2020-21. There will be up to four rounds of applications considered during 2020-21, although later rounds may not proceed if funding is fully allocated in earlier rounds. Subject to the outcome of the Long Term Plan process, the LCA Fund may resume in 2021-22.

The LCA Fund is divided into these categories:

- 40% **Land sector** – changing land use and environmental restoration (e.g. tree planting)
- 40% **Energy and other** – electric vehicles, renewable energy, energy efficiency or anything that is not land sector.
- 20% **Project development and feasibility** – for developing a project from a concept to a fully costed proposal/business case.

Note the percentages are a guide – councillors are able assign the funding differently if they wish.

There are no maximum or minimum values set for applications, but decision makers may ask you to revise the amount requested depending on what other bids are received.

What are the assessment criteria?

Projects must represent additional activity and carbon savings that would not have occurred (or occurred as soon) without the LCA funding.

Projects favoured if they:

- Have a high value of carbon saved per \$ of LCA funding relative to other projects
- Have additional benefits – e.g. biodiversity, flood protection, public amenity

Attachment 1 to Report 22.66

Greater Wellington Low Carbon Acceleration Fund description for staff (2020-21)

- Are of strategic significance to achieving carbon reduction goals – e.g. may lead to further reductions by increasing capability in the organisation or testing a promising approach
- Have a high likelihood of being successfully delivered

Note the fund focus is on projects that will reduce GW's carbon footprint. Carbon savings that would accrue to others from the project will be counted as an additional benefit but not included in the calculation of carbon saved per \$ invested.

Process

The Climate Change Team in Strategy and Policy will provide advice and technical support to applicants.

The Climate Emergency Response Programme Board will impartially vet the applications that are presented to councillors, and may choose to exclude some. Reasons for exclusion:

- Proposal not sufficiently detailed
- Carbon saving per \$ of funding requested too low (\$ per tonne CO₂e too high)
- Project would have happened anyway
- Risk vs. reward ratio too poor

The Board may also seek additional information or propose changes to applicants.

Funding allocations are discussed by the Climate Change Committee and then recommended to full Council for approval.

Round one deadline 5pm 31 May 2020

Applications must include the following information in this order:

1. The team of council applying and the point of contact
2. A full explanation of the proposed project: what/when/where/who/how
3. An explanation of if or when the project could proceed if it didn't receive LCA funding.
4. An estimate of total carbon savings compared to 'business as usual'. These may be broad estimates for project development/feasibility applications. Distinguish between carbon savings that would accrue to GW (come off our corporate carbon footprint) and those that would accrue elsewhere.
5. The costs of the implementing the proposal compared to 'business as usual'
 - a. identify amount sought from LCA Fund and any other sources of funding
 - b. provide some breakdown of costs e.g. project management vs. direct costs
6. Describe and if possible quantify any co-benefits
7. Identify any risks to the project successfully delivering the estimated carbon saving. Rate their probability and impact respectively (low/medium/high)
8. Attach carbon calculations (these should be peer reviewed before submitting)

Attachment 2 To Report 22.66

Attachment 2 - Low Carbon Acceleration Fund (LCAF) review: potential projects and initial assessment

Project ideas were gathered at the time of writing the review; the list is not exhaustive.

Key

- Green – Within existing LCAF criteria
- Gold – Within option 1 for expanded criteria
- Blue – Within option 2 for expanded criteria
- Orange – Within option 4 for expanded criteria
- Grey – Within option 5 for expanded criteria

Team	Project	Description	Reduces organisation footprint	Reduces regional footprint	Scale	Outcome certainty	Admin, accountability burden of grant/loan	Reduction can be reversed	Financial return	Meets existing LCAF eligibility criteria (excluding 5/tonne assessment)	Cost per tonne CO2e abated estimate
Metlink	Diesel bus conversion to EV	Convert double-decker buses to electric drive, put into service replacing diesels	Y	Y	Small - Medium	High	Low	N	N	Y	High
Metlink	Public transport on demand expansion	Provide public transport on demand with electric vans where car dependence is high and bus services are lightly used. This may eventually lead to diesel bus services in these areas being reduced.	Maybe	Y	Small - Medium	Medium	Low	N	N	Y - if diesel bus services scaled back as a result	Very high
Metlink	Solar PV systems at Park and Rides	Install solar panels in banks over car parks, supply power generated either directly to the rail system, to EV charging or export to the national grid	Y	Y	Small - Medium	High	Low	N	Y	Y	Medium
Catchment management	Increased pest control to promote forest growth - fenced sanctuary	Permanent pest eradication in Wainuomata fenced sanctuary protecting up to 3,313 ha native bush	Maybe	Uncertain	Medium	Medium	Low	Y	N	Y	Unknown
Wellington Regional Stadium	Solar on roof, solar over concourse	Install a large solar PV system at the stadium. Electricity will be used on site and exported.	Y	Y	Medium - Large	High	Medium	N	Y	N - need to expand fund to include Trust	Medium
Wellington Regional Stadium	Convert heating and hot water from gas to electric heat pump(s)	Heat pumps use less energy and produce fewer emissions per unit of energy used than gas heating.	Y	Y	Small	Medium	Medium	N	Y	N - need to expand fund to include Trust	Medium
Wellington Regional Stadium	Convert cooking appliances from gas to electric	Electricity has lower emissions per unit of energy used than gas. However, they use roughly the same amount of energy as each other.	Y	Y	Small	Medium	Medium	N	Unknown	N - need to expand fund to include Trust	High
Wellington Regional Stadium	Energy efficiency (other)	Improve efficiency of lighting fixtures, heating and lighting controls. Investigation required to determine scope of savings possible	Y	Y	Small	Medium	Medium	N	Y	N - need to expand fund to include Trust	Low
Wellington Water Limited	Pump station optimisation	Improve the control of water pumping (speed modulation) to maximise energy efficiency	Y - for now	Y	Medium	High	Medium	N	Y	N - need to expand fund to CCO	Low - Medium
Wellington Water Limited	Solar on reservoirs	Floating installation with export to grid - uses otherwise unusable space	Y - if special contract made	Y	Large	High	Medium	N	Y	N - need to expand fund to CCO	Medium - High
Wellington Water Limited	Hydro power for pressure reduction	Replace pressure reduction valves with pumps, which act as turbines to produce electricity	Y - for now	Y	Small	Medium	Medium	N	Y	N - need to expand fund to CCO	Medium
Wellington Regional Stadium	EV charging	Install public EV charging at the Stadium car park	N	Y	Medium	Medium	Medium	N	Y	N - need to expand fund to Trust, does not reduce org emissions	Unknown
Pest management team	Increased pest control to promote forest growth - GW land	Target browsing pest animals in regional parks to increase growth and carbon storage of existing forests	Maybe	Uncertain	Any	Medium	Low	Y	N	N - uncertain reduction will be permanent	Unknown
Pest management team	Increased pest control to promote forest growth - other land	Increase control of browsing pest animals on private land to increase growth and carbon storage in existing forests	N	Uncertain	Any	Low	Low	Y	N	N - uncertain reduction will be permanent, does not reduce org emissions	Unknown
Land management team	Increased advice to farmers	Employ specialists to advise farmers on how to reduce the emissions of their farms	N	Uncertain	Any	Low	Low	Y	N	N - uncertain advice will have an impact, does not reduce org emissions	Unknown
Travel choice team	Increased promotion of mode shift	Increase the scale of activities of this team - more promotion, more advice	N	Y	Any	Low	Low	N	N	N - does not reduce org emissions	Unknown
Unknown	Contestable community fund	Provide funding to community groups or businesses to reduce emissions	N	Maybe	Any	Low	High	Depends	N	N - does not reduce org emissions	Unknown

Council
24 February 2022
Report 22.31



For Decision

2022 TRIENNIAL ELECTIONS

Te take mō te pūrongo

Purpose

1. To advise Council on the:
 - a Timetable for the 2022 triennial local authority elections
 - b Order to arrange candidates' names on the voting documents.

He tūtohu

Recommendations

That Council:

- 1 **Notes** the timetable for the 2022 triennial local authority elections (Attachment 1).
- 2 **Agrees** that the names of the Wellington Regional Council candidates at the 2022 triennial local authority elections and any subsequent by-elections are to be arranged on the voting paper in *either*:
 - a Alphabetical order of surname;
 - b Pseudo-random order; *or*
 - c Random order.

Te tāhū kōrero

Background

2. The 2022 triennial local authority elections will be held on Saturday 8 October 2022. The Single Transferable Vote electoral system applies to the Council's elections¹, and related planning has commenced.

¹ Council initially resolved for the Single Transferable Vote electoral system to apply from the Council's 2013 elections. This resolution continues in effect until such time as the Council resolves a different electoral system. Council considered this matter, for the 2022 elections, on 20 August 2020 – Report 20.258 refers.

Timetable

3. The timetable for these elections is set out in the Local Electoral Act 2001 (the Act) and the Local Electoral Regulations 2001 (the Regulations). A copy of this timetable is included as **Attachment 1** to this report. The dates of principal interest to the public are bolded.

Te tātaritanga Analysis

Method of voting

4. Territorial authorities carry out much of the work for the regional council elections. Legally, these territorial authorities (rather than the regional council) decide on the method of voting. The method used for regional council voting within the district of a territorial authority must be the same method used by that territorial authority for the triennial elections.
5. Currently, the Regulations allow for postal and/or booth voting methods to be used. We have been advised that all territorial authorities in the Wellington Region will be utilising postal voting for the 2022 triennial elections.

Order of names on voting papers

6. Clause 31(1) of the Regulations allows the Council to decide whether candidates' names are arranged on the voting documents in alphabetical order of surname, pseudo-random order, or random order. In the absence of a Council resolution approving another arrangement, the candidates' names must be arranged in alphabetical order of surname.
7. For each of the 2013, 2016, and 2019 triennial local authority elections the Council resolved that random order be applied to candidate names². We propose that the Council's decision will also apply to any subsequent by-elections during the 2022–25 triennium.

Options for candidates' names on voting papers

Option 1 - Alphabetical order of surname

8. This option is self-explanatory. The ballot paper will look the same for every voter.

Advantages and disadvantages

9. Names are listed alphabetically for Parliamentary elections, so voters may be familiar with this and find it easier to locate the names of the candidates for whom they wish to vote.
10. This option means that some candidates will always be listed at the top of the voting paper, with other candidates always listed at the bottom.

² Resolved by the Council on 20 March 2013 (Report 13.48), 24 February 2016 (Report 16.17), and 26 February 2019 (19.11) respectively.

Option 2 – Pseudo-random order

11. The candidates' names are placed in a hat (or similar receptacle), mixed together, and then drawn out of the receptacle; with the candidates' names then placed on the voting documents in the order in which they are drawn. The resulting ballot paper looks the same for every voter.
12. Clause 31(4) of the Regulations provides that if a local authority chooses to use pseudo-random order, the Electoral Officer must state (in the public notice required to be given) the date, time, and place at which the order of the candidates' names will be arranged and that any person is entitled to attend.

Advantages and disadvantages

13. This option provides an equal opportunity for candidates to either be listed at the top of every voting paper or to be listed at the bottom of every voting paper.
14. Some voters may have difficulty finding the candidates they wish to vote for. However, the Council has used random order for the 2013, 2016, and 2019 triennial local authority elections, so voters are likely to be familiar with names listed in random order.
15. The printing costs are the same as for Option 1, with some slight additional compliance costs (e.g. see paragraph 12 above).

Option 3 – Random order

16. The names of the candidates are shown in a different order on each and every voting paper, utilising software that permits these names to be laser printed in a different order on each document.

Advantages and disadvantages

17. This option means that candidates have an equal opportunity to be at the top of the voting paper, and that all candidates will be listed at the top of some voting papers and at the bottom of other voting papers.
18. As with Option 2, some voters may have difficulty finding the candidates they wish to vote for. That said, voters are likely to be familiar with names listed in random order as the Council has used random order for the last three local authority elections.
19. The related printing costs are not significantly more than the other two options, as this is a familiar system using modern technology.

Options chosen by territorial authorities within the Wellington Region

20. Currently, no territorial authority within the Wellington Region has determined the order of its candidates' names. Most councils make this decision over the coming month.
21. Below is a table setting out the option chosen by territorial authorities and district health boards³ in the Wellington Region for the 2019 elections.

³ Previously, district health board elections ran concurrently with local authority elections. This won't occur in 2022 as the Government has announced the merger of district health boards into a national health service.

Territorial authority or district health board	Order of candidates' names	Voting method
Carterton District Council	Random	FPP
Hutt City Council	Random	FPP
Kāpiti Coast District Council	Random	STV
Masterton District Council	Alphabetical	FPP
Porirua City Council	Random	STV
South Wairarapa District Council	Pseudo-random	FPP
Upper Hutt City Council	Random	FPP
Wellington City Council	Random	STV
Capital and Coast District Health Board	Random	STV
Hutt Valley District Health Board	Random	STV
Wairarapa District Health Board	Random	STV

Ngā hua ahumoni

Financial implications

22. There are no financial implications arising from the choice of any of these options, as these costs are provided for in the 2021–31 Long Term Plan.

Ngā tikanga whakatau

Decision-making process

23. The matters requiring decision in this report were considered by officers against the requirements of the Regulations and Part 6 of the Local Government Act 2002.

Te hiranga

Significance

24. Officers considered the significance of these matters, taking into account Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*. Due to the administrative nature of these decisions, officers consider that these matters are of low significance.

Te whakatūtakitaki

Engagement

25. Due to their administrative nature and low significance, no engagement on these matters was undertaken.

Ngā tūāoma e whai ake nei

Next steps

26. Council's decision on the order of candidates' names on the voting document will be communicated to electoral officers in the territorial authorities and to the public in the necessary public notices.

**Ngā āpitihanga
Attachment**

Number	Title
1	2022 election timetable

**Ngā kaiwaitohu
Signatories**

Writer	Will Ogier – Principal Advisor Democratic Services
Approvers	Francis Ryan – Manager Democratic Services Luke Troy – General Manager Strategy

He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council's roles or with Committee's terms of reference</i> The Council has authority to determine the arrangement of candidates' names on the voting paper under the Local Electoral Regulations 2001.
<i>Implications for Māori</i> There are no known issues or implications for Māori.
<i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i> These decisions contribute to the effective management of the 2022 local authority elections.
<i>Internal consultation</i> Greater Wellington's Electoral Officer, Warwick Lampp, was consulted in the preparation of this report.
<i>Risks and impacts - legal / health and safety etc.</i> These decisions ensure the Council's 2022 local authority elections meets the requirements of the Act and the Regulations.

2022 Election Timetable**Attachment 1 to Report 22.31**

Date(s)	Requirement	Legislation
2 March to 30 April	Ratepayer roll enrolment confirmation forms issued	Clause 16 LER
2 March to 6 July	Preparation of ratepayer roll	Clause 10 LER
May	National ratepayer roll qualifications and procedures campaign	Section 39 LEA
1 July	Electoral Commission enrolment update campaign commences	
No later than 15 July	Public notice of election, calling for nominations, advising when roll opens for inspection	Sections 42, 52, and 53 LEA
15 July	Nominations open / roll opens for inspection	Section 42 LEA
12 August	Nominations close at 12 noon/ roll closes	Sections 5, 42, and 55 LEA Clause 21 LER
17 August (indicative)	Public notice of election day and candidates' names	Section 65 LEA
No later than 12 September	Electoral Officer certifies final electoral roll	Section 51 LEA Clause 22 LER
16 September	Electoral Commission letter sent to unpublished roll electors	
16 September to 8 October	Delivery of voting documents	Clause 51 LER
	Progressive roll scrutiny	Section 83 LEA
	Special voting period	Section 5 LEA Clause 35 LER
	Early processing	Section 80 LEA
No later than 12 noon Friday 7 October	Appointment of scrutineers	Section 68 LEA
8 October	Election Day	Section 10 LEA
	Voting closes 12 noon, and counting commences	Section 84 LEA
	Preliminary results available as soon as practicable after close of voting	Section 85 LEA Clause 80A LER
8 to 13 October	Official count	Section 84 LEA
13 to 19 October, or as soon as practicable	Declaration or public notice of results	Section 86 LEA
By mid-December (depends on public notice date of results)	Elected members' return of elections expenses and donations form	Section 112A LEA

LEA = Local Electoral Act 2001, and LER = Local Electoral Regulations 2001.

Council
24 February 2022
Report 22.1



For Information

**WELLINGTON CIVIL DEFENCE EMERGENCY MANAGEMENT GROUP MEETING,
3 DECEMBER 2021**

Te take mō te pūrongo

Purpose

1. To inform the Council of the proceedings of the Wellington Civil Defence Emergency Management (CDEM) Group Meeting 3 December 2021.

Te tāhū kōrero/Te horopaki

Context

2. The business considered by the Joint Committee in a videoconference is set out in the following paragraphs.

Written Reports

Wellington CDEM Group Meeting Dates for 2022

3. The Joint Committee approved the following 2022 meeting schedule for the Wellington CDEM Group:
 - a 22 March 2022, at 9am
 - b 31 May 2022, at 1pm
 - c 20 September 2022, at 9am
 - d 6 December 2022, at 9am.

Wellington Region Emergency Management Office Q1 Quarterly report – 30 September 2021

4. The Joint Committee discussed the first quarterly report of the 2021/22 financial year, which outlines the work programme to date against the strategic outcomes identified in the CDEM Group Plan 2019-2024.
5. The report provided information on achievements and progress against the activities set out in the Annual Business Plan 2021/22 work programme.
6. Of the 91 KPIs identified in the WREMO Annual Business Plan, 69 were in progress and one completed as at 30 September 2021, with 21 KPIs not started.

Civil Defence Emergency Management Group Appointments – December 2021

7. The Joint Committee agreed to a number of changes to statutory appointments for Local Controllers as required under the Civil Defence Emergency Management Act 2002 (The Act).

Oral Reports

District Health Board COVID-19 Update

8. Jeremy Holmes, Regional Manager, Wellington Regional Emergency Management Office (WREMO), provided the Joint Committee with an overview of the current COVID-19 situation.
9. Fionnagh Dougan, Chief Executive, Capital and Coast District Health Board and Hutt Valley District Health Board (2DHB) provided the Joint Committee with an update on the health response to COVID-19, including the testing and case management model and the vaccination delivery model.

Two bucket marketing campaign

10. Jeremy Holmes, Regional Manager, WREMO, spoke to the report and tabled a presentation on solutions to manage household human waste after a large-scale earthquake.
11. The campaign is a collaboration between WREMO, Wellington Water Limited and Regional Public Health. It will run during February and March 2022 and is intended to raise public awareness of the issue and provide solutions. Emergency bucket toilets are available for purchase as part of this campaign.

Trifecta legislation review

12. Jeremy Holmes, Regional Manager, WREMO, tabled a presentation and updated the Joint Committee on the Trifecta Legislation Review.
13. The intent is to repeal and replace the current Act and the National Civil Defence Emergency Management Plan and Guide 2015. The Bill is intended to be introduced to Parliament in June 2022 and come into effect from December 2022.
14. The National Emergency Management Agency's current plan is to go out to the Civil Defence Emergency Management Groups December/January, with public consultation open between March and April 2022 (exact dates to be advised).

Māori Integration Strategy

15. Jeremy Holmes, Regional Manager, WREMO, tabled a presentation introduced the report and Hinemoa Katene, Senior Māori Integration Advisor, WREMO.
16. Mr Holmes provided some background information to the Māori Integration Strategy. He advised that the Ministerial Review (*Delivering Better Responses to Natural Disasters and Other Emergencies*) recommended recognition of the capability that iwi/Māori bring to emergency management.
17. The Coordinating Executive Group (CEG) engaged three iwi representatives, based on the three catchments in the Wellington Region (West – Kāpiti Coast and Porirua, Central – Wellington, Lower Hutt and Upper Hutt, and East – Wairarapa). WREMO has also engaged one full time advisor on a 12 month contract.
18. Ms Katene spoke on the five workstreams and the goal to integrate Te Ao Māori into emergency management in the Wellington Region.
 - Kaupapa Kotahi – to support the development of cultural competence and confidence of WREMO staff

- Kaupapa e Rua – to develop guidance for iwi/Māori representation or liaison in the Region’s six Emergency Operations Centres (EOC) and its Emergency Coordination Centre (ECC)
- Kaupapa e Toru – to develop a framework to incorporate local iwi/Māori into regional emergency management governance
- Kaupapa e Wha – Work with local iwi/Māori to improve their level of preparedness for emergencies
- Kaupapa e Rima – to work with marae to identify the roles and responsibilities that they may perform in response to and recovery from emergencies to provide better outcomes for whanau, hapū, and communities.

Ngā kaiwaitohu

Signatories

Writer	Ainslie Ryder – ECC Readiness and Deployment Lead
Approvers	Donna Hickey – General Manager, People and Customer Cr Daran Ponter – Council’s representative, Civil Defence Emergency Management Group Joint Committee

He whakarāpopoto i ngā huritaonga Summary of considerations
<i>Fit with Council's roles or with Committee's terms of reference</i> It is appropriate for Council, as a member of the Joint Committee, to be kept informed of the business of that committee.
<i>Implications for Māori</i> Refer to paragraph 15 - 18 on the Māori integration Strategy.
<i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i> The report contains updates relevant to emergency management, business continuity and the Long Term Plan strategic outcome of adapting and responding to the impacts of COVID-19.
<i>Internal consultation</i> There was no internal consultation required.
<i>Risks and impacts - legal / health and safety etc.</i> There are no known risks or impacts.

Council
24 February 2022
Report 22.60



For Decision

GREATER WELLINGTON'S QUARTER TWO SUMMARY REPORT 2021/22

Te take mō te pūrongo

Purpose

1. To advise the Council on the performance of Greater Wellington Regional Council (Greater Wellington) to 31 December 2021 (the end of the second quarter two of the 2021/22 financial year) against the targets outlined in the 2021-31 Long Term Plan (LTP).

He tūtohu

Recommendation

That Council **accepts** Greater Wellington's performance report for the six months to 31 December 2021 (Greater Wellington's Quarter Two Summary Report as at 31 December 2021) (Attachment 1)).

Te tāhū kōrero

Background

2. Quarterly reporting is an internal monitoring tool for tracking progress against Greater Wellington's work programme for 2021/22. This reporting reflects on what is going well, and indicates what issues and risks need to be managed to enable us to achieve what we have committed to in Year One of the 2021-31 Long Term Plan.
3. A performance summary is presented to Council after the end of the related period (e.g. each quarter), and the draft Annual Report is presented as a full-year wrap up in lieu of a fourth quarter report.

Te tātaritanga

Analysis

4. Greater Wellington's Quarter Two Summary Report as at 31 December 2021 (**Attachment 1**) provides an update on performance during the period 1 October – 31 December (the second quarter of 2021/22 financial year, the first year of the 2021-31 LTP). It includes:
 - a a high-level summary of Greater Wellington's quarter two highlights and challenges;
 - b several examples on how we have contributed to our overarching LTP Strategic Priorities since 1 October 2021;

- c an update on health, safety, and wellbeing for quarter two;
- d a year-to-date financial summary; and
- e the status of our 51 LTP non-financial performance measures, the Chief Executive's Key Performance Indicators, and our Major Projects, as at 31 December 2021.

Ngā hua ahumoni
Financial implications

- 5. There are no financial implications arising from this report. Greater Wellington's financial performance for the second quarter of the 2021/22 financial year is detailed in **Attachment 1**.

Ngā tikanga whakatauf
Decision-making process

- 6. The matter requiring decision in this report was considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga
Significance

- 7. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matter for decision, taking into account Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*.
- 8. Officers recommend that this matter is of low significance as it will not impact on the Wellington Region or a particular community interest; is consistent with Greater Wellington's policies and strategies; and does not impact on Greater Wellington's capability or capacity.

Te whakatūtakitaki
Engagement

- 9. Due to the low significance of the matter for decision, no engagement was considered necessary.

Ngā tūāoma e whai ake nei
Next steps

- 10. No further action is required.

Ngā āpitihanga
Attachment

Number	Title
1	Greater Wellington's Quarter Two Summary Report as at 31 December 2021

**Ngā kaiwaitohu
Signatories**

Writers	Rebecca Gillett – Advisor, Planning and Reporting Zofia Miliszewska – Team Leader, Corporate Planning and Reporting
Approvers	Jake Gilmer – Manager, Strategic and Corporate Planning Luke Troy – General Manager, Strategy Nigel Corry – Chief Executive

<p>He whakarāpopoto i ngā huritaonga Summary of considerations</p>
<p><i>Fit with Council's roles or with Committee's terms of reference</i></p> <p>One of Council's key governance functions is to review the effectiveness of Greater Wellington's performance. It is also important for public transparency that this review occurs at a Council meeting.</p>
<p><i>Implications for Māori</i></p> <p>The relevant impacts for Māori are addressed in Attachment 1.</p>
<p><i>Contribution to Annual Plan / Long Term Plan / Other key strategies and policies</i></p> <p>Attachment 1 reports on how Greater Wellington is achieving against the expected results for Year One of its 2021-31 Long Term Plan (the 2021/22 Annual Plan).</p>
<p><i>Internal consultation</i></p> <p>All Business Groups and the Executive Leadership Team were consulted in the preparation of Attachment 1. The report was also reviewed by the Chief Executive.</p>
<p><i>Risks and impacts - legal / health and safety etc.</i></p> <p>The nature and management of relevant risks is covered in Attachment 1.</p>

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021



Summary of 2021/22 Performance
Quarter Two: 1 October – 31 December 2021

Attachment 1 to Report 22.60

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Contents

Quarter Two: Challenges and Opportunities	3
Quarterly Performance – How are we tracking?	4
Overview of LTP Activity Group Performance.....	6
Snapshot of our LTP Strategic Priorities.....	7
Health Safety and Wellbeing	8
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Appendix One – Chief Executive Performance Indicators	14
Appendix Two – Long Term Plan Non-Financial Measures.....	20
Appendix Three – Major Projects.....	31

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Quarter Two: Challenges and Achievements

We are facing the challenge of COVID-19 by improving the strength and resilience of the region.

The COVID-19 pandemic continues to impact our region, and has an effect on the delivery and timeline of our work, particularly the capital programme. We are responding to this challenge by prioritising our work programme to ensure we deliver our key services to the region during this time including safe and reliable public transport.

Beyond key services, we are responding by improving the resilience of our region. Greater Wellington worked to support vaccination rates through the Delta 'BUSter' initiative, and by providing free public transport to and from vaccination centres. The free public transport initiative has been promoted in multiple languages including Te Reo, and every Pasifika language, and received positive feedback from communities for this.

We are also utilising Crown funding to enhance our region's environmental resilience through the Climate Resilience Programme. This quarter an estimated 50,000 native plants were procured for the Te Awa Kairangi / Hutt River with half procured from the Rimutaka prison. The Programme also used sustainable procurement funding to hire two new full time Māori employees and support other Māori employees to gain further qualifications.

We have achieved several key milestones this quarter:

- The Snapper on Rail trial commenced on the Johnsonville line, providing users with a contactless method for paying for the service that is easier and more convenient to use.
- The Metlink Accessibility Charter was launched, marking an important step towards providing more accessible public transport services.
- Metlink worked with Operators and Unions to continue to strengthen the terms and conditions of frontline staff, most notably increasing the hourly base rate for Tranzurban drivers to \$27/hour from 1 December 2021. The base rates for drivers from Mana and Uzabus will be similarly increased and backdated to 1 December 2021.
- All agreements were reached on the Proposed Natural Resources Plan without the need for Environment Court Hearing.
- The Waiohine River Plan hearing was completed, and the Hearing Panel recommended to adopt the Plan.
- The Greater Wellington Masterton Office officially opened in December 2021.
- The final funding agreements between Greater Wellington and each of our mana whenua partners were signed and we have started identifying projects to work with mana whenua using Kaupapa funding.

Progress is being made on how we work to improve outcomes for mana whenua and Māori.

With the funding agreements signed, projects are already looking at how to work collaboratively with mana whenua. We have an ongoing partnership with Wairarapa Iwi to share knowledge and look at how Mātauranga Māori can play a role in delivering land management services. As well, Ngāti Toa was contracted to provide input and expertise on Mātauranga Māori for the development of the Kāpiti Whaitua Implementation Programme, and similar contracts are being established with Te Ātiawa ki Whakarongotai and Ngā Hapū o Ōtaki.

The pandemic has meant that many of our mana whenua partners are under-resourced due to taking care of whānau in this time, which can be challenging as projects look to work with mana whenua. We are doing what we can to support mana whenua resourcing, including the Wellington Regional Leadership Committee endorsing high-level proposals to increase Iwi capacity and capability.

Despite challenges, the majority (64 percent) of our non-financial measures are on track.

We are facing several challenges to our delivering our work programme this year, including rising costs and limited availability of resources due to COVID-19, and the need to respond to a number of changes from Central Government. While these challenges are being felt across the organisation, we continue to develop strategies to address and resolve them, and are currently on track to achieve the majority of our non-financial measures by the end of the year.

Attachment 1 to Report 22.60

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

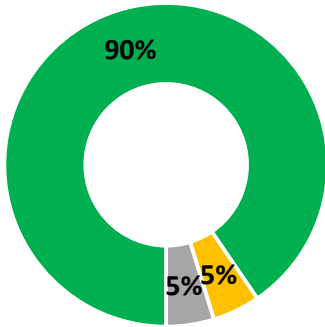
Quarterly Performance – How are we tracking?

We are tracking well against our non-financial performance measures in the 2021-31 Long Term Plan (LTP).

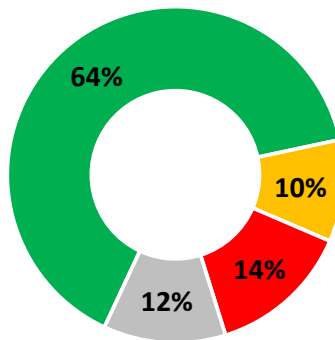
A snapshot of our performance this quarter: ¹

Our Work

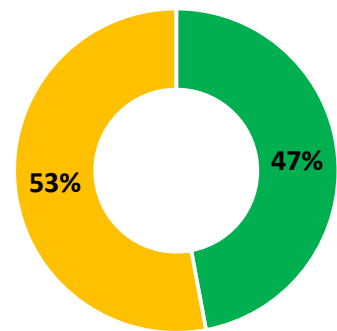
Chief Executive KPIs
as at 31 December 2021



LTP Non-Financial Measures
as at 31 December 2021



Major Projects
as at 31 January 2022



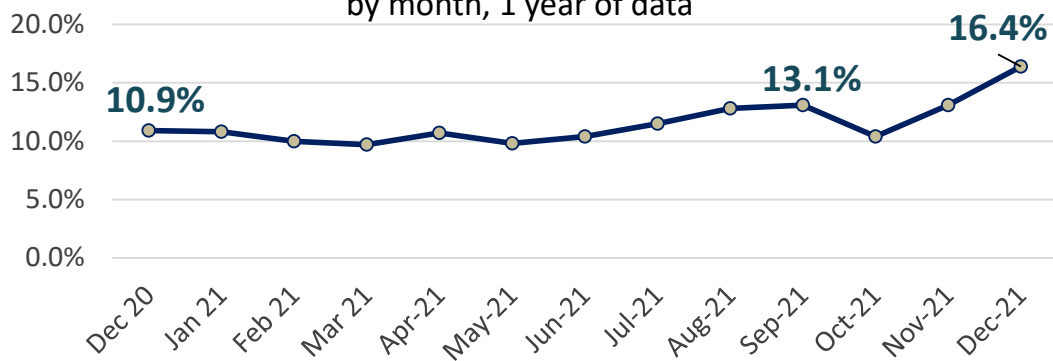
■	On Track / Achieved
■	Delayed / At Risk
■	Off Track / Not Achieved
■	No activity planned

For more detailed information see: **Appendix One** for the Chief Executive KPIs; **Appendix Two** for the LTP Non-Financial Performance Measures; and **Appendix Three** for the Major Projects.

Our People

GW Turnover (permanent employees only)

by month, 1 year of data



Female Employee Count

54% (↓0.6%)

Male Employee Count

46% (↑0.6%)

Total Headcount

631 (↑19)

Full Time Employees

615 (↑20)

¹ The Chief Executive KPIs are only effective as of 15 September 2021 when Nigel Corry started as Chief Executive.

Attachment 1 to Report 22.60

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Our Finances

Operating Revenue under budget: (\$15.1m)

actual \$209.0, budget \$224.1

Total Revenue was (\$15.1m) less than budget. Mainly due to the impacts of COVID-19 (Delta variant) restrictions on Public Transport fare revenue. Delta has also caused resourcing delays in shovel ready project grants in Flood Protection with (\$4.1m) less revenue.

Operating Expenditure under budget: \$14.9

actual \$222.9, budget \$237.8m

Total Expenditure was \$14.9m lower than budget mainly due to OPEX project delays in Public Transport, Catchment, Let's Get Wellington Moving and the Low Carbon Acceleration Fund which has had a slower than anticipated drawdown.

Operating deficit has increased: (\$0.2m)

actual \$13.9, budget \$13.7

These offsetting revenue and expense variances have combined to produce an operational deficit of \$13.9m, \$0.2m larger than budget.

Capital Expenditure under budget: \$31.2m

actual \$19.6m, budget \$50.8m

The capital underspend is due to delays in multiple projects across multiple business units;

- \$11.6m in Flood Protection from delays in Shovel ready projects exacerbated by COVID-19 and delays with RiverLink construction/design/property purchases;
- \$1.8m in Public Transport mainly due to delays in projects caused by COVID-19;
- \$2.7m in Environment mainly due to delays in Queen Elizabeth Park improvements projects; and
- \$10.5m in Water from timing difference with Greater Wellington and Wellington Water Limited's consenting and forecasting. The full year variance in Water is forecast to reduce to \$3m below budget.

Attachment 1 to Report 22.60

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Overview of LTP Activity Group Performance

On Track / Achieved
Delayed / At Risk
Off Track / Not Achieved
No activity planned

Key highlights and challenges of each LTP Activity Group:

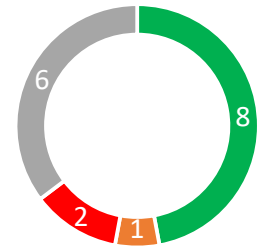


Ko te haumaru taiao me te waipuke | Environment and Flood Protection

The Environment and Flood Protection Activity Group faced challenges this quarter including increased vacancies and market restraints causing delays. The Group however have continued to make progress and deliver key services:

- ✓ All agreements were reached on the Proposed Natural Resources Plan without the need for Environment Court Hearing.
- ✓ Consultants were contracted and three workshops were held with staff to inform the development of the Recloning Papatūānuku Restoration Plan.

LTP Non-Financial Measures as at 31 December 2021

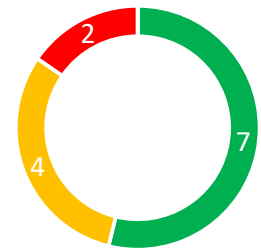


Ngā waka tūmatanui | Metlink Public Transport

Metlink Public Transport continues to respond to COVID-19 and manage driver shortages. Despite these challenges the Group achieved several projects that were a long time in the making:

- ✓ Snapper on Rail Trial on the Johnsonville Line.
- ✓ Increase of bus driver base rate to at least \$27/hour.
- ✓ Strengthened stability across the Metlink network, whilst still navigating COVID-19
- ✓ Opening of double-tracking between Trentham and Upper Hutt, as well as new stations and platforms at Trentham and Wallaceville
- ✓ Funding and provision of the vaccination bus for the Hutt communities, as well as provision of free public transport for anyone travelling to and from their vaccination.

LTP Non-Financial Measures as at 31 December 2021

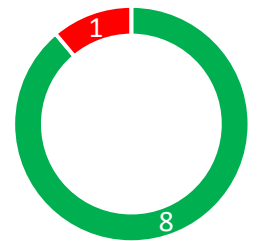


Ko te mahere ā-rohe me ngā rangapū | Regional Strategy and Partnerships

The Regional Strategy and Partnerships Activity Group worked to improve outcomes for mana whenua and Māori this quarter:

- ✓ The three remaining Tūāpapa funding agreements were signed, and work has started to identify projects for Kaupapa funding agreements.
- ✓ The Wellington Regional Leadership Committee held its second meeting and endorsed high-level proposals to improve iwi capability and capacity.

LTP Non-Financial Measures as at 31 December 2021

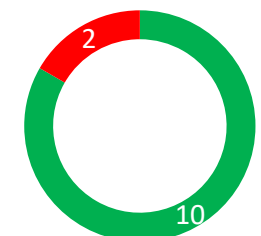


Ngā puna wai | Water Supply

Wellington Water continues to deliver core water services while operating with increased pressure due to COVID-19 and staff resourcing:

- ✓ In the process of implementing recommendations from a review of wastewater treater operator to address incidents related to waste treatment operations.
- ✓ Continued to develop strategies on how to manage leaks across the network.

LTP Non-Financial Measures as at 31 December 2021



Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Snapshot of our LTP Strategic Priorities

This quarter our strategic priorities are being incorporated into many projects and programmes across the organisation. **Of those projects and programmes, we have chosen three examples that exemplified our strategic priorities this quarter, and provided a snapshot of the work that they have been doing.**

Wellington Region Flood Vulnerability Assessment

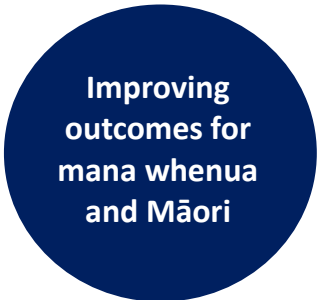


Background: Flooding is the region's greatest hazard. Approximately 60,000 properties are at risk of fluvial flooding. Climate change increases the risk of the severity, frequency and unpredictability of this flooding.

Project: We are developing the Regional Flood Hazard Model, which will take climate data into account when determining flood risk.

Outcomes: The model will lead to better planning for and management of future flooding. This project is a great example of partnering across the business to improve our region. Our Flood Protection team is working collaboratively with our Strategy and Environmental Policy teams to develop the model.

One Billion Trees Programme – Partnership with Wairarapa Iwi



Background: One Billion Trees programme is part of the Provincial Growth Fund which aims to create sustainable jobs, improve Māori capacity and capability and work towards meeting New Zealand's climate targets.

Project: Through this programme, we are developing relationships with Wairarapa Iwi to exchange knowledge, co-deliver land management services and develop succession plans for Iwi.

Outcomes: Connections are being made between staff and mana whenua at a hapū level. Key learnings from the programme can be applied to the implementation of our Māori Outcomes Framework – Te Whāriki – by assisting both Greater Wellington and Iwi to better understand what Iwi would like to help Greater Wellington co-deliver, and the capacity and capabilities involved.

Responding to Essential Freshwater Package



Background: The Essential Freshwater Package was released by the Ministry of the Environment to restore the health of our waterways and the Freshwater Response Team was created by Greater Wellington to respond to these new regulations.

Project: This quarter the Team have been working on changing internal practices, as well as communicating complex rules/regulations to our community in an accessible manner (infographics, workshops etc.).

Outcomes: This is another example of partnering across the business to improve our region. Collaboration across our Environment and Catchment Management Groups has led to more consistent and clear advice to community on how to comply with new regulations.

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

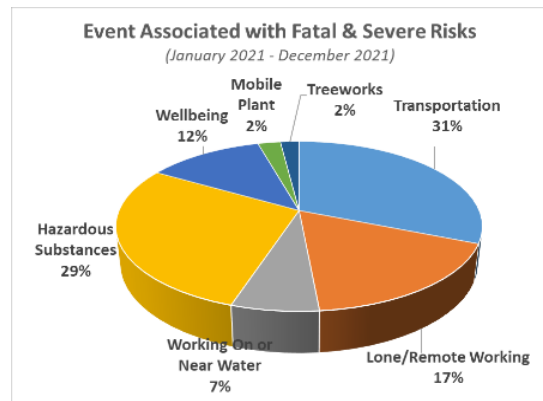
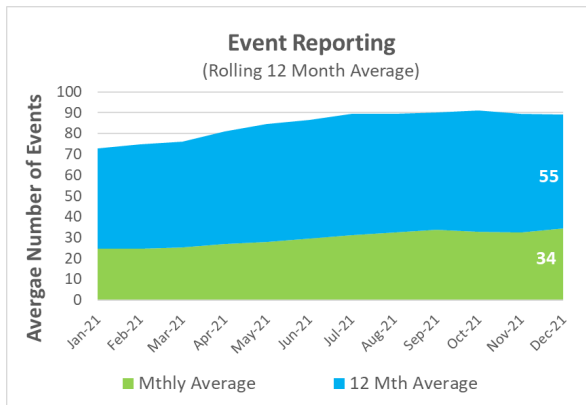
Health Safety and Wellbeing

Everyone, every day – home, safe and well

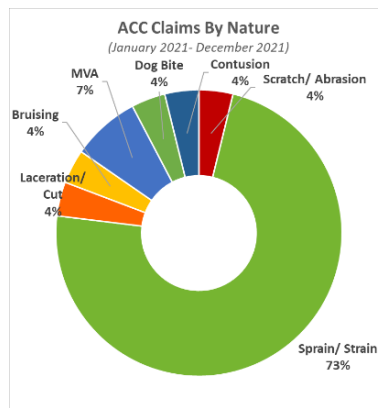
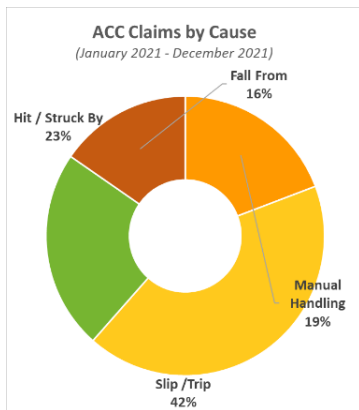
Prevalent and emerging trends in quarter two

- Increase in verbally aggressive and antisocial behaviour
- Physical assaults (x2)
- Vehicle near miss event and collisions resulting in minor damage

Event reporting

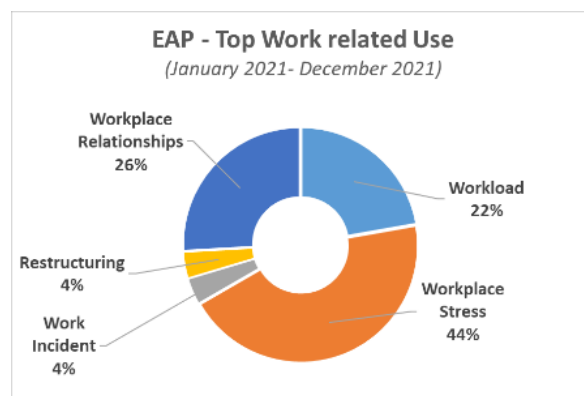
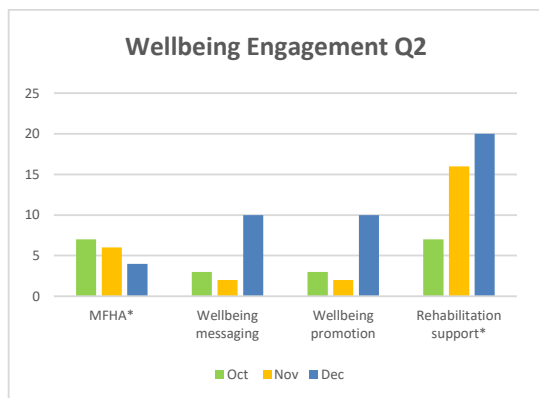


ACC work injury claims



Work injury claims in last 12 months	
Total claims	26
Lost time claims	8
Total days lost	609
Includes two long term recovery from concussion injuries caused by motor vehicle accidents	

Wellbeing



Attachment 1 to Report 22.60

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

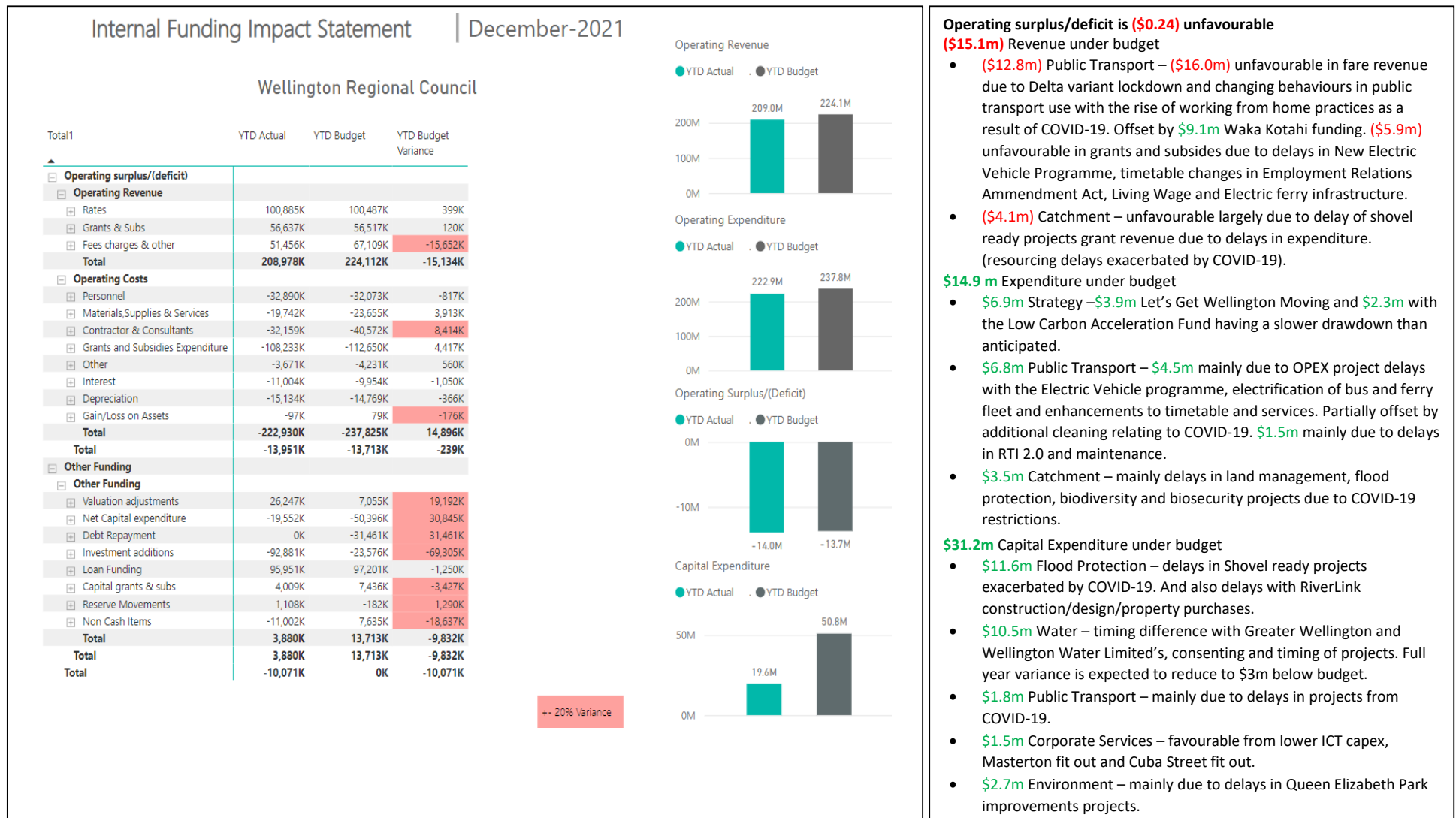
Financial Position

For the six months ended 31 December 2021

The following five pages provide an update on the financial position of Greater Wellington Regional Council:

1. **Funding Impact Statement** – Financial summary, Actual vs Budget year-to-date, for the six months ended 31 December 2021
2. **Revenue** – Revenue variance, Actual vs Budget year-to-date, for the six months ended 31 December 2021.
3. **Operational Expenditure** – Expense variance, Actual vs Budget year-to-date, for the six months 31 December 2021.
4. **Capital Expenditure** – Capital expenditure, Actual vs Budget year-to-date, for the six months ended 31 December 2021.

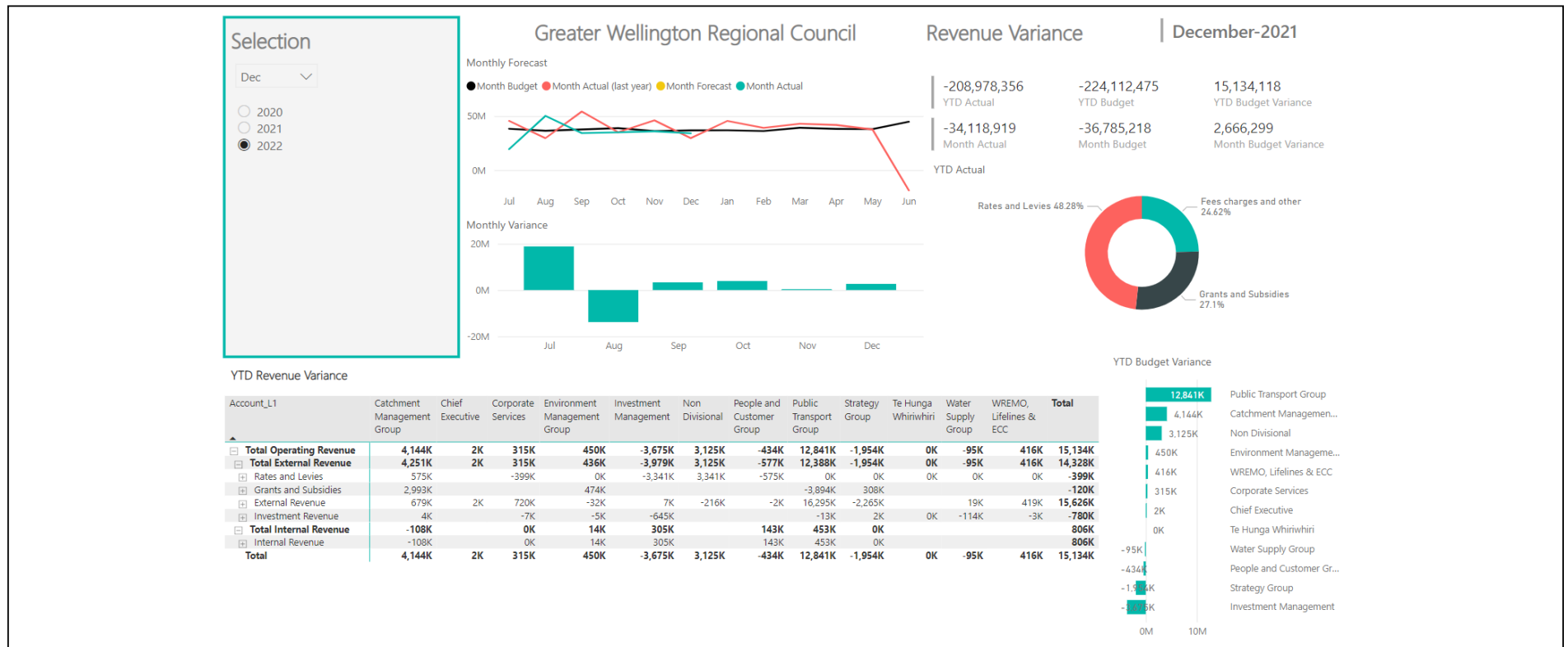
**Greater Wellington's Quarterly Summary of Performance as at 31 December 2021
Funding Impact Statement, for the six months ended 31 December 2021**



Key points:

- COVID-19 (Delta variant) restrictions have impacted revenue received, operational expenditure and capital expenditure across multiple business units since August 2021.
- The August 2021 COVID-19 lockdown and changing behaviours in public transport use with the rise of working from home practices has caused a reduction in Public Transport Farebox revenue of \$8m. Discussions which were with Waka Kotahi are now with Central Government to fund more than the standard 51% of this short fall.

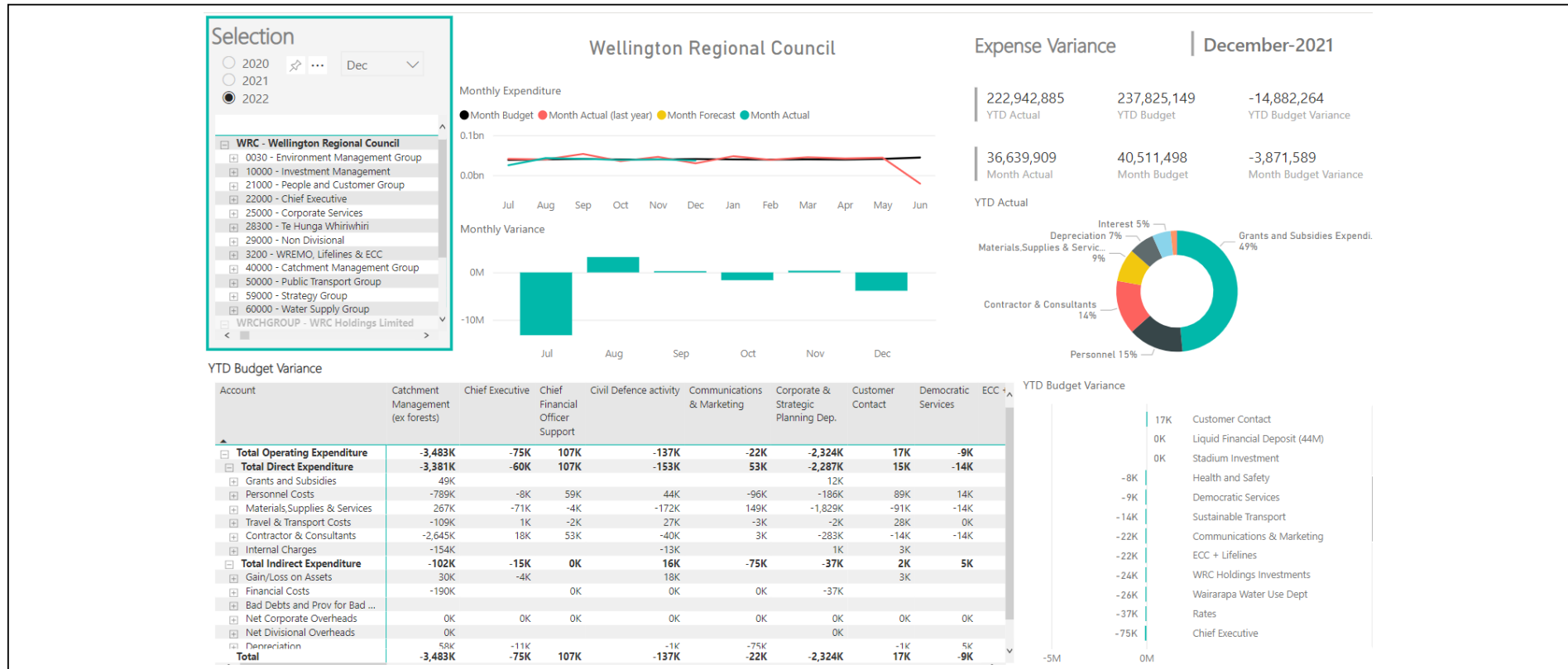
Greater Wellington's Quarterly Summary of Performance as at 31 December 2021
Revenue, for the six months ended in 31 December 2021



- (\$12.8m) Public Transport - Bus and Rail Fare Revenue (\$16.0m)** unfavourable due to the COVID-19 (Delta variant) lockdown and the rise of working from home practices stemming from the lockdowns. Budget set at pre-COVID patronage levels and with the change to new normal being flexible working.
- Grants and Subsidies Revenue \$3.2m** of the above unfavourable variance has been offset by;
 - \$8.5m of additional Waka Kotahi Bus and Rail Farebox funding**
 - (\$5.9m) of delayed Waka Kotahi funding from delays in New Electric Vehicle Programme, timetable changes and timing variance in Employment Relations Amendment Act, Living Wage and Electric ferry infrastructure and other minor programmes which have an offset in costs.
- (\$4.1m) Catchment:** Flood Protection – (\$2.7m) unfavourable – timing of shovel ready project grants (delayed due to COVID-19 and procurement of contractors). \$0.1m favourable in Land Management from phasing of Wellington Regional Erosion Control Initiative (WRECI) grant revenue and unbudgeted government funding of Riparian's one billion trees programme(1BT). Biodiversity (\$0.6m) unfavourable – timing of Wairarapa Moa Jobs for Nature project grant revenue. Biosecurity (\$0.5m) unfavourable – Predator Free Wellington operational costs (COVID-19).

** Grants and Subsidies Revenue is calculated on an average of 51% of the net of Farebox Revenue and Cost. With less Farebox Revenue more cost is claimed (less to offset), hence more Grants and Subsidies revenue.

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021
Operational Expenditure, for the six months ended in 31 December 2021

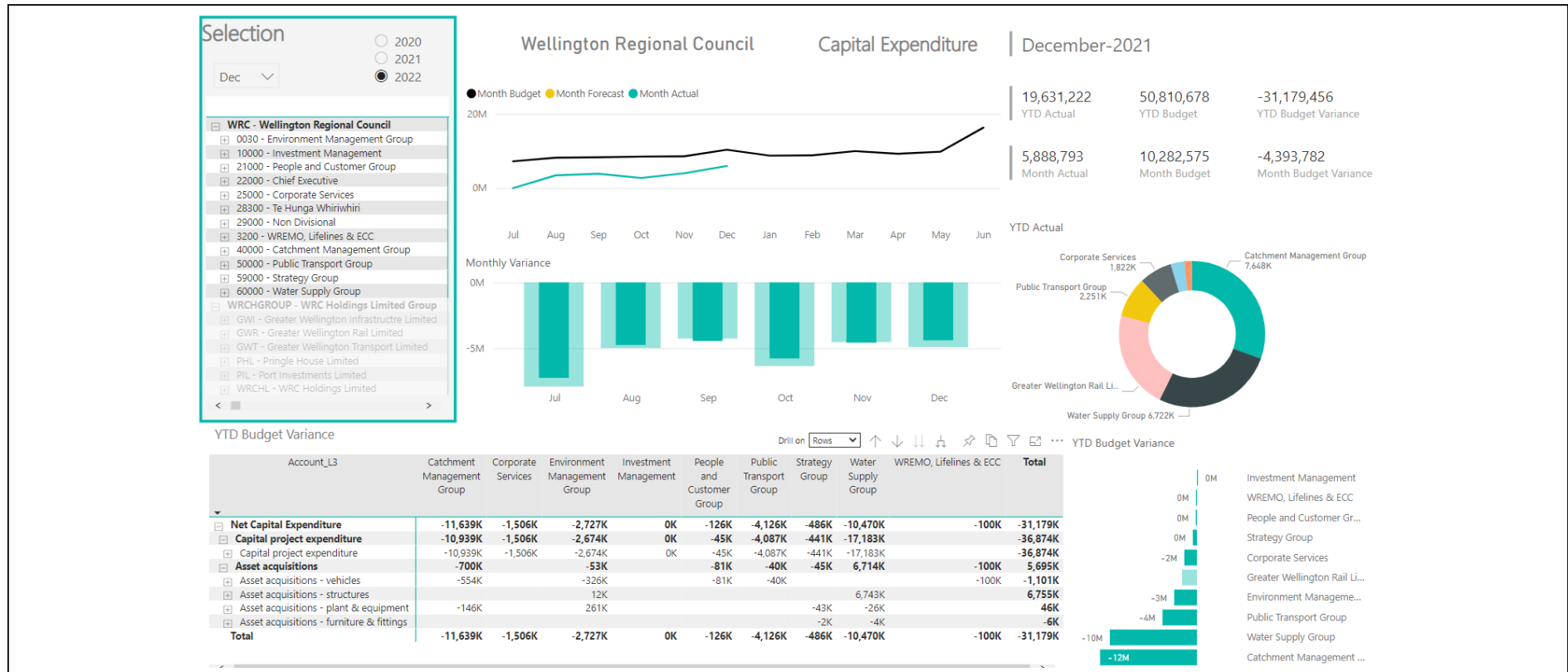


\$6.9m Strategy – \$4.4m favourable mainly due to delay in Let's Get Wellington Moving, \$2.3m – Low Carbon Acceleration Fund is not drawn down.

\$6.8m Public Transport – \$4.5m favourable mainly due to OPEX project delays with the Electric Vehicle programme, electrification of bus and ferry fleet and enhancements to timetable and services, \$1.5m favourable due to delays in RTI 2.0 and maintenance.

\$3.5m Catchment – favourable mainly due to delays in projects: \$1.1m in Hill Country Erosion programme (WRECI), \$0.7m in Pinehaven – timing of Q3 invoice, \$0.2m Predator Free Wellington, \$0.8m in the Wairarapa Moana MFE project.

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021 Capital Expenditure, for the six months ended 31 December 2021



\$11.6m Flood Protection – from delays in multiple projects: **\$4.1m** in Shovel Ready and MFE projects from resourcing delays, **\$4.0m** in RiverLink due to delay of design/construction, **\$1.4m** in Kapiti FMP implementation due to Otaki FMP review not yet completed.

\$10.5m Water – **\$6.1m** relates to phasing differences between the GW budget and WWL's. **\$3.1m** from consenting delays with the Silverstream Pipebridge Seismic Upgrade and **\$1.3m** relates to timing of minor projects and delays associated with Covid. Full year variance is expected to reduce to \$3m below budget.

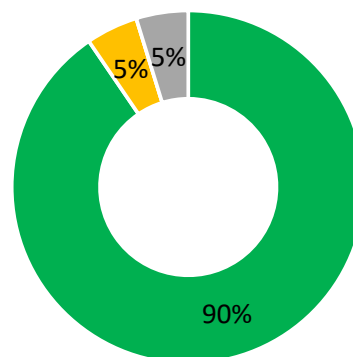
\$1.8m PT – mainly due to Covid lockdown levels delaying the progress of the following projects: **\$1.0m** is on Rail Infrastructure, **\$0.6m** is on Matangi Heavy Maintenance, and **\$0.2m** is in Wairarapa Carriage Replacements.

\$1.5m Corporate Services – favourable on ICT capex, Masterton fit out and Cuba Street fit out.

\$2.7m Environment – **\$2.4m** mainly due to delays in Queen Elizabeth Park improvements including the Heritage Precinct and coastal retreat projects and **\$0.2m** from Science Collaborative Modelling project expenditure which was below budget due to timing.

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Appendix One – Chief Executive Performance Indicators

Status of Chief Executive KPIs, as at 31 December 2021²

Section 1: Overarching Strategic Priorities					
<i>The KPIs in this section measure against the overarching priorities in Council's Strategic Framework</i>					
Priority	Outcome	Measure	Target	Q2 Result	Commentary (for Q2)
Improving outcomes for mana whenua and Māori.	Mana whenua are included in decision-making, and Te Ao Māori and mātauranga Māori perspectives are reflected in the work Greater Wellington delivers so we can achieve the best outcomes for Māori across all aspects of our region.	Continuous implementation of the Māori Outcomes Framework and the new mana whenua funding model.	Funding agreements are signed and an agreed work programme is in place with each mana whenua partner.	On Track	Tūāpapa Funding - Agreements with six partners signed
			Opportunities for contracting/delegating environmental functions direct to mana whenua are identified and actioned.	On Track	Kaupapa Funding – meetings with two of the six partners to determine joint priorities and work programme. Building background to enable the successful devolvement of functions to mana whenua through the Kaupapa process
		Implementation of Te Matarau a Māui.	Governance structure is in place for Te Matarau a Māui.	On Track	Te Matarau a Māui Board established, and Trust Deed signed.
		Te Tiriti o Waitangi Audit developed to assess Council's performance against improved outcomes for mana whenua and Māori.	Framework for undertaking a Te Tiriti o Waitangi Audit in the next financial year is developed.	On Track	Appointment of Senior Advisor, Māori Economy to drive the implementation of the Strategy with Council and the Board.

² These Chief Executive KPIs are only effective as of 15 September 2021 when Nigel Corry started as Chief Executive.

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Section 1: Overarching Strategic Priorities					
<i>The KPIs in this section measure against the overarching priorities in Council's Strategic Framework</i>					
Priority	Outcome	Measure	Target	Q2 Result	Commentary (for Q2)
Responding to the climate emergency.	Demonstrating leadership in regional climate action and advocacy, and ensuring that Greater Wellington's operations are carbon neutral by 2030.	Greater Wellington is in a position to support the development of regional strategies for climate action through the Wellington Regional Growth Framework.	Undertake a regional climate change risk assessment and lead coordination of this (if supported by the Regional Climate Change Forum).	On Track	A regional Climate Change Impacts Assessment is being conducted under the Wellington Regional Growth Framework, led by Wellington City Council, with support from the region's territorial authorities and Greater Wellington.
		Ensuring that Greater Wellington's operations are carbon neutral by 2030 and climate positive by 2035.	Net emissions from Greater Wellington's operations are trending downwards (from the 2018/19 baseline).	On Track	This is an annual measure that is compared to the 2017/18 base year. In the first quarter of 201/22, staff and Toitu Envirocare completed the audit of Greater Wellington's corporate carbon emissions for the 2019/20 financial year. For that year, Greater Wellington's emissions decreased by one percent from the baseline, a decrease of 604 tonnes of CO2 equivalent emissions.
Adapting and responding to the impacts of COVID-19.	Greater Wellington has a leadership role in the regional response to the economic consequences of COVID-19.	The Regional Economic Development Plan is developed collaboratively with our partners and approved by the Wellington Regional Leadership Joint Committee.	Achieved.	On Track	Activity was focused around the Regional Growth Framework and Regional Economic Development Forum. Chair of Te Matarau a Maui appointed as an observer to the Forum allowing for greater alignment of the strategy of Te Matarau a Maui into this forum.
		Mitigation strategies are employed to ensure bus services across the network can continue to be delivered to the contracted standards despite labour shortages or patronage reductions.	Achieved.	On Track	Significant effort to support driver wages as a key component of staff retention with operators. Proactive and increasingly trusting relationship with all operators, and unions, specially to manage network disruption. Key interventions included: <ul style="list-style-type: none"> • Timetable refinements to better balance driver resources. As a result, have seen reduced cancellations. • From 1 December 2021, Metlink increased Tranzurban and Mana driver wages to \$27 an hour as part of our commitment to retain and attract drivers across the region. • Increased off and inter peak services on a number of routes to create longer shifts,

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Section 1: Overarching Strategic Priorities					
<i>The KPIs in this section measure against the overarching priorities in Council's Strategic Framework</i>					
Priority	Outcome	Measure	Target	Q2 Result	Commentary (for Q2)
					<p>which is a more attractive option for drivers than split and short shifts.</p> <ul style="list-style-type: none"> Metlink provided free sanitary and incontinence products for bus and rail staff on a three-month trial at popular overlays.
Aligning with Government direction.	Greater Wellington is actively responding to the Government's reform programme.	Alignment with National Policy Statement – Freshwater Management (NPS-FM) through the development and implementation of the Whaitua Implementation Plans (WIPs).	<p>Council endorses the Te Whanganui-a-Tara WIP, and establishes the Kāpiti and Wairarapa Coast Whaitua Committees.</p> <p>A WIP implementation programme is established for each of the Ruamahanga and Te Awarua o Porirua WIPs and demonstrable progress is made against an agreed delivery programme.</p>	On Track	<p>Council received Te Whanganui-a-Tara WIP and Te Mahere Wai. Council agreed to initial response paper 9/12/21.</p> <p>Letter from Chair to Kāpiti iwi chairs drafted.</p> <p>WIP implementation programme up and running. Process for converting Ruamāhanga recommendations into deliverables complete.</p> <p>Natural Resources Plan / Regional Policy Statement change programme under way and mostly on track.</p>
		<p>Input to the Government's reform programme, including:</p> <ul style="list-style-type: none"> 3 Waters reform Resource management reform Future of local government review. 	Regular reporting (at least quarterly) to Council on the progress of the Government's reforms and Greater Wellington's response.	On Track	<p>3 Waters reform: Council was presented information four times in 2021 (29 July, 9 September, 16 November, 9 December) and frequently updated on DIA's progress, Council workshop to gather feedback to inform submissions on proposed reform and Economic regulator submission.</p> <p>Resource Management Reform: Periodic verbal updates via Environment Committee; not a major focus of workshoping at this stage.</p> <p>Local Government reform: Council was presented a series of workshops to understand the overarching drivers and direction of reforms. Council submissions completed to the Natural & Built Environments Bill, and the National Emissions Reduction Plan. Ongoing 'blue skies' workshops with councillors underway on reform options and positions.</p>

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Section 2: Organisational Priorities					
<i>The KPIs in this section measure against the organisational priorities in Council's Organisational Strategy</i>					
Priority	Outcome	Measure	Target	Q2 Result	Commentary (for Q2)
People and Leadership Develop a culturally capable, high performing, engaged, and resilient workforce.	<i>Leadership:</i> Leaders help their people deliver high-quality work in a supportive and creative Greater Wellington culture.	Demonstrated leadership as the CE internally and externally, including: <ul style="list-style-type: none"> P4P practice survey observed behaviours and visibility within the organisation sector leadership regional leadership responsiveness and accessibility to Councillors. 	As assessed by the Chair and the Chief Executive Employment Review Committee.	On Track	New P4P forms developed to align with organisation priorities. ELT membership reviewed and charter developed, increasing focus on collective executive leadership across GW system. Actively involved in Regional Sector CEO Group, Wellington Region CE group, with leadership responsibilities in both.
	<i>Change Management:</i> Change processes are clear on the outcomes sought, well-managed, with changes to business processes, culture, and behaviour change being considered as well as any necessary structural change.	Implementation of Fit for the Future change management process delivers integrated catchment-based planning and delivery of Greater Wellington services.	As assessed by the Chair and the Chief Executive Employment Review Committee.	On Track	Fit for the Future has progressed according to the plan and with change team. New GM Environment, who will lead the programme now, has been recruited and started. Clear workstream around integration with corporate areas of the organisation.
	<i>Health, Safety and Wellbeing:</i> Our people return home each day in the same or better state than they started the day.	Chief Executive-driven Health, Safety and Wellbeing (HSW) culture. Greater Wellington and Chief Executive HSW due diligence obligations demonstrated.	Chief Executive undertakes, documents and reports to Council on at least two visits to field locations to review HSW processes and risks.	On Track	Visits are being arranged for the first quarter of the year.
	<i>Diversity and Inclusion:</i> Our workforce represents the communities we work for, resulting in greater diversity of thought and improved outcomes for Greater Wellington.	Greater Wellington increasingly reflects the region's gender, bicultural, ethnic, and cultural diversity make-up.	Council improves its assessment level (from 'between Starter and Rookie') following the Diversity and Inclusion Stocktake Review.	On Track	The number of women in the organisation increased between during the quarter from 45.4% (30 September) to 46% (31 December). The implementation of Ngātahi means we can now plan to collect and start to report on ethnicity data. The Diversity and Inclusion Stocktake Review will occur in March 2022.
	<i>Staff Engagement:</i> Our people feel valued and engaged in Greater Wellington's purpose, resulting in a productive organisation.	Gallup overall employee engagement index.	Maintain or improve the 2020/21 result of 4.11. ³	On Track	The pulse survey has been undertaken and indicates we are maintaining staff satisfaction. Action planning continues. The annual survey is planned for May 2022.

³ Note that we are unlikely to 'improve' on the 2020/21 result given the organisational changes on the horizon for 2021/22 such as implementing Fit for the Future.

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Section 2: Organisational Priorities					
<i>The KPIs in this section measure against the organisational priorities in Council's Organisational Strategy</i>					
Priority	Outcome	Measure	Target	Q2 Result	Commentary (for Q2)
	<i>Cultural Capability:</i> Mana whenua report that staff have confidence and competence to partner effectively. Staff report that they have completed the training requirements and are able to demonstrate change behaviours in the workplace.	Cultural capability programme in place that is inclusive of: <ul style="list-style-type: none"> Te Reo Māori Mātauranga Māori Te Tiriti o Waitangi Sites of significance (led by mana whenua). Survey of staff attending training completed annually.	Achievement of training targets. 25% of staff have participated in cultural training. ⁴	On Track	Training offered this year has focused on delivery of the following courses each with the ability to take up to 20 people per intake: Three courses of Pakiaka (introductory reo Maori). <ul style="list-style-type: none"> 1 course in Matauranga Maori completed 1 Treaty Course completed 1 Sites of Significance – as part of the Treaty Training course The appointment of the Senior Advisor, Capability now gives us the ability to focus on the design, delivery and evaluation of the courses and ensure that these are delivered in a way that maximises opportunities for staff to complete. We will also be better able to provide an accurate dashboard for more accurate recording purposes.
Organisational Excellence Create systems and processes to support continuous business improvement.	Greater Wellington fulfils its obligations fully to deliver value for money to its communities.	Proportion of 2021-31 Long Term Plan non-financial performance measures that are achieved.	80% of all LTP Non-financial performance measures are achieved by 30 June 2022.	At Risk	We are 'on track' to achieve 72% of the LTP non-financial performance measures that can be measured at this point in the year, (this represents 28 out of 39 performance measures that were able to be measured). 13% (five performance measures) are currently 'at risk' of not being achieved at year-end. Of the 6 measures that are currently reported as 'Off Track' and unlikely to be achieved at year-end, 3 are directly associated to the impacts of COVID-19 restrictions. There are 12 (out of the full set of 51 performance measures) that can only be measure annually, at the end of the financial year. ⁵

⁴ In line with our Te Reo Policy, cultural training is completed by staff in at least one of the following areas: Te Reo Māori; Mātauranga Māori; Te Tiriti o Waitangi; and Sites of significance (led by mana whenua)

⁵ Note: Since preparing the CE KPI results we have further reviewed the 31 December results for the LTP Non-Financial Performance Measures and have amended the results which now show a slightly higher proportion of 'on track' measures and a smaller number of measures marked as 'not measured' in the quarter.

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Section 2: Organisational Priorities					
<i>The KPIs in this section measure against the organisational priorities in Council's Organisational Strategy</i>					
Priority	Outcome	Measure	Target	Q2 Result	Commentary (for Q2)
		Percentage of major projects with an overall "green" rating (on track in terms of schedule, budget, managing risks and issues, health and safety, stakeholders, and resources).	70% of all PMO 'Major' Projects.	On Track	76% (13) Major Projects have a "Green" status, and 24% (4) have an "Amber" Status. ⁶ Highlights include: <ul style="list-style-type: none"> • GW Masterton Building • Realignment of RiverLink relationships • Optimus progress • PNRP appeal resolution Risk around/emerging <ul style="list-style-type: none"> • Multiuser ferry terminal • Supply chain/COVID impacts
		Alignment to Greater Wellington's Digital Strategy – enabling digital business transformation through: Directing enough resources toward promoting adoption of new digital tools and improvement of Greater Wellington's IT Security posture.	Cyber Security posture has improved from previous reported state. Cyber Security initiatives reported to FRAC are funded, supported, and enacted within the agreed timeframes.	On Track	Security Operations Analyst hired (September 2021). Security Governance and Response review completed; Major Incident Response processes completed; IT Cyber Security and General Use Policy updated and rolled out to entire organisation. Security Dashboard implemented for ELT. Geographic diverse cloud solution for offsite backups for critical systems (in fact all systems are included). Decommission of aged 'fleet' and out of security-support devices.
Reputation Enhance the reputation and relevance of Greater Wellington in the region.	Our communities trust Greater Wellington to focus on the right issues and deliver value for money.	Reputation Index – Community perception of trust, leadership, fairness, and social responsibility as measured by the Colmar Brunton brand tracker.	Improvement in the overall reputation score: <ul style="list-style-type: none"> • GWRC: from 90 to 91 • Metlink: from 90 to 91. 	Not measured	Not measured until April 2022.
		Regular one-on-one meetings with CEs of selected territorial authorities and iwi in the region to build trust and explore partnership opportunities. ⁷	Regular meetings are scheduled, held and reported on.	On Track	Meetings held with all CEs in the region, multiple times in some cases. Variety of face-to-face hui with Wairarapa and Kāpiti iwi in particular.

⁶ Note: This result is 'as at 31 December 2021', which differs from the result reported within the main part of this Q2 Summary Report (which reflect the results as at 31 January 2022).

⁷ Greater Wellington's relationship with key local government partners is an important component of overall reputation and influences the perception of Greater Wellington's leadership role in the region

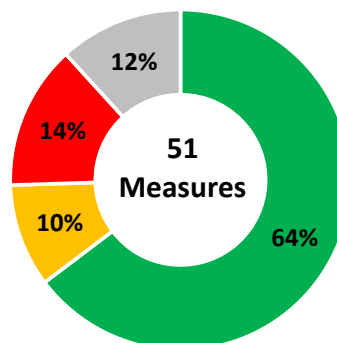
Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Appendix Two – Long Term Plan Non-Financial Measures

Status of LTP Non-Financial Measures, as at 31 December 2021

LTP Non-Financial Measures

as at 31 December 2021



Environment and Flood Protection

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
Thriving Environment	Protect and restore our freshwater quality and blue belt	Delivery of the Ruamāhanga, Te Awarua-o-Porirua and Te Whanganui-a-Tara Whaitua implementation programmes	Water quality in the region is maintained or improved	Macroinvertebrate Community Index (MCI) score is maintained or improved ⁸	New Measure	Achieved	Not Measured	-	Measured annually and reported in June.
			Support landowners through incentive funding and advice to develop and implement Farm Environment Plan actions, which reduce nutrient and sediment discharges	Percentage of Greater Wellington incentive funding ⁹ used to advance Whaitua Implementation Programme priorities or to enhance or protect threatened biodiversity, through completion of high	New Measure	75%	Not Measured	-	Measured annually in June

⁸ Aquatic macroinvertebrates (i.e. animals without backbones that can be seen with the naked eye, e.g. shrimps, worms, crayfish, aquatic snails, mussels, aquatic stage of some insect larvae, such as dragonfly larvae, mayflies, caddisflies, etc.) are commonly used biological indicators for freshwater ecosystem health throughout New Zealand and around the world. Macroinvertebrates are widely used because they are abundant, easy to collect and identify, have relatively long life-cycles, and are sensitive to multiple pressures (e.g. pollution, habitat removal, floods, and droughts). This makes macroinvertebrate communities useful to identify where we need to improve our management of these pressures and to show when these pressures are sufficiently addressed.

⁹ Greater Wellington incentive funding used to complete high impact actions will be assessed in respect to the three substantive incentive funds aimed at assisting landowners to undertake beneficial freshwater or biodiversity action on their land – these three programmes being: the Riparian Programme, the Farm Planning services fund, and the Wetland Programme.

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
			or enhance biodiversity	impact actions on private land					
			Deliver treatment programme on identified erosion-prone land	Erosion-prone hill country treated	755 ha	800 ha	Not Measured	-	Measured annually in June
			Provide environmental information to the community and our stakeholders	Timely information from core environmental monitoring programmes is made available to the public via the Greater Wellington website	New Measure	Achieved	Off Track	4 of 12 2020/21 annual reports published on website (33%)	Delays in reporting are as a result of deprioritising this work due to COVID-19 lockdowns as well as further improvements to processes being required
			Monitor compliance with resource consents	Where rates of compliance for high risk activities are less than 80 percent, develop and implement a strategy to improve the rate of compliance	> 80%	Improved	On Track	Water Takes: Improved	In response to rates of compliance being less than 80% for Water Takes, a strategy is in the process of being developed/implemented to improve the rate of compliance. The Water Takes result has improved from 60% in June 2021 to 68% in December 2021. Rates of compliance for earthworks, and municipal wastewater and water supplies are assessed in Q4.
			Customer satisfaction for the resource consent service	Level of overall satisfaction with consent processing services ¹⁰	4.33	> 4	On Track	4.5	Only 10 surveys have been completed for the reported year to date. Consent applicants will provide a further opportunity to place feedback as it appears as though some consent applicants may not have been provided the survey link to complete.

¹⁰ On a scale of 1 (very dissatisfied) to 5 (very satisfied)

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
Thriving Environment (continued)	Protect and restore indigenous biodiversity and ecosystem health Implementing nature based solutions to climate change	Re-forestation and protection and restoration of wetlands across our regional parks network	Protect and care for the environment, landscape and heritage	Grazed land retired and restored to its native state	New Measure	100 ha	Achieved	101 ha	This programme of work for 2021/22 was completed in quarter one.
				Indigenous species planted	63,000	55,000	Off Track	46,500	Planting in quarter two was impacted by COVID-19 lockdowns, and the work programme has now stopped for the remainder of 2021/22 as planting only takes place in winter. This target will not be achieved at year-end.
		Improve recreational enjoyment and environmental value of regional parks	Customer satisfaction and improved public access	Percentage of regional park visitors that are satisfied with their experience	98%	95%	Not Measured	-	Measured annually in June.
				Annual number of visits to a regional park	1.76 million	Increase from baseline	On Track	On Track	Parks is working with flood protection to review the methodology of our counters in parks and river trails, with final numbers expected to be available in Q4. Despite the most recent COVID-19 lockdown visitor numbers are on track, as seen anecdotally in the raw data that is collected. The raw data is not reported this quarter as the reporting methodology will change.
		Implement the Regional Pest Management Plan (RPMP) and support Predator Free Wellington Initiatives	Provide pest species control services across the region	Provide pest animal and plant management as per RPMP Operational Plans ¹¹	Not Achieved	Achieved	On Track	On Track	There are some minor delays in the delivery of the Regional Possum Predator Control programme but all other aspects of the RPMP have been delivered to the plan.
				Provide pest species control services as agreed under Predator Free Wellington	New Measure	Achieved	On Track	On Track	Services are delivered to the Predator Free Wellington Trust Ltd as required and to a high standard.
			Implement the objectives of the Greater Wellington Biodiversity Strategy	Biodiversity Strategy objectives are being actively progressed by Greater Wellington	New Measure	Achieved	Not Measured	-	Measured annually in June.

¹¹ Operational Plans can be accessed via Greater Wellington's website: <http://www.gw.govt.nz/biosecurity/>

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
Resilient future	Communities safeguarded from major flooding	RiverLink flood control works completed	Progress towards completion of the RiverLink flood control works	Implement RiverLink in accordance with the approved Preliminary Design	New Measure	Statutory approvals issued	On Track	On Track	
			Provide the standard of flood protection agreed with communities	Major flood protection and control works are maintained, repaired, and renewed to the key standards defined in relevant planning documents ¹²	Yes	Yes	On Track	On Track	
			Provide information and understanding of flood risk in the community	Percentage of identified vulnerable floodplains with a flood management plan in place	30%	35%	Not Measured	-	Measured annually in June.
		Manage the safety of marine activities in the region's waters	Percentage of identified risks within the Harbour Risk Assessment that have been reviewed	New Measure	50%	At Risk	20%	Resourcing continues to be a challenge. There is overlap with channel risk assessment work. The Q1 figure was 15% and in Q2 we only achieved a further 5%.	

Metlink Public Transport

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
Connected Communities Resilient Future Thriving Environment	An efficient, accessible, and low carbon public transport network	Improving the customer experience across all areas of the public transport network	Provide a consistent and high quality customer experience across the public transport network	Passengers' overall satisfaction with the Metlink public transport ¹³	New Measure	Bus 92%	On Track	Bus: 92%	Results unchanged from Q1 as survey was completed in Q1. The next update will be provided in Q4 following the completion of the May 2022 Passenger Satisfaction Survey.
						Rail 93%	On Track	Rail: 95%	
						Ferry 98%	At Risk	Ferry: 94%	
				Passenger satisfaction with convenience of paying for Metlink public transport ¹⁴	New Measure	76%	On Track	76%	Results unchanged from Q1 as survey was completed in Q1. The next update will be provided in Q4 following the completion of

¹² DIA Mandatory Measure

¹³ The Metlink Public Transport Passenger Satisfaction Survey, which is run twice yearly, is used to determine Customer Satisfaction. Satisfied = score of 6-10 on a scale of 0-10. The question used to determine this measure is: *Thinking about the vehicle you are on now, how satisfied or dissatisfied are you with this trip overall?*

¹⁴ The Metlink Public Transport Passenger Satisfaction Survey is used for this measure. Satisfied = score of 6-10 on a scale of 0-10. The question used to determine this measure is: *Thinking about your experience of public transport (including trains, buses, and harbour ferries) in the Wellington region over the last three months, how satisfied or dissatisfied are you with how convenient it is to pay for public transport?*

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
Connected Communities Resilient Future Thriving Environment (Continued)	An efficient, accessible, and low carbon public transport network (Continued)								the May 2022 Passenger Satisfaction Survey.
				Passenger satisfaction with Metlink information currently available ¹⁵	New Measure	87%	Off Track	79%	Results unchanged from Q1 as survey was completed in Q1. The next update will be provided in Q4 following the completion of the May 2022 Passenger Satisfaction Survey.
				Passenger satisfaction with Metlink public transport being on time ¹⁶	New Measure	80%	At Risk	77%	Results unchanged from Q1 as survey was completed in Q1. The next update will be provided in Q4 following the completion of the May 2022 Passenger Satisfaction Survey.
				Percentage of scheduled bus trips that depart their timetabled starting location on time (punctuality) – to 5 minutes ¹⁷	94.2%	95%	On Track	95.4%	
				Percentage of scheduled rail services on-time (punctuality) – to 5 minutes ¹⁸	89.4%	95%	At Risk	90.7%	Ongoing disruptions caused by the weather affected reliability and punctuality this quarter, an issue with slope stability on the Kāpiti Line after a period of wet weather in December 2021 severely impacted services on both the Hutt and Kāpiti Line – a Saturday timetable was put in place for a week while KiwiRail undertook analysis of the area from Paekākāriki to Plimmerton. There were also a small number

¹⁵ The Metlink Public Transport Passenger Satisfaction Survey is used for this measure. Satisfied = score of 6-10 on a scale of 0-10. The question used to determine this measure is: *Overall, how satisfied, or dissatisfied are you with the information about public transport services that is currently available?*

¹⁶ The Metlink Public Transport Passenger Satisfaction Survey is used for this measure. Satisfied = score of 6-10 on a scale of 0-10. The question used to determine this measure is: *Thinking about the vehicle you are on now, how satisfied, or dissatisfied are you with the service being on time (keeping to the timetable)?*

¹⁷ This measure is based on services that depart from origin, departing between one minute early and five minutes late.

¹⁸ The rail punctuality measure is based on rail services arriving at key interchange stations and final destination, within five minutes of the scheduled time.

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
Connected Communities Resilient Future Thriving Environment (Continued)	An efficient, accessible, and low carbon public transport network (Continued)								of track issues and mechanical faults, a large number of speed restrictions and late running freight services affected performance on the Kāpiti and the Wairarapa lines.
		40 percent increase in regional mode share for public transport and active modes by 2030	Promote and encourage people to move from private vehicles to public transport	Annual Public Transport boardings per capita	63 per capita	64 per capita	Off Track	50 per capita	As a result of continued COVID-19 restrictions, per capita patronage levels are still below target. We continue to monitor per capita patronage levels.
			Provide fit-for-purpose vehicles, infrastructure, and services to continually deliver a high quality core network that meets ongoing demand	Percentage of passengers who are satisfied with the condition of the station/stop/wharf ¹⁹	New measure (88% Nov 2020)	90%	At Risk	89%	Results unchanged from Q1 as survey was completed in Q1. The next update will be provided in Q4 following the completion of the May 2022 Passenger Satisfaction Survey.
				Percentage of passengers who are satisfied with the condition of the vehicle fleet ²⁰	New measure (94% Nov 2020)	92%	On Track	94%	Results unchanged from Q1 as survey was completed in Q1. The next update will be provided in Q4 following the completion of the May 2022 Passenger Satisfaction Survey.
		Reducing public transport emissions by accelerating decarbonisation of the vehicle fleet (bus, rail, ferry)	Gross emissions for Metlink's public transport fleet will be minimised, reducing the offsets required to reach net carbon neutrality	Tonnes of CO ₂ emitted per year on Metlink Public Transport Services	New Measure (22,030)	20,626 tonnes	On Track	On Track	This is an annual measure reported in June, however progress so far indicates we are on track to achieve this measure by the end of the year. An additional 7 electric buses went into service during the quarter (a total of 32 of the 98 electric buses are now in service)

¹⁹ The Metlink Public Transport Passenger Satisfaction Survey is used for this measure. Satisfied = score of 6-10 on a scale of 0-10. The question used to determine this measure is: *How satisfied or dissatisfied are you with the condition of the stop/station/wharf?*

²⁰ The Metlink Public Transport Passenger Satisfaction Survey is used for this measure. Satisfied = score of 6-10 on a scale of 0-10. The question used to determine this measure is: *How satisfied or dissatisfied are you with the condition of this vehicle?*

Attachment 1 to Report 22.60

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
			Reduction of accidental death and serious injury on the public transport network and prioritisation of safety and maintenance on the Public Transport network to encourage safe behaviours	Accidental deaths and serious injuries sustained on the Public Transport network as a result of Metlink or operator activity ²¹	New Measure	Establish a baseline	On Track	On Track	This is an annual measure reported in June, however progress so far indicates we are on track to achieve this measure by the end of the year. A standardised Health and Safety reporting template has been agreed and implemented across the network from the November 2021 reporting period. This will allow for the consolidation of data and monitoring of trends in relation to areas of critical risk on the network.

Regional Strategy and Partnerships

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
Resilient Future	Taking regional climate action through regional strategy, collaboration, and advocacy	Working collectively with partners to take regional climate action	Reduction of Greater Wellington's corporate carbon emissions	Reduction in tonnes of CO ₂ equivalent emissions ²²	New measure	Reduction compared with baseline	On Track	1% reduction	This is an annual measure. The Q2 result is unchanged from Q1 as the most recent carbon audit was completed early in Q1. The next update will be provided in Q4.
	Regional economic development and recovery in a COVID-19 era	Regional economic recovery including low carbon economic transition	Alignment of Greater Wellington's activities and investment with the priorities of the Wellington Regional Leadership Committee ²³	As the Administering Authority, Greater Wellington will ensure the Committee has an agreed annual work programme and regular progress reporting	New measure	Achieved	On Track	On Track	Activity this quarter was focused around the Wellington Regional Growth Framework and Regional Economic Development Forum.
	Leading regional spatial planning	Implement the Wellington Regional Growth Framework							

²¹ This measures events on the Metlink Public Transport network that have resulted in an accidental death or serious injury to a member of the public or Metlink staff member.

²² This measure is for all of Greater Wellington's corporate greenhouse gas emissions. This includes all business units, and the share for the jointly owned Council Controlled Organisations based on ownership share.

²³ As the Administering Authority Greater Wellington supports and enables the operations and success of the Wellington Regional Leadership Committee.

Attachment 1 to Report 22.60

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
			Maintain a state of readiness of the Emergency Coordination Centre that is appropriately staffed and equipped to respond to an emergency	A team of CIMS ²⁴ trained Greater Wellington staff is ready to respond to an activation of the Emergency Coordination Centre	New measure	Achieved	On Track	On Track	Greater Wellington staff have undergone further training in CIMS. The Incident Management Team have attended further training in order to manage a CIMS function table. Some short deployments have taken place during this quarter to monitor and coordinate the ECC and in support of the local EOC functions during activations.
Connected Communities Resilient Future	An efficient, accessible, and low carbon public transport network	40 percent increase in regional mode share for Public Transport and active modes by 2030	Regional transport, planning, leadership, advice, and coordination to guide development and delivery of an integrated, multi-modal regional transport network	Wellington Regional Land Transport Plan is prepared and updated in accordance with the LTMA ²⁵ and central government guidance	New measure	Annual Monitoring report is presented to RTC ²⁶	On Track	On Track	The Annual Monitoring Report was received by RTC on 23 November 2021.
				Coordinate and deliver new workplace travel programmes with major regional employers	New measure	2	On Track	On Track	Working with AOs to identify most appropriate major employers e.g. those likely to benefit from transport and urban development infrastructure improvements to support active and public transport use. Wellington Regional Hospital Travel Action Plan extended to Hutt Valley DHB with merger of some health services (2DHB).
	Effective partnerships and co-designed agreements with mana whenua	Collaborative decision making with mana whenua partners	Effective decision making achieved through active involvement with mana whenua through strong partnership arrangements	Mana whenua report evidence of strong partnership arrangements and progress towards positive outcomes ²⁷	New measure	Achieved	Off Track	Off Track	This is an Annual Measure, however we do not anticipate that we will achieve this measure by the end of the year. Te Whāriki and anticipated governance changes will support stronger results in future years.

²⁴ CIMS = Coordinated Incident Management System

²⁵ LTMA = Land Transport Management Act

²⁶ RTC = Regional Transport Committee

²⁷ Annual Qualitative Survey of our six mana whenua partners.

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
			Positive outcomes for Māori achieved through effective and resourced planning and engagement	Increased incorporation and use of mātauranga Māori across services delivered by Greater Wellington	New measure	Achieved	On Track	On Track	This is an Annual Measure, however progress this year indicates that we are on track to achieve this measure by the end of the year. Pilot mātauranga Māori training run in October 21. Roll out expected from March 22.
			Mana whenua and Māori are enabled to achieve strong, prosperous, and resilient outcomes	Deliver Te Matarau a Māui annual work programme as agreed to by independent Board	New measure	Achieved	On Track	On Track	This is an Annual Measure, however progress this year indicates that we are on track to achieve this measure by the end of the year. Te Matarau a Māui is yet to meet to finalise the annual work programme (expected to meet February 2022). It is likely that our targets will be achievable set around this for the current reporting year, however there is a chance that if the annual work programme is not finalised in time the year end result will be "not measured".
				Mana whenua and Māori report they are prepared for managing effective responses to civil defence and other emergencies	New measure	Achieved	On Track	On Track	This is an Annual Measure, however progress this year indicates that we are on track to achieve this measure by the end of the year.

Water supply

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
Thriving Environment	A clean, safe, and sustainable future		Provide water that is safe, and pleasant to drink	Compliance with part 4 of the drinking-water standards (bacteria compliance criteria) ²⁸	100%	Compliant	On Track	100%	

²⁸ Non-Financial Performance Measures Rules 2013, Water Supply (DIA Mandatory Measure).

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
	drinking water supply			Compliance with part 5 of the drinking-water standards (protozoal compliance criteria) ²⁶	100%	Compliant	On Track	100%	
				Customer satisfaction: number of complaints regarding water clarity, taste, odour, pressure/flow, and supply ²⁶	0	<20 complaints per 1,000 connections	On Track	0	
				Number of waterborne disease outbreaks	0	0	On Track	0	
Resilient Future	Reduce water demand to support a sustainable water supply to avoid unnecessary investment in significant new water supply infrastructure	Support the reduction of the overall bulk water supply to the four metropolitan cities by 25 percent by 2030	Provide a continuous and secure bulk water supply	Average consumption of drinking water per day per resident within the TA districts ²⁶	369.8 L/d/p	<375 L/d/p	Off Track	376 L/p/d	The twelve-month rolling average result for Q2 exceeds the target of 375/L/p/d. There is a minor increase quarter on quarter, as demand is increasing as we come into the summer period. This quarter Wellington Water also rolled out our summer water use campaign – “Shower as long as a four-minute song.”
				Maintenance of the reticulation network: Percentage of real water loss from the networked reticulation system ²⁶	0.07%	+/- 0.25%	On Track	0.08%	
Resilient Future <i>(continued)</i>	Reduce water demand to support a sustainable water supply to avoid unnecessary investment in		Provide a continuous and secure bulk water supply <i>(continued)</i>	Response times to attend urgent call-outs in response to a fault or unplanned interruption	Time to reach site: 0 min	Time to reach site <90min	On Track	0 min	
					Time to confirm resolution: 0 hours	Time to confirm resolution <8 hours		0 hours	

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Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

Community Outcome	Strategic Priorities	Key Result Areas	Levels of Service	Performance Measures	Baseline (2019/20)	2021/22 Target	Status At 31 Dec	Result At 31 Dec	Commentary
	significant new water supply infrastructure (continued)			to the network reticulation system ²⁹					
				Response times to attend non-urgent call-outs in response to a fault or unplanned interruption to the network reticulation system ²⁷	Time to reach site: 0.9 hours	Time to reach site <72 hours	On Track	0 hours	
					Time to confirm resolution: 1.25 days	Time to confirm resolution <20 days		0 days	
					Number of events in the bulk water supply preventing the continuous supply of drinking water to consumers	0	0	On Track	0
				Sufficient water is available to meet normal demand except in a drought with a severity of greater than or equal to 1 in 50 years	6.9%	<2%	Off Track	20%	Completion of the Te Mārua capacity upgrade project is required to return the region to within the target level of service for drought resilience. However high per capita demand and growth continue to put pressure on supply capacity, and Wellington Water have a sustainable water supply program of activities that include a focus on bring down demand. Progressing with a business case for smart metering is a core part of this work.

²⁹ Non-Financial Performance Measures Rules 2013, Water Supply (DIA Mandatory Measure).

Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

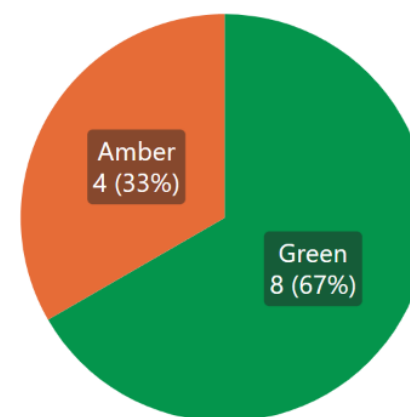
Appendix Three – Major Projects as at 30 January 2022

While this report is looking at Quarter Two results (1 October – 31 December), we are presenting the most up to date information for our major projects, which is their status as at 31 January 2022.

Greater Wellington-Led Projects

Initiative Name	Overall Status as at Jan 30
pNRP Plan Change 1, 2 & 3	Amber
Predator Free Wellington	Amber
Parks Network Plan Implementation	Amber
Wairarapa Moana	Amber
1 Billion Trees	Green
Fit For Future	Green
Flood Protection Shovel Ready	Green
GW Masterton	Green
Optimus	Green
pNRP Phase 2	Green
Te Whāriki Programme	Green
Whaitua Implementation Programme	Green

RAG Distribution of GW Led Initiatives



Recent and upcoming developments

1. PNRP Phase 2 had 42 Consent orders approved by the Court with only five outstanding which puts the program on track to have an operative regional plan in Quarter 3.
2. Fit-for-Future continues to make good progress with stakeholder engagement through working group forums shaping proposed new operating model. The appointment of the new General Manager Environment was confirmed early November and the first Design phase set to deliver by June. Additional funding was also approved in Quarter 2.
3. GW Masterton has come in under budget and on time with the staff being able to occupy the building before the end of the year. The contractor, project team and enabling support functions have worked well with the support and direction of the steering group.

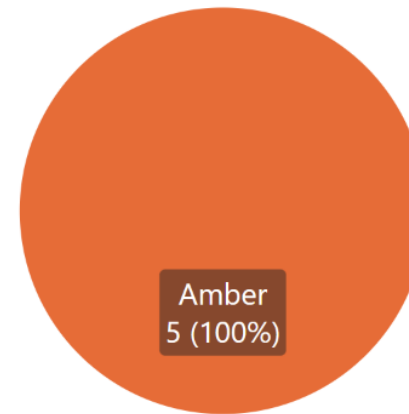
Greater Wellington's Quarterly Summary of Performance as at 31 December 2021

4. For Project Optimus COVID-19 impacted the timing of Go live, hindering the team's ability to fully undertake and complete user testing. Some data migration challenges required additional work but through Optimus, the finance, procurement, and assets modules have been rolled out to all business units and the project remains on track to be completed within the financial year, and within current budget.
5. Te Hunga Whiriwhiri was approved for an uplift to its organisational structure which enables the Te Whariki Programme to support Maori partnerships.
6. The Lower North Island Rail and Real Time Information (RTI) Business Cases were awarded funding from Waka Kotahi.

Multi-agency Led Projects

Initiative Name	Overall Status as at Jan 30
Let's Get Wellington Moving	Amber
Metlink Integrated Fares & Ticketing	Amber
Multi User Ferry Precinct	Amber
RiverLink	Amber
Silverstream Bridge	Amber

Performance of Multi-agency Initiatives



Recent and upcoming developments

1. For Let's Get Wellington Moving the primary focus remains on attaining agreement of a preferred option for the Transformation Programme (Mass Rapid Transit and Strategic Highways) by the middle of the year. Timelines remain very challenging but the Steering Group has developed an approach to the partner funding split.
2. Riverlink secured LGFA Green Fund low-rate loan. The focus on hearings and procurement activities continue with a number of residential submissions recently withdrawn and formal mediation agreements pending with other stakeholders.
3. Silverstream Bridge had additional budget approved. Tenders were received and a preferred vendor appointed. Submissions for consents closed in December and the total project cost is being re-baselined.

**Council
24 February 2022
Report 22.69**



For Decision

RESOLUTION TO EXCLUDE THE PUBLIC

That Council excludes the public from the following parts of the proceedings of this meeting, namely:—

Public Excluded minutes of the Council Meeting on 16 December 2021 – Report PE21.599

National Ticketing Solution Interim Option – Report PE22.10

Appointment to the Upper Ruamahanga River Management Advisory Committee – Waipoua Urban – Report PE22.28

Interim Chief Executive Performance Review for 2021/22 – Report RPE22.26

The general subject of each matter to be considered while the public is excluded, the reasons for passing this resolution in relation to each matter and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 (the Act) for the passing of this resolution are as follows:

Public Excluded minutes of the Council Meeting on 16 December 2021 – Report PE21.599	
<i>Reason for passing this resolution in relation to each matter</i>	<i>Ground(s) under section 48(1) for the passing of this resolution</i>
<p>Certain information contained in these minutes relates to the award of a contract for the delivery of the Kaitoke Flume Bridge seismic upgrade project and information relevant to the pricing of the contract. Release of this information would be likely unreasonably to prejudice the commercial position of Wellington Water Limited.</p> <p>Greater Wellington has not been able to identify a public interest favouring disclosure of this particular information in public proceedings of the meeting that would override the need to withhold the information.</p>	<p>The public conduct of this part of the meeting is excluded as per section 7(2)(b)(ii) as the making available of the information would be likely unreasonably to prejudice the commercial position of the person who supplied or is the subject of the information.</p>