QUEENSTOWN BUSINESS CASE

Summary Report

ALAN KERR

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FINAL

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If you have further queries, call our contact centre on 0800 699 000 or write to us:

NZ Transport Agency
Private Bag 6995
Wellington 6141

This document is available on the NZ Transport Agency's website at http://www.nzta.govt.nz

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Contents

QUEENSTOWN BUSINESS CASE 1
1 Executive Summary 6
1.1 Context 6
1.2 Geographic Extent 6
1.3 Assurance Process 6
1.4 Business Case Composition 7
1.5 Case for Change 8
1.6 Problems, Benefits, Opportunities and Investment Objectives 10
1.7 Option Development and Assessment 11
1.8 Preferred Programme 12
1.9 Performance of preferred programme against objectives 16
1.10 Sequencing 18
1.11 Funding 20
1.12 Commercial Case 22
1.13 Management case 22
1.14 Summary 23
1.15 Business Case Documentation 23

List of Tables

Table 1: Performance against investment objectives 16
Table 2: Sequencing of Interventions 19
Table 3: Activities for the next NLTP period 21
Table 4: Business Case Documentation Configuration 24

List of Figures

Figure 1: Project Extent 6
Figure 2: Queenstown Business Case composition 7
Figure 3: Queenstown Resident and Visitor Growth numbers 9
Figure 4: Projected People per hour along SH6A 9
Figure 5: Problem Statements and Investment Objectives 11
Figure 6: Three pillars of investment 12
Figure 7: Programme of Interventions by Funding Period 13
Figure 8: Mapped Programme of Interventions 14
Figure 9: Amenity Assessment (current and potential future) 17
Figure 10: Expenditure Profile (capex) 20
Figure 11: Expenditure Profile (opex) 21
Figure 12: Funding by Source $m (Next 3 NLTP periods//21-24 period) 21

ABBREVIATIONS

Abbreviation	Full Name
ADT	Average Daily Traffic
BCR	Benefit Cost Ratio
bn	billion
BRT	Bus Rapid Transit
CAPEX	Capital Expenditure
CBD	Central Business District
CCT	Closed circuit television
CIP	Crown Infrastructure Partners
COVID-19	2019 novel coronavirus
DBC	Detailed Business Case
DSI	Death and Serious injury
EECA	Energy Efficiency and Conservation Authority
EV	Electric Vehicle
F2Q	Frankton to Queenstown
GPS	Government Policy Statement
GR2KF	Grant Road to Kawarau Falls
HOV/SOV	High Occupancy Vehicle/Single Occupancy Vehicle
IBC	Indicative Business Case
ITS	Intelligent Transport Systems
KPI	Key Performance Indicator
LCLR	Low Cost Low Risk
LOS	Level of Service
M	Millions (where adjoining monetary value)
MCA	Multi criteria analysis
MOT	Ministry of Transport
MRT	Mass Rapid Transit
NLTF	National Land Transport Fund
NLTP	National Land Transport Programme

Abbreviation	Full Name
NZUP	New Zealand Upgrade Programme
OPEX	Operational Expenditure
ORC	Otago Regional Council
PBC	Programme Business Case
PPP	public/private partnerships
PT	Public Transport
QIT	Queenstown Integrated Transport
QLDC	Queenstown Lakes District Council
QRA	Quantitative Risk Assessment
QTC	Queenstown Town Centre
RLTP	Regional Land Transport Plan
RMA	Resource Management Act
RTC	Regional Transport Committee
SC	Strategic Case
SH	State Highway
SHA	Special Housing Area
SPSV	Small passenger service vehicles
SPV	Special Purpose Vehicle
SSBC	Single Stage Business Case
tbc	To be confirmed
TDM	Travel Demand Management
TMA	Travel Management Association
VKT	Vehicle kilometres travelled
vpd	Vehicles per day
Waka Kotahi	Waka Kotahi NZ Transport Agency
WATN	Wakatipu Active Travel Network
WTOC	Wellington Transport Operations Centre
W2G	Way to Go

1 EXECUTIVE SUMMARY

1.1 Context

1. The purpose of this business case, referred to as the Queenstown Business Case, is to provide a detailed assessment of options to improve the transport network, developing on previous work undertaken. It provides evidence that the preferred programme provides the best feasible option to deliver the desired outcomes, and that it is affordable.

2. The project partners are seeking endorsement of the Queenstown Business Case programme. Specifically, in the next NLTP period (2021-24), there are two business case activities to be developed - one for Travel Demand Management (TDM), the second for Public Transport (PT) Services and Infrastructure. It is anticipated that the TDM business case will be led by Waka Kotahi NZ Transport Agency (Waka Kotahi) and the PT business case will be led by the Otago Regional Council (ORC).

1.2 Geographic Extent

3. The Queenstown Business Case covers the Wakatipu Basin. It incorporates the Queenstown Town Centre, the Frankton to Queenstown corridor, Frankton and the Frankton to Ladies Mile Corridor. Investment cases have been developed for each geographic area. The geographic extents of the project are presented in Figure 1.

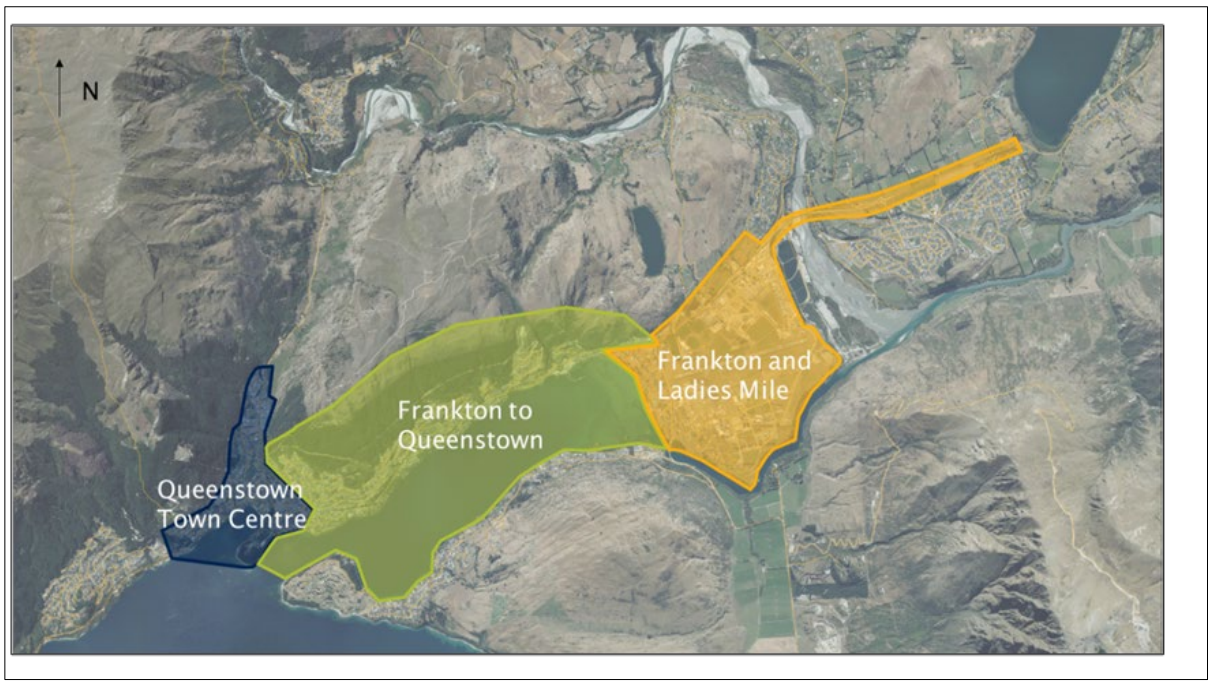

Figure 1: Project Extent

1.3 Assurance Process

4. The assurance process undertaken for the Queenstown Business Case is as follows:

- A Challenge Team review of the emerging programme by a team of independent technical specialists, February 2020
- Modelling Peer Review (Flow Transportation Specialists), September 2020
- Economics Peer Review (Ernst and Young), September 2020
- Review of the draft Queenstown Business Case – (Waka Kotahi, Queenstown Lakes District Council (QLDC), ORC, and AECOM), September 2020

- Business case drawings (Arup), September 2020
- Review of the final draft Queenstown Business Case, in compliance with Waka Kotahi business case review process requirements (Commute), October 2020.
- Investment Quality Assurance Review (Waka Kotahi), October 2020.

1.4 Business Case Composition

5. The Queenstown Business Case builds on previous studies and investigations including the Queenstown Integrated Transport (QIT) Programme Business Case (PBC, Waka Kotahi, June 2017), Queenstown Town Centre (QTC) Masterplan PBC (QLDC November 2017) and associated Indicative Business Cases (IBCs) for the arterial roads, public and passenger transport and parking infrastructure. This business case is the next step in the project development process. The background and composition of the Queenstown Business Case is summarised in Figure 2.

Figure 2: Queenstown Business Case composition

6. As the Queenstown Business Case developed, several changes occurred which had implications for the programme and scope of works.

   a. It was recognised that the Frankton area had a key role to play in growth and network connectivity (in particular the SH6 / SH6A intersection) and that a connected network-wide response would be required to avoid misalignment between packages and to maximise the benefits. The original geographic extent (QTC and Frankton to Queenstown) was expanded to include Frankton and Ladies Mile. This included the geographical scope covered by the Grant Road to Kawarau Falls Bridge (GR2KFB) project.

b. In parallel with this business case, a spatial plan was developed for the Wakatipu Basin. This acknowledged the importance of a higher level of land use and transport integration.

c. Funding was secured for infrastructure identified through previous investigations and the early stages of this business case through:

- The New Zealand Upgrade Programme (NZUP), a $6.8 billion investment to get New Zealand NZ cities moving, to save lives and boost productivity in growth areas. Queenstown was allocated $ 90m funding for SH6A corridor improvements, Ladies Mile corridor improvements and SH6 Grant Road to Kawarau Falls Bridge improvements. The focus of the NZUP improvements is on infrastructure that provides for public transport priority, as identified through this business case. The interventions provided by NZUP are discussed in section 1.8.

- Crown Infrastructure Partners (CIP) "shovel ready" key infrastructure projects for projects that would add significant value to the nation's economic recovery from COVID-19. Queenstown was allocated $50m towards Stage 1 of the town centre arterials and $ 35m towards the streetscape component of the Queenstown Town Centre transformation. The interventions provided by CIP are discussed in section 1.8.

7. These factors have been included in the Queenstown Business Case, which has been compiled as a single document to report on the integrated programme of works.

8. The level of detail of the Queenstown Business Case is as follows:

- The Queenstown Town Centre Detailed Business Case (QTC DBC) builds on the work undertaken through the QIT PBC, the Queenstown Town Centre Masterplan PBC and associated IBCs for the arterial corridor, public and passenger transport facilities and parking infrastructure.

- The Frankton to Queenstown Single Stage Business Case (F2Q SSBC) confirms and develops an activity for the corridor and how it will be implemented.

- High Capacity Passenger Transport improvements have been prepared to an IBC level, where solutions are long-listed then short-listed. As the high capacity passenger transport options have an impact on the design of the town centre and Frankton to Queenstown elements, a preferred network of improvements has been identified.

1.5 Case for Change

9. The Queenstown area is one of New Zealand's fastest growing regions, driven by population growth, the tourism industry and supporting activities. This growth is placing increasing pressure on the infrastructure of the area and, in particular the transport system.

10. There is a compelling Case for Change for investment in improving the multi modal transport network in Queenstown. Evidence suggests there is a problem, and the scale of the problem is significant. Key stakeholders are aligned and behind the need to address the agreed problems.

11. The Case for Change and scale of the problem is presented below:

- A Spatial Plan is being developed to look at likely changes to where people will live and work within the Wakatipu Basin over the next 40 years. It identifies a need to plan development sustainably to minimise traffic growth. Therefore future investment in the transport network will need to align with this plan. The Spatial Plan, coupled with the new National Policy Statement on Urban Development (NPS-UD 2020), seeks to encourage intensification and enhance planning policy particularly around public transport nodes. These two documents will lead to a major shift in planning policy in Queenstown and result in improved development control.

- Residential and visitor growth remains strong which will increase travel demand on the current network. Peak day population is forecast to grow from approximately 120,000 in 2018 to 200,000 in 2048 (refer to Figure 3). While COVID-19 has undoubtedly had a significant impact on visitor numbers, this is a temporary phenomenon with QLDC projecting that Queenstown will be back to pre-COVID visitor numbers by 2024. This is a slightly shorter recovery period than that projected through Waka Kotahi's Arataki forecasts which indicates a medium term (10 year) impact on growth

and the economy. Due to the level of uncertainty, ongoing monitoring of transport, land use and economic changes will be required.

- Parts of the network are already at capacity. SH6A practical capacity was exceeded on 140 days in 2019. Without remedy, the level of service will further decline – peak spreading will occur, travel time reliability will deteriorate, and increasingly significant congestion will result. By 2028, modelling indicates that average conditions will be similar to current peak travel times and peak periods will experience regular gridlock with car and PT travel times between Lake Hayes Estate and Queenstown regularly exceeding 60 minutes (compared to 15-20 minutes today).
- Peak hour people trips are forecast to double on the geographically constrained SH6A, from approximately 1,500 (in 2028) to more than 3,000 (2048) (refer to Figure 4). SH6A is already at capacity at certain times of the day. The physical constraints of the environment mean that the network is not resilient to disruption – SH6A is the main access corridor for Queenstown and crashes or weather events have network wide implications.
- Travel in Queenstown is predominately by private car (for example, private car trips make up 84% of trips on SH6A). This is not sustainable from the perspectives of resident and visitor growth, efficiency, amenity, or for achieving positive environmental (including climate change), safety and resilience outcomes. Left unchecked, the road network would be over capacity for much of the day, and it is estimated that Queenstown Town Centre would require an additional 3,000 car parking spaces should the current mode share continue into the future. There has been some success in reducing Queenstown's car dominance with the introduction of the $2 Orbus service in 2017. However, the service is already reaching capacity and a further step change will be required to maintain long term functionality on the network. Modelling demonstrates that a shift from 16% to 40% of people using alternative modes to the private car will be required during peak periods on SH6A by 2028. This number increases to 60% by 2048 if historic levels of growth continue.
- Total emissions are forecast to increase from 178,535t total annual emissions (Co2-e) in 2018 to 227,939t in 2028 in a Do-minimum situation. The provision of more sustainable travel options to the private car, coupled with behavioural change will be critical to reduce emissions and mitigate adverse effects on Queenstown's urban and natural environment.
- Evidence shows that Queenstown Town Centre is becoming degraded in a way that threatens the cherished liveability, local resident appeal and rich visitor experience that people expect from Queenstown. Queenstown's rapid and organic growth has created a situation where the needs of the private motor vehicle are taking priority over people and the much-needed balance of transport across public, passenger and active modes cannot occur at anywhere near the required level. At the heart of this situation is the need to ensure that the experience the Town Centre provides is attractive enough to bring locals back to town and keep the visitors coming to the district.
- It is estimated that there will be between a $ 670m to $1.2 billion loss to the Queenstown economy, over a 40 year period, through visitors travelling elsewhere without investment in the Queenstown transport network.

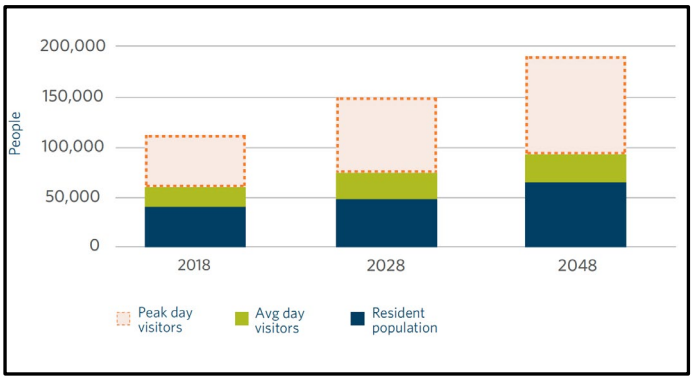

Figure 3: Queenstown Resident and Visitor Growth numbers

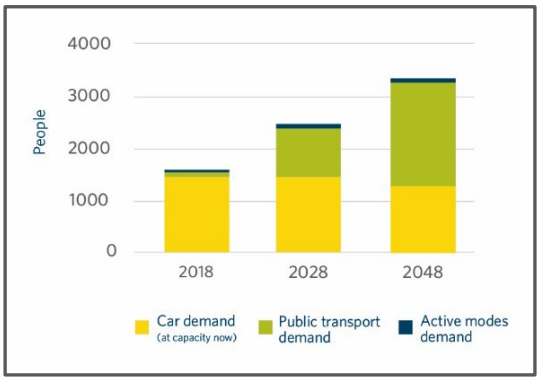

Figure 4: Projected People per hour along SH6A

12. Investment in Queenstown's transport network supports safer transport, encourages mode shift by providing alternative choices to the private vehicle, supports future growth, and improves customer levels of service. This business case is strongly aligned with national, regional, and local policies and is consistent with both the current Government Policy Statement on Land Transport (GPS 2018) and the new GPS 2021-24. Further detail on this is provided in the Preferred Option Assessment report.

1.6 Problems, Benefits, Opportunities and Investment Objectives

13. The preceding QIT PBC identified rapid growth and car dominance as the two fundamental transport problems. The problem statements and benefits for this business case were developed from the investment objectives agreed as part of the QIT PBC and were confirmed through stakeholder workshops. These investment objectives are consistent for all aspects of the Queenstown transport business cases.

14. The QIT PBC problem statements were retested during an October 2018 workshop with Waka Kotahi, QLDC, ORC and other key stakeholders. It was agreed that, although they remained applicable, they should be modified for the purposes of the F2Q and QTC business cases. Stakeholders also agreed that Queenstown Town Centre has sufficiently unique problems to warrant separate statements, while Frankton to Queenstown, Frankton and Ladies Mile share consistent themes. The following Problem Statements were agreed for the respective study areas:

Frankton to Queenstown, Frankton and Ladies Mile

15. **Efficiency:** Rapid growth, the high relative attractiveness of car travel over other modes and a lack of alternative routes are leading to increasing traffic volumes along SH6A. This is causing more congestion, longer/more unreliable travel times and rat-running, which limits opportunities for future tourism growth and reduces the liveability of Queenstown.

16. **Amenity:** High traffic volumes, limited connections to active travel routes and unattractive adjacent land use means that SH6A is not presenting as a high-quality gateway into Queenstown. This does not align with the community's aspiration for high levels of amenity and an enhanced place value for Queenstown.

17. **Safety:** High traffic volumes limit opportunities to safely cross or turn onto SH6A, increasing frustration for all road users and limiting access to PT/active travel modes. This raises the likelihood of injury or death, causes community severance and reduces the LOS for all road users.

18. **Resilience:** SH6A provides the only direct transport link between Queenstown and Frankton but is subject to landslides and is constrained in width. This means that the road is susceptible to delays caused by minor planned or unplanned disruptions, which creates severance between the two centres and makes access to essential services (i.e. emergency services and the airport) vulnerable.

Queenstown Town Centre (QTC)

19. **Efficiency:** Limited PT/active travel options, coupled with growth in resident and visitor numbers, is leading to increasing congestion and parking demand. This further discourages people from visiting the Town Centre, has negative environmental effects and reduces Queenstown's liveability and visitor experience.

20. **Amenity:** Severance created by high traffic volumes on SH6A together with the effect of drivers searching for parking is devaluing the pedestrian/cyclist experience, constraining the expansion of the town centre and limiting economic and placemaking opportunities.

21. **Safety:** Roads performing both place and access functions introduce conflicts between vehicles and other modes, which increases the likeliness for injury and reduces the quality of the public realm.

22. Although these problem statements were developed separately for each of the two areas, there was enough commonality to create a common set of investment objectives, as shown in Figure 5 below.

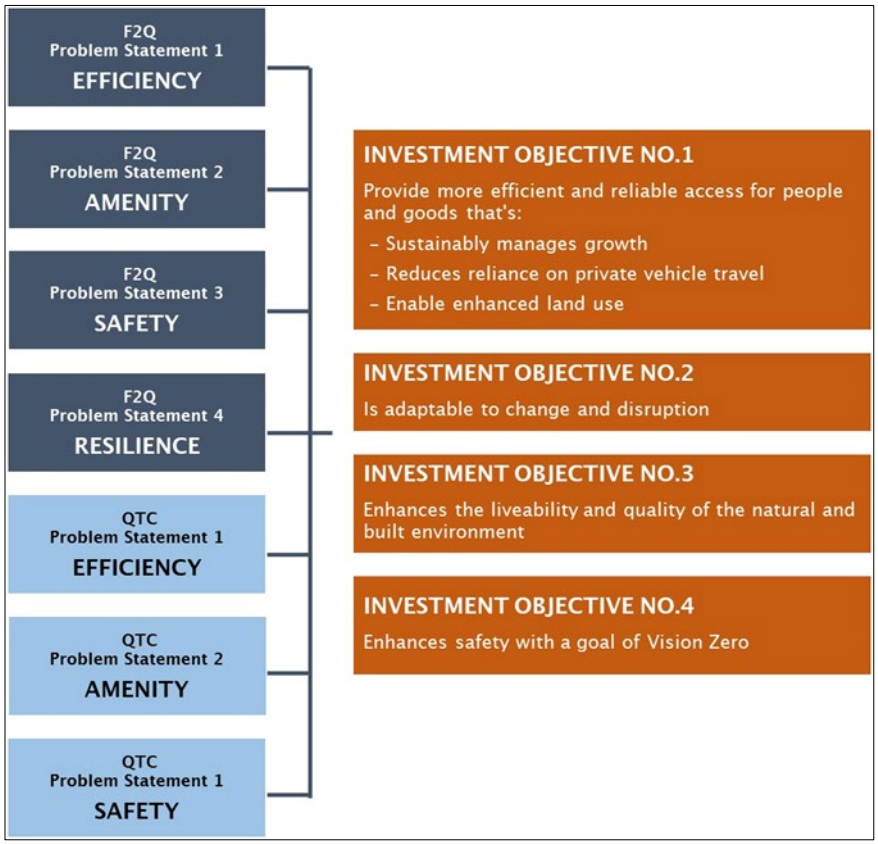

Figure 5: Problem Statements and Investment Objectives

1.7 Option Development and Assessment

23. The development of the recommended programme involved an iterative optioneering process alongside stakeholders representing local Iwi, businesses, and community groups, as follows:

    - Building on previous work plus some new ideas, more than 300 options were put forward (240 ideas for Queenstown Town Centre and 140 ideas for Frankton to Queenstown).
    - These ideas were tested and distilled into nine packages.
    - The scope was extended to bring in Frankton. Thirteen options that were initially identified for the SH6/SH6A intersection as part of the Grant Road to Kawarau Falls Bridge IBC, July 2017 were retested along with the Investment objectives in July 2020 – one further option was added.
    - The preferred programme was developed and tested through Councillor meetings and also stakeholder and public engagement (August 2020).

24. As demonstrated in the case for change above, the current rate of traffic growth is not sustainable. In order to support the ongoing development of the area, a significant shift to non-car modes of transport is required. This requirement has been the key determinant in the development of the emerging programmes.

25. The programme emerging from the optioneering processes was publicly consulted on during August 2020. This, coupled with further technical assessment, allowed the preferred programme to be identified.

26. This engagement showed general support for the proposed interventions, noting that some questions were raised about specific interventions that will need to be considered further as the interventions progress to the next stage. Comments raised during engagement indicated that a more detailed consideration of Town Centre parking requirements as well as park-and-ride needed to be considered. These are currently being developed to a greater detail by QLDC.

1.8 Preferred Programme

27. The optioneering and engagement processes have demonstrated that the mechanism to deliver on the investment objectives will need to include a wide range of initiatives focussed on shifting the current reliance on the private vehicle, by providing users with a range of travel choices. It is therefore important that investment is distributed to infrastructure and non-infrastructure as identified through the 'three pillars of investment' (Figure 6) described below:

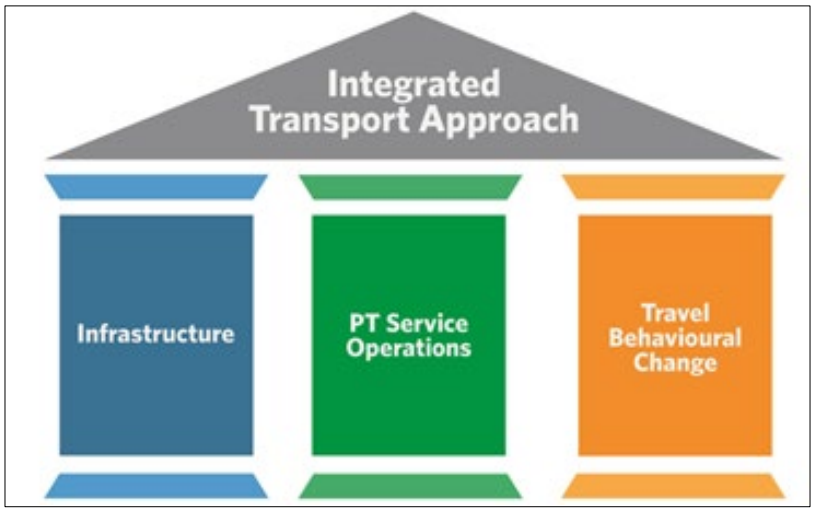

Figure 6: Three pillars of investment

- Targeted infrastructure investment – Urban realm improvements to the town centre facilitated by the CIP investment and the interventions identified in the active travel SSBC, improvements to SH6 and SH6A facilitated by NZ Upgrade Programme investment.
- Public Transport services – A high quality system built on Bus Rapid Transit (BRT) principles providing increased public transport services and improved public transport facilities (fleet and infrastructure), leveraging off the public transport priority provided through the NZUP investment.
- Travel Behaviour Change mechanisms – A suite of interventions that encourage the uptake of more sustainable transport modes through more proactive parking management and other Travel Demand Management tools. This will be achieved through both pull and push factors. For example, PT fare incentives can be used to encourage uptake (the success of the Orbus $2 flat fare is evidence of this).

28. The analysis demonstrates that the interventions need to be built around a step change in public transport, provided through a high capacity, high priority public transport spine that links the key development areas identified through the spatial planning process as well as important tourist destinations. Feeder networks of public transport and active modes are also provided. This needs to be supported by the infrastructure and behaviour change aspects for it to be successful. This includes the CIP funded targeted improvements in the town centre that reduce traffic volumes and improve walkability as well as the NZUP funded PT priority elements.

29. The preferred programme also includes a future suite of interventions that could be implemented at a later date when required, or as funding becomes available. A summary of the interventions that make up the preferred programme are presented by funding period in Figure 7 and set out in a map in Figure 8. Further detail on funding requirements is provided in section 1.11.

Figure 7: Programme of Interventions by Funding Period

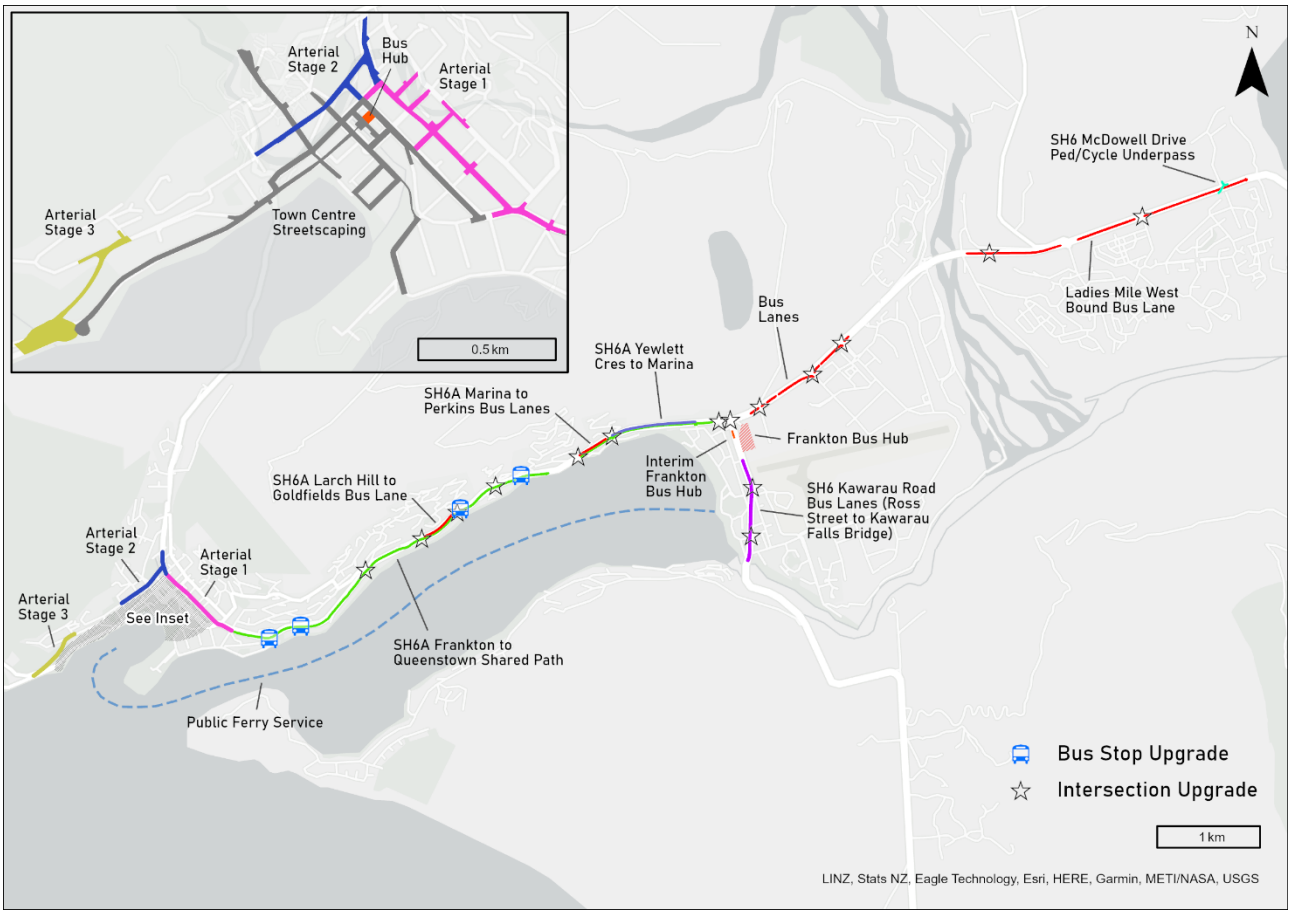

Figure 8: Mapped Programme of Interventions

Infrastructure Committed – Town Centre (CIP funded)

30. The first stage of the arterial corridor will remove general traffic from Stanley Street (between Shotover Street and Ballarat Street). This will improve pedestrian experience and safety and provide better connections between Project Manawa (the civic heart of Queenstown – providing a range of cultural and community facilities), the historic core of the town centre and the lake.

31. Town Centre streetscape upgrades to improve pedestrian and cyclist facilities and encourage a slower street environment creating a calmer and more enjoyable experience for everyone.

Infrastructure Committed – SH6A Corridor Improvements (NZUP Programme funded)

32. Targeted priority for PT implemented between the SH6/SH6A intersection and SH6A/Marina Drive intersection.

33. Key intersections signalised with PT priority.

Infrastructure Committed - SH6 Ladies Mile Corridor Improvements (NZUP Programme funded)

34. Westbound PT lane along SH6 - Ladies Mile. Bus priority onto the Shotover bridge is being considered.

35. Howards Drive roundabout access and safety improvements

Infrastructure Committed - SH6 Improvements (NZUP Programme funded)

36. Improvements to the SH6A/SH6 intersection

37. The SH6 link to the east will include bus lanes in both directions and signalising the existing intersections.

38. The SH6 link to the south will include a northbound bus lane and signalising the existing intersections.

39. Upgrade to the existing Frankton hub to resolve current congestion issues and provide a higher quality waiting environment for customers.

Infrastructure recommended (unfunded)

40. A series of town centre upgrades to improve pedestrian and cyclist facilities, supporting the significant increase in expected active mode usage while encouraging a slower street environment creating a calmer and more enjoyable experience for everyone.

41. Urban realm improvements along Stanley Street and Shotover Street. This will pave the way for revocation of these sections of SH6A.

42. An upgraded transport hub at Stanley Street, acting as the principal gateway into the town centre. The delivery of the hub will be split over two stages. The first stage of this will be provided through on street improvements that will facilitate the service improvements described below.

43. An extension to the arterial route (Stage 2 and 3) that reduces general traffic in the town centre – particularly on Stanley Street and Shotover Street. This will further improve pedestrian experience and safety, and provide better connections between Project Manawa, the historic core of the town centre and the lake. The second stage of the arterial route extends from Gorge Road to Hay Street and is covered by this business case. The third stage connects through to One Mile Roundabout in the longer term.

44. A widened shared path along the lakeside of Frankton Road provides improved connectivity for pedestrians and cyclists, and improved travel choice.

45. Improved first and last mile connectivity to the bus stops and hubs across the network improves access to the PT services.

Public Transport Services (unfunded)

46. Enhanced public transport fleet, stop and depot facilities to deliver higher capacity and higher frequency BRT style services. The fleet will be upgraded incrementally with a view to delivering highly efficient and environmentally friendly bi-articulated “trackless tram” style vehicles as demand increases. A network of enhanced BRT station stops will be provided with enhanced first mile/last mile connectivity.

47. Ferry services that complement the bus services. These have been detailed in a separate ferry business case (ORC).

48. Stage two of the development of the bus hub in Queenstown Town Centre to sit alongside project Manawa and other potential Transit Oriented Developments. This will provide also improved connectivity with regional and tourist coach services.

49. Further upgrades to bus services to provide connector services to key residential and development areas, as required through the delivery of the spatial plan.

50. Future offline public transport services that provide a further step change in capacity along with additional resilience and experiential benefits. This will require the development of offline public transport hubs in both Frankton and Queenstown.

Travel Behavioural Change (unfunded)

51. Travel Demand Management to encourage people to use more sustainable and higher capacity forms of transport.

52. Improved parking management in both Queenstown Town Centre and Frankton to reduce circulating traffic volumes.

53. Improved use of technology for transport network operations management and customer information (wayfinding and variable message signage).

1.9 Performance of preferred programme against objectives

54. The preferred programme performs well against all four investment objectives and provides numerous multi-modal benefits across all transport user modes.

55. The programme BCR for the elements that are recommended for the next ten years is 2.3. The programme BCR for the full programme is 1.5 (reflecting the inclusion of elements with higher costs relative to benefits). A summary of the headline performance figures is provided in Table 1 below:

Table 1: Performance against investment objectives

Investment Objective	Summary of performance (sample KPIs)
Provides more efficient and reliable access for people and goods	• Greater than 100% increase in corridor people movement capacity for SH6A by 2028 • Greater than 20% improvement in travel time for public transport users, network wide by 2028 • Unlocks $670m to $1.2 billion of economic growth in Queenstown over 60 years
Adaptable to change and disruption	• Infrastructure provides flexibility to operate a scalable PT service • Investment in alternative modes improves travel choice • Future offline corridor improves resilience of Frankton to Queenstown journey
Enhanced liveability and quality of the natural and built environment	• Improvements in amenity across the town centre contributes to $143m of wider economic benefit over 60 years • 15% reduction in traffic emissions by 2048
Enhances safety with a goal of vision zero	• Targeted intersection safety improvements • Economic analysis indicates safety benefits of up to $31m over 60 years

Investment Objective 1 – Provides more efficient and reliable access for people and goods

56. Fundamentally, the preferred programme delivers a step change in capacity across the network. A focus on more efficient modes of transport (PT and active modes) means that more people can move around with less delay. The focus on PT services improves the capacity of the core route between Frankton and Queenstown by over 100%.

57. By 2028, the preferred programme network is able to incorporate around 15% more growth than the existing network and still deliver travel time savings of around 21% for Public Transport for the journey between Lake Hayes Estate and Queenstown. The proposed BRT services will deliver significant travel time reliability benefits for public transport users. The priority measures will allow the public transport services to run reliably to schedule and the service frequency increases will deliver a “turn up and go” service for the Wakatipu Basin. Due to the nature of the improvements, there will also be some reliability improvements for motorists – particularly those travelling between Frankton and Queenstown and accessing Frankton Road from the residential areas to the north. Vehicles servicing the businesses in the town centre will have more reliable travel times improving the efficiency of the supply chain.

58. Although increasing levels of traffic congestion (as demonstrated in the do minimum modelling) would force mode shift, this represents a negative and “blunt stick” approach. Through the implementation of the preferred programme, people will be enticed onto the alternative modes through a step change in provision, capacity and amenity. This will be accompanied by an effective travel demand management package (incorporating QLDC’s new town centre parking management approach). This will allow capacity on the traffic network to be freed up for the people who really need to use it (local businesses, servicing vehicles, those with mobility needs etc).

59. The additional capacity provided across the network has the potential to unlocks $670m to $1.2 billion of economic growth in Queenstown over 60 years.

Investment Objective 2 – Adaptable to change and disruption

60. The onset of the COVID-19 pandemic has demonstrated the importance of adaptability. Although the working assumption is that growth will return to previous levels relatively quickly, there is now a great deal more uncertainty. As such, the preferred programme has been developed to be scalable. The core infrastructure elements delivered through the CIP and NZUP investment enable public transport services to be improved incrementally and in a way that meets demand and growth requirements.

61. The emerging spatial plan for the Queenstown Lakes District is well aligned with the preferred programme. As land use becomes more structured and focussed on key transport nodes, the services can be modified to maximise the potential of these nodes to become transit oriented developments.

62. The preferred programme also provides improved resilience to unplanned events. Dedicated provision for public transport across Frankton, coupled with investment in the active travel network and improved information provision will provide people with more travel choice.

63. Longer term, the provision of an offline public transport link between Frankton and Queenstown will deliver an alternative corridor that provides full separation from the road network.

Investment Objective 3 – Enhanced liveability and quality of the natural and built environment

64. The streetscape and urban realm improvements in the town centre will deliver significant amenity improvements that will have a positive effect on town centre businesses. Analysis has been undertaken using two (similar) amenity assessment tools and both demonstrate that the quality of the urban realm in the town centre will improve (see below – green coloured streets indicate areas of higher amenity). The graphics in Figure 9 indicate that the current urban fabric is highly variable and this will be improved. Amenity improvements will result in economic benefit as the town centre urban realm improvements will present opportunities to stimulate development. Analysis of wider economic benefits indicates that the urban realm improvements could contribute to $143m of wider economic benefits that would manifest themselves as land use development or intensification.

Figure 9: Amenity Assessment (current and potential future)

65. It is important to note that the enhanced liveability and quality of the natural and built environment will not be limited to the Queenstown Town centre. Corridor improvements along SH6 and SH6A will assist with the delivery of the urban realm improvements envisioned in the Frankton Masterplan. High quality public transport facilities and vehicles will also improve the look and feel of the corridor. Furthermore, the shift towards more sustainable modes will allow the economy grow without increasing transport related emissions. Traffic related emissions are forecast to reduce by 15% by 2048 despite an increase in the residential population of approaching 100%.

Investment Objective 4 – Safety improvements

66. Intersection improvements coupled with improvements to infrastructure for pedestrians and cyclists will deliver improved safety outcomes. A focus on public transport will also encourage more people to use an inherently safer form of transport. Economic analysis has been undertaken using output from the transport modelling suite. This indicates potential crash savings which contribute between $25m and $31m in economic benefit over the next 60 years.

1.10 Sequencing

67. The following table (Table 2) demonstrates the proposed sequencing for the interventions. This sequencing has been developed in a way that maximises the benefits provided by the committed projects through short term improvements in PT services that pave the way for the implementation of BRT style services from 2027. Behaviour change components will be required to match the PT service improvements to maximise mode shift and maximise overall network efficiency. The table demonstrates the degree to which the interventions deliver economic benefit (through the Benefit Cost Ratio calculations).

Table 2: Sequencing of Interventions

Element	Lead Organisation	Dependencies (Description and Completion Date)	Trigger Points	Activity Class	IAF Assessment Profile	Expected Cost implications	IAF Funding Priority	DBC Preferred Programme Status	NLTP Period for Implementation
SH6A Improvements, GR2KFB Improvements and Ladies Mile Improvements	Waka Kotahi	Requires mode shift otherwise whole network breaks down	None – committed activity	NZUP - committed activity	None – committed activity	$106m	None – committed activity	Committed Activity – No approvals required	21-24
Arterials – Stage 1, Town Centre Upgrade – Stage 1	QLDC	Arterials requires design inputs from Project Manawa, e.g. retaining levels, access, pedestrian overbridge	None – committed activity	CIP – committed activity	None – committed activity	$120m	None – committed activity	Committed Activity – No approvals required	21-24
Travel Demand Management package	QLDC / ORC / Waka Kotahi	PT Services and Infrastructure, NZUP and Active Travel to help with mode shift	Monitoring of transport activity required	Promotion of road safety and demand management	Results Alignment: H CBA: M BCR = 3.5	$1.8m	4	Recommended Option – Funding approval required	Ongoing activity over multiple periods
PT Services Improvements	ORC	NZUP funded infrastructure, TDM	None – requires small variations within existing contract	Public Transport Continuous Programme	Results Alignment: H CBA: M BCR = 3.5	Increase in annual gross opex from $8m to $11m.	4	Recommended Option – Funding approval required	21-24 for further investigation, staged implementation from 24-27
On Road PT Service Improvements	ORC	NZUP funded infrastructure, TDM, Stanley Street Hub, Frankton Hub	Various demand triggers will require a step-change in service improvements	Public Transport improvements	Results Alignment: H CBA: M BCR = 3.5	$80m plus gross opex costs ramping up from $11m to $24m per annum by 2027	4	Recommended Option – Funding approval required	Staged implementation over multiple periods starting 27-30
Stanley Street and Shotover Street Improvements (including Stanley Street Bus Hub Stage 1)	Waka Kotahi	NZUP and CIP funded infrastructure, Project Manawa site clearance work along Stanley Street	Immediate benefits – dependencies provide trigger points	Local road, regional and state highway improvements	Results Alignment: H CBA: L BCR=1.6	$24m	5	Recommended Option – Funding approval required for Pre-imp and property	24-27
Town Centre Upgrade – Stage 2	QLDC	Town Centre Upgrade – Stage 1	Immediate benefits	Walking and Cycling improvements	Results Alignment: H CBA: L BCR = 1.5	$17m	5	Recommended Option – Funding approval required for Pre-imp	24-27
Arterial Stage 2	QLDC	Replacement of memorial hall, which becomes Performing Arts Centre at Project Manawa	Immediate benefits – dependencies provide trigger points	Local road, regional and state highway improvements	Results Alignment: M CBA: L BCR = 0.9 (1.1 with QLDC property costs discounted)	$43m (excluding the rebuild of the Memorial Hall)	6	Recommended Option – Funding approval required for Pre-imp and Property phases	Further investigation 24-27, pre-implementation and Implementation 27-30
Stanley Street Redevelopment (including Bus Hub stage 2)	QLDC / ORC / Developer	Stanley Street and Shotover Street Improvements, revocation of State Highway	Likely funding trigger required – to be confirmed through further investigation	Public transport improvements/ third party funding	n/a[1]	$46m (incl $33m property costs)	Not required	Other supporting activities – for endorsement	Further investigation 24-27
Arterial Stage 3	QLDC	None	Low BCR – no trigger points have been identified	Local road, regional and state highway improvements	BCR = 0.2	$118m	Not required	Other activities – for later re-evaluation	Further investigation beyond 2030
Offline PT Service Improvements, including offline PT hubs	Waka Kotahi/ORC	Future proofed/protected corridor and terminal locations	Demand trigger – once on road capacity is reached. Anticipated beyond 2030	Public transport improvements	BCR = 1.7	$262m	Not required	Other activities – for later re-evaluation	Further investigation beyond 2030

[1] BCR dependent on nature of development – opportunity to deliver Transit Oriented Development adjacent to Stanley Street bus hub and adjacent regional/tourist coach facility on Athol Street

1.11 Funding

68. In addition to the committed funding already provided by the NZUP and CIP investments, costs for the preferred programme have been split based on the following assumptions:

- Infrastructure - the remaining town centre improvements, including the remaining stages of the arterial corridor will be funded through a combination of the National Land Transport Fund (NLTF) and local share (QLDC).
- Infrastructure – the improvements to Shotover and Stanley Street (SH6A), will be fully funded by Waka Kotahi through the NLTF.
- Infrastructure - The final stages of the town centre public transport hub development will be funded through a combination of the NLTF and QLDC funding.
- PT Services – The BRT services will be provided as part of the ORC continuous programme. A PT Services DBC (by ORC) will be required to confirm future PT Services funding.
- PT Services – the funding source for BRT fleet, stops, hubs and the depot will be confirmed through the PT services DBC, but are currently assumed to be fully funded through the NLTF.
- Travel behaviour change – A suite of behaviour change interventions will be provided. A Single Stage Business Case (by Waka Kotahi) will be required to further develop a Travel Demand Management Plan implementation programme.

69. Based on current estimates, the total anticipated cash flows for the investment proposal over the next three NLTP periods are summarised in Figure 10 and Figure 11 below (longer term interventions such as the third stage of the arterial corridor and off line PT are not included in these graphs). The costs will be spread over an extended period and are based on the implementation staging identified below. A breakdown of costs by funding sources is in Figure 12. Table 3 provides a summary of the activities for the next NLTP period. Further detail on funding is provided in the Financial Case and associated funding summary tables.

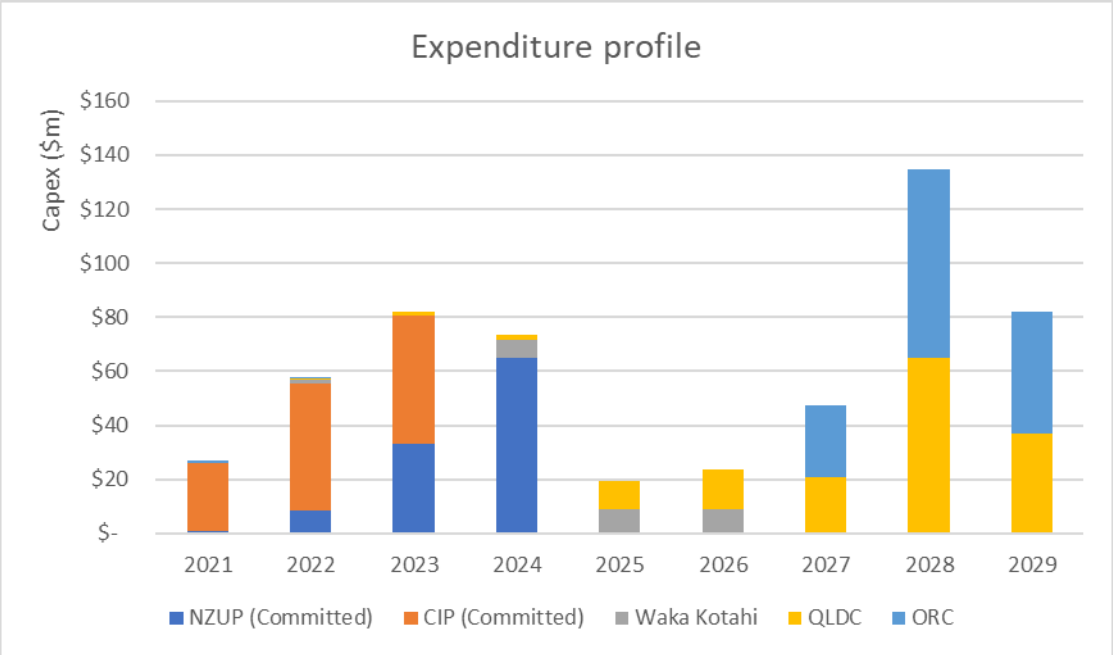

Figure 10: Expenditure Profile (capex)

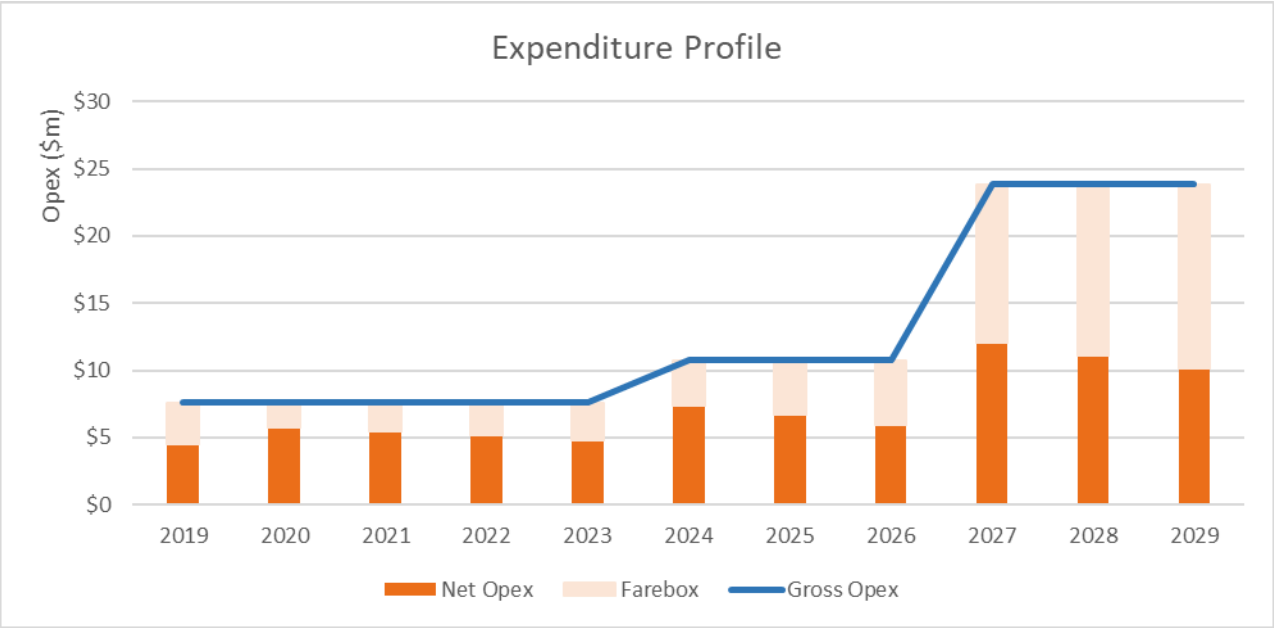

Figure 11: Expenditure Profile (opex)

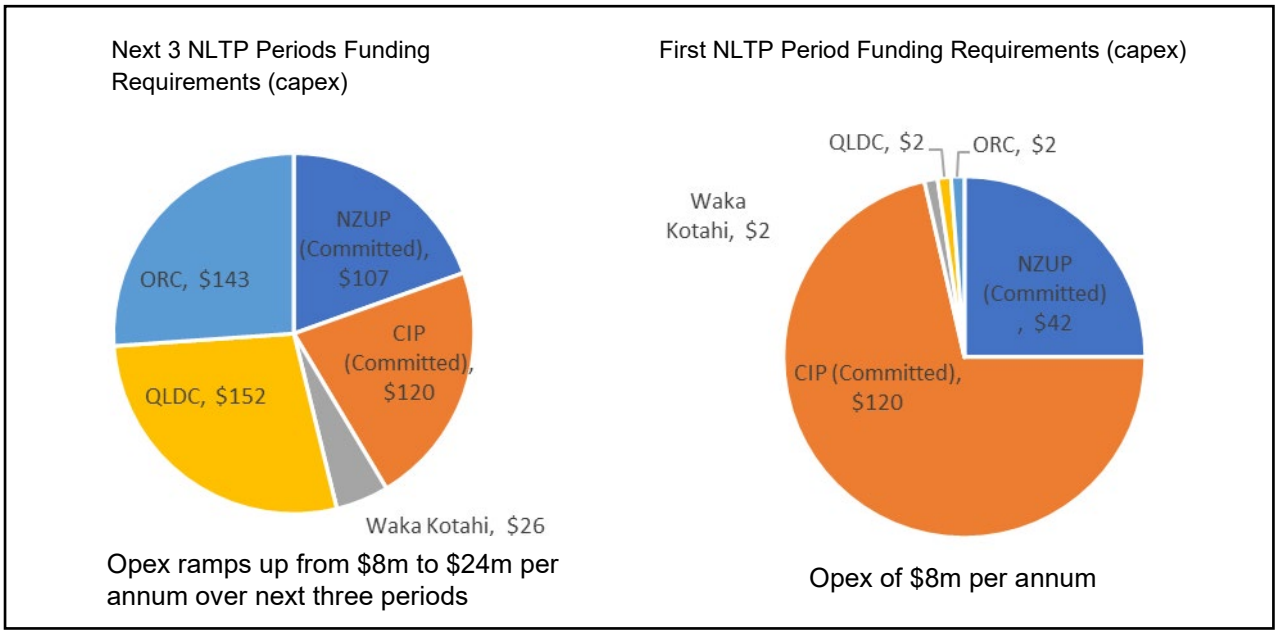

Figure 12: Funding by Source $m (Next 3 NLTP periods//21-24 period)

Table 3: Activities for the next NLTP period

Organisation	Element	Cost
Waka Kotahi	Travel Behaviour Change SSBC along with preliminary work on the Stanley Street and Shotover Street Improvements	$1,722,821
ORC (excluding opex)	PT Services and Infrastructure DBC	$1,500,000
QLDC	CIP obligations plus small scale changes in Old Frankton and preliminary wayfinding and Travel Behaviour Change interventions	$1,695,243 (plus CIP obligations)

1.12 Commercial Case

70. The implementation of the programme has two parts – those already committed and funded, and those that are not. Implementation decisions on parts that are funded (outside the direct control of this business case) may impact on how the remainder of the programme is delivered.

71. An Alliance approach has been agreed between Waka Kotahi and QLDC for construction. A tender will be let and a preferred supplier secured Quarter 4 2020.

72. Property purchase will be on the critical path for the delivery of the programme.

73. One of 37 consent locations in the NZUP package has been identified as complex, the remaining consents are split between having some challenges and being straight forward. No complex issues were identified in the strategies for the remaining programmes.

74. The focus, therefore, for the next NLTP period is the procurement of the next phases of critical investment investigation – specifically PT services and supporting infrastructure (hubs, depots and stops) and Travel Behaviour Change.

1.13 Management case

75. The NZUP and the CIP Stimulus Package elements are approved packages of work with allocated funding. An alliance is being established as the delivery vehicle for these elements.

76. The next stages of work from the business case are well understood. Appropriate governance, plans and processes are already in place to help ensure the successful delivery of the programme. The existing governance structure can progress through to the next stages of the business case.

77. The remainder of the preferred programme will be delivered as individual projects but remain subject to funding approval. The roles and responsibilities for the programme and the packages are clearly defined.

78. Interdependencies and remaining outstanding issues are clearly described, to ensure that they are carefully managed into the next stages. Understanding interdependencies within the programme and also with other projects that are delivered by the partners is a key issue for delivery.

79. The management case identifies the next stage for each of the projects, which organisation is responsible, the timing for delivery and approval/funding status. The case demonstrates that the programme can be reasonably delivered.

80. Quality assurance processes for the key items are clearly defined to ensure that quality continues, supported by change control approaches, and clear identification and treatment strategies for risks

81. The key risks have been identified as follows

    - That the funding available to implement business case recommendations, and the recommendations, do not align.
    - That property(ies) required are not available.
    - That decision making is poor or slow.
    - That decisions made for interface projects are inconsistent with business case recommendations (misalignment).
    - There is the threat that the projects lose community support due to timing delays or other priorities.
    - There are detail design changes required in later stages.

82. A benefits realisation plan sets a programme to monitor the key performance indicators to demonstrate that the investment objectives have been achieved.

1.14 Summary

83. Queenstown is growing rapidly. Without investment, the transport network will cease to operate effectively resulting in negative economic outcomes. The proposed interventions identified in these business cases maximise the benefits of the committed investment in the NZ Upgrade Programme projects, as well as the Crown Infrastructure Partners investment in town centre improvements and will deliver transformational change for Queenstown. The significance and effectiveness of these changes, as demonstrated through these business cases has been carefully tested through a robust review process. The analysis, process and design has been reviewed internally within the project team, externally by the Way 2 Go management team and designated external peer reviewers, and by an independent specialist challenge team.

84. These business cases present a compelling case for investment in a suite of multi modal transport interventions built around the three pillars of targeted infrastructure improvements, BRT services and behaviour change. Together, they will allow the Queenstown Lakes District to continue to grow sustainably and continue to be a highly desirable place to live, work and play.

85. The elements of the recommended programme implemented in the first ten years will deliver a BCR of 2.3, with the focus on PT services and supporting infrastructure. The full programme, to be implemented over a longer time period, delivers more benefits but at a much higher cost. The BCR of the full programme is 1.5.

86. In summary, the proposed interventions will deliver the following key benefits:

    - Corridor capacity increases in excess of 100% on the most constrained parts of the network will allow the Queenstown area to continue the grow and flourish as a tourist destination of international standing and a high quality place to live. This is estimated to unlock between $670m and $1.2 billion of economic growth.
    - The delivery of a BRT based transport system, coupled with travel demand management measures, will improve travel times across the network by over 20% relative to current bus travel times, along with significant reliability improvements.
    - The suite of improvements in the town centre will increase the quality of the built environment stimulating development.
    - Safety and access improvements across the network.

87. With the COVID-19 pandemic temporarily suppressing demand across the network, now is the time to act. There is an unprecedented opportunity to reset the approach to transport planning and operations in Queenstown in a way that will facilitate more sustainable levels of growth into the future.

1.15 Business Case Documentation

Table 4 below provides an outline of how the documentation that comprises this business case has been compiled and fits together.

Table 4: Business Case Documentation Configuration

Synopsis
- Business Case poster providing short summary of case for investment; how the programme developed, preferred programme (and sequence), outcomes and benefits of the programme.

Executive Summary Document
- High level summary
- Scale of problems and proposed interventions
- Summary table interventions, costs, responsible agency

Strategic Context
- Compelling case for change
- Highlights investment objectives
- Key issues to consider (inc COVID and other drivers)
- Effects if investment not forthcoming

Strategic Context Appendices
- Major influences
- Key Performance Indicators
- Engagement and Workshops

Options Assessment
- Assessment development process
- Long list options
- Technical investigations
- Short list options and evolution to emerging preference

Options Assessment Appendices
- Detail technical information inc modelling
- Engagement feedback and MCA notes

Preferred Option Assessment
- Detail on preferred configurations and recent influences (CIP, NZUP)
- Wider implications and issues
- Alignment within the programme and between strategies

Preferred Option Assessment Appendices
- Designs, cost estimates, design philosophy, design reports

Programme Sequencing
- Summary outline of interventions, costs, responsible agency, timing of interventions and dependencies

Economic Case
- Benefits and costs of programme
- Demonstrates contribution of individual elements

Economic Case Appendices
- Peer Review Feedback
- Details of approach to Wider Economic benefits

Financial Case
- Delivery costs of project components
- Funding sources for interventions
- Funding/cashflow/agency spreadsheet

Commercial Case
- How preferred programme to be implemented
- Risk allocations

Commercial Case Appendices
- Risk register
- Property Strategy (tbc)

Management Case
- Roles and responsibilities for delivering outcomes
- Governance and management through implementation

Assurance Reviews
- Assurance reviews covering economics, modelling, business case review in line with Waka Kotahi Peer Review Business Case guidelines and independent Quality Assurance Review