



QUEENSTOWN BUSINESS CASE

Preferred Option Assessment

STACEY LLOYD

16 NOVEMBER 2020

FINAL

Copyright information

Copyright ©. This copyright work is licensed under the Creative Commons Attribution 4.0 International licence. In essence, you are free to copy, distribute and adapt the work, as long as you attribute the work to the NZ Transport Agency and abide by the other licence terms. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

Disclaimer

The NZ Transport Agency has endeavoured to ensure material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. The NZ Transport Agency does not accept liability for any consequences arising from the use of this document. If the user of this document is unsure whether the material is correct, they should refer directly to the relevant legislation and contact the NZ Transport Agency.

More information

NZ Transport Agency

Published [month and year]

ISBN [number]

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>

Rev	Date	Description	Initials			
			Prepared by	Checked by	Reviewed by	Approved by
1	07/09/20	V1 (Provisional Draft)	SL	MS	AK	AK
2	07/10/20	Final Draft	SL	SC	AK	AN
3	12/11/20	Final	SL	SC	AK	AN



Contents

1	The preferred programme	5
1.1	Overview.....	5
1.2	CIP and NZUP funded interventions	9
1.3	Taking a staged approach.....	10
1.4	What, where and when.....	11
2	Wider transport strategies.....	18
2.1	Travel demand management	18
2.2	Intelligent Transport System (ITS)	23
2.3	Public transport	25
2.4	Urban realm improvements	26
2.5	Parking strategy	27
3	Meeting user needs.....	29
3.1	How are we delivering what our customers need?	29
3.2	How will it all work	30
4	Meeting the Investment Objectives	32
4.1	Alignment of the Programme.....	32
4.2	Alignment of the wider transport strategies.....	36
5	Assessment profile	40
5.1	Overview.....	40
5.2	Assessment profile	40
6	Wider project impacts.....	42
6.1	Social and environmental impact	42
6.2	Implementability	43
7	Summary	47

List of Tables

Table 1: Queenstown Programme Summary	8
Table 2: Phased roll out of the Queenstown Programme.....	10
Table 3: Ladies Mile corridor proposed interventions.....	12
Table 4: Frankton proposed interventions.....	12
Table 5: Frankton to Queenstown proposed interventions.....	14
Table 6: Queenstown Town Centre proposed interventions.....	16
Table 7: TDM programme for Queenstown	19
Table 8: Road typology attributes.....	26
Table 9: On-Street parking (Town Centre Core) provisional breakdown.....	28



Table 10: Programme Alignment vs Customer Needs	29
Table 11: F2Q Preferred Programme vs Investment Objectives	32
Table 12: Frankton and Ladies Mile Programme vs IO	33
Table 13: QTC Preferred Programme vs IO	35
Table 14: Travel Demand Strategy vs IO	36
Table 15: Intelligent Transport Strategy vs IO	37
Table 16: Public transport strategy vs IO	37
Table 17: Alignment of urban realm improvements vs investment objectives	39
Table 18: Alignment of parking strategy vs investment objectives	39
Table 19: Assessment profile using Investment Assessment Framework.....	40
Table 20: Social and environmental impacts - Frankton	42
Table 21: Social and environmental impacts - Frankton to Queenstown	42
Table 22: Social and environmental impacts - Queenstown Town Centre	43
Table 23: Planning considerations	44
Table 24: Property impacts	45

List of Figures

Figure 1: Queenstown Programme Intervention Overview Plan.....	6
Figure 2: Queenstown Programme Defining Elements	6
Figure 3: Queenstown Programme Key Initiatives	7
Figure 4: CIP and NZUP Funded Interventions	9
Figure 5: Ladies Mile proposed interventions location plan	11
Figure 6: Frankton proposed interventions location plan.....	12
Figure 7: Frankton to Queenstown corridor proposed interventions location plan	14
Figure 8: Queenstown town centre proposed interventions location plan	15
Figure 9: BRT Network Plan.....	26
Figure 10: How the town centre will work	31

1 THE PREFERRED PROGRAMME

This section builds on the optioneering work undertaken through the long list and short list assessment process described in the Options Assessment resulting in the emerging programme of implementations. Following stakeholder and public engagement, this emerging programme became the preferred programme of interventions.

This section outlines the benefits the programme will deliver. Definition is given around what is proposed, and how these individual elements will come together as part of a wider integrated transport strategy. Included are assessments of how well the proposed programme meets the Investment Objectives and how it delivers what the customers want.

This section is arranged in the following parts:

- Overview of the Programme, funding mechanism and phasing
- Details on wider transport strategy measures
- The alignment of the Programme with customer needs
- The alignment of the Programme with the Investment Objectives
- Assessment of the Programme against Government Policy Statement and Investment Assessment Framework
- Review of wider project impacts

1.1 Overview

The '**Queenstown Programme**' consists of a range of multi modal interventions which will improve transport capacity and efficiency within Queenstown and the wider Wakatipu basin.

The Queenstown Programme has been broken down into the following geographical areas:

- Queenstown Town Centre
- SH6A Corridor Improvements
- SH6 Ladies Mile Corridor Improvements
- Grant Road to Kawarau Falls Bridge Improvements, incorporating the Frankton bus hub.

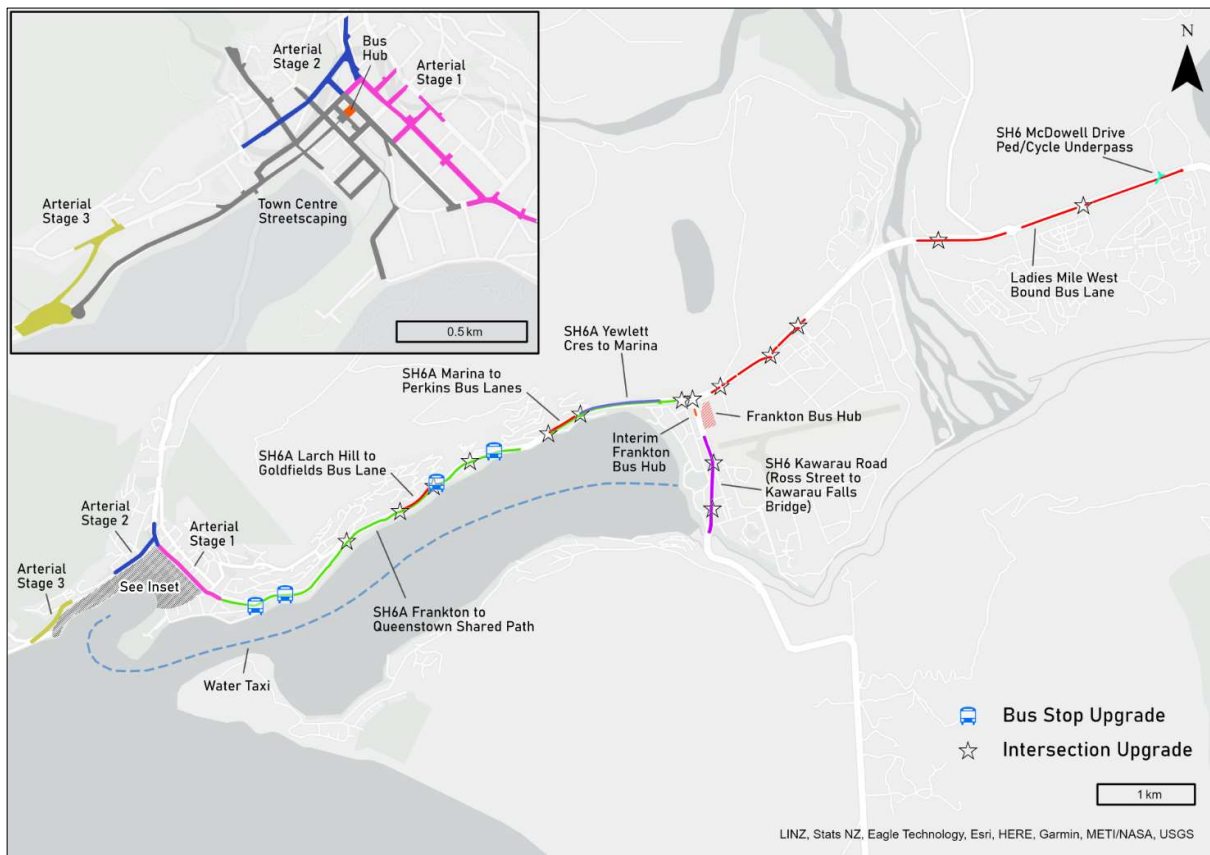


Figure 1: Queenstown Programme Intervention Overview Plan

The Queenstown Programme consists of four elements which define the levels of investment against a timeline of delivery. The figure below illustrates the four elements.

Committed Activities	Recommended Option	Supporting Activities	Other Activities
Activities which have funding committed and that provides benefits to the programme, eg. CIP and NZUP)	(Apply for funding for next phase in 21-24 NLTP)	(Re-evaluation in 24-27 or 27-30 NLTPs)	(Re-evaluation beyond 2030)

Figure 2: Queenstown Programme Defining Elements

The committed activities form the “Do-minimum” scenario. In terms of approval pathway there are no approvals required – only changes to scope, cost or programme.

The recommended option is the package of activities with complimentary outcomes that will likely receive investment priority and all funding partners will approve funding for their specific activities.

Independent activities that assist the outcomes of the recommended option but cannot be approved until 2024/27 or 2027/30 are supporting activities. Defined trigger points will have been identified for updating and re-evaluation.

Activities that do not directly assist the outcomes of the recommended option and unlikely to have an investment priority are considered possible long term measures where trigger points have not been identified.

1.1.1 Key features

The Queenstown Programme includes a wide range of initiatives focussed on shifting the current reliance on the private vehicle and providing users with route choice.

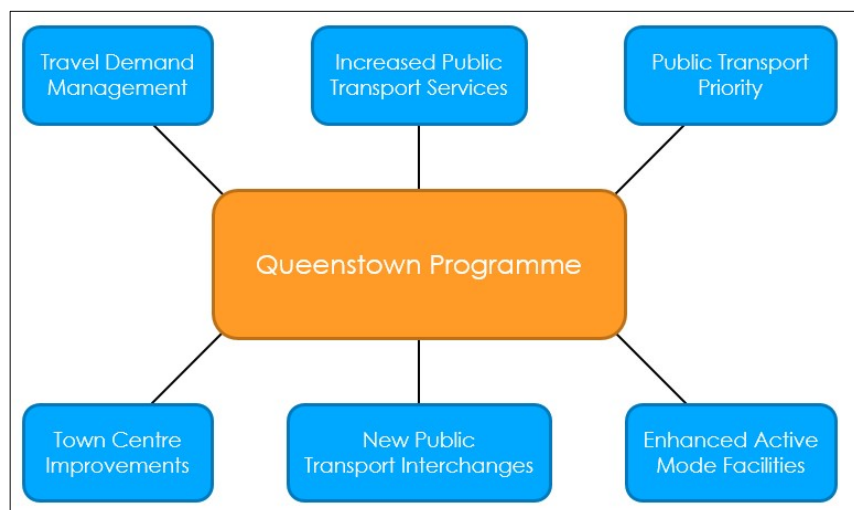
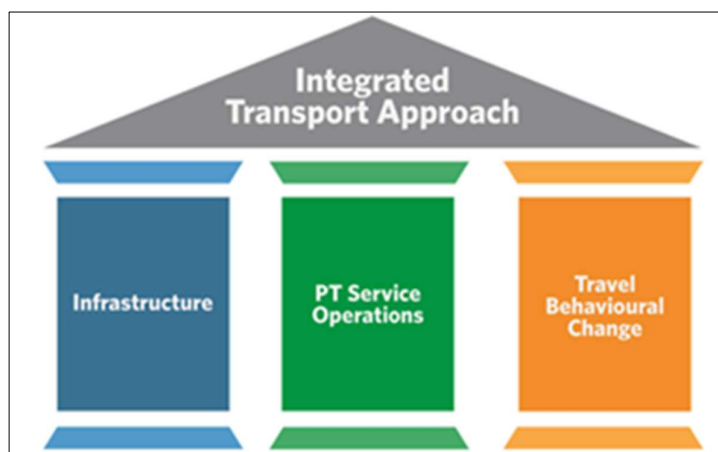


Figure 3: Queenstown Programme Key Initiatives

In order to successfully shift the reliance on private vehicle investment will need to be distributed into the key initiatives. This investment is identified through three pillars described below.



Undertaking urban realm improvements to the town centre (facilitated by the Crown Infrastructure Partner investment) and the interventions supporting in the active travel business case, physical improvements to SH6 and SH6A links and intersections facilitated by NZ Upgrade Programme investment all form a pillar of targeted infrastructure interventions.

A high quality Bus Rapid Transit (BRT) system providing increased public transport services, and improved public transport facilities (fleet and stops) form a pillar, leveraging off the public transport priority provided through the NZUP investment.

Travel Behaviour Change mechanisms comprise a suite of interventions that encourage the uptake of more sustainable transport modes through more proactive parking management and other Travel Demand Management tools.

1.1.2 Proposed interventions

An overview of the interventions is provided as a summary in Table 1. The interventions draw on the three pillars in order to develop and deliver a successful programme resulting in the required step change in travel

mode for Queenstown. This table includes elements that are assumed as part of the do minimum for completeness and because the development of these do minimum elements has been a core component of this business case project.

Table 1: Queenstown Programme Summary

Area	Intervention
Queenstown Town Centre	- New transport hub at Stanley Street, acting as the principal gateway into the town centre. - Arterials Stage 1, that reduces general traffic on Stanley Street. This will improve the pedestrian experience and safety and provide better connections between Project Manawa (the historic core of the town centre). - Further town centre upgrades to improve pedestrian and cyclist facilities and encourage a slower street environment creating a calmer and more enjoyable experience for everyone.
SH6A Corridor Improvements	- Targeted priority bus lanes implemented between the SH6/SH6A intersection and SH6A/Marina Drive intersection. This section of SH6A is expected to operate beyond capacity by 2028 (without intervention). - Improvements focuses on signalling key intersections which will have bus priority.
SH6 Ladies Mile Corridor Improvements	- Westbound bus lane along SH6 to Ladies Mile to enable buses to travel without disruption to the Shotover Bridge. Bus priority onto the bridge is being considered. - The Howards Drive roundabout will provide access and safety to the residential area of Lake Hayes Estate. Together with the pedestrian and cycling underpass, this will provide a safer crossing point that will improve access to the bus stops and enable future housing development. - An eastbound bus lane and signalling the existing roundabouts on SH6 will enable buses to travel unimpeded towards the Shotover Bridge. Bus priority onto the bridge is also being considered. The westbound direction along this section will also have a bus lane with priority through the intersections.
Grant Road to Kawarau Falls Bridge	- Improvements to the Frankton Bus Hub. - Improvements to control the volume of traffic that can access SH6A while ensuring there is an acceptable level of service for general traffic within and around the Frankton Flats. - SH6 connections to the east and to the south will include bus lanes in both directions.
Other Measures	- An enhanced bus fleet, improved bus stops and bus depot facilities to deliver higher capacity and higher frequency services. The fleet will be upgraded incrementally with a view to delivering highly efficient and environmentally friendly bi-articulated “trackless tram” style vehicles. - Travel demand management (including improved parking management). - Improved use of technology for transport network operations management and customer information. - Ferry services that complement the bus services. - Bus priority to improve travel times to the transport hub and better connections / facilities to encourage walking and cycling.
Future suite of interventions (longer term supporting measures)	- Arterials Stages 2 and 3 will further reduce traffic from the town centre and improve access to new development at Lakeview and Man Street and Brecon Street. - Further upgrades to the bus hubs in Frankton and Queenstown Town Centre. - Further upgrades to bus services to provide connector services to key residential and development areas. - Future offline public transport service, such as a gondola, that provides a further step change in capacity along with additional resilience and amenity benefits.

The following assessment is supplemented by information provided within the following appendices:

- **Appendix C01** - Preliminary concept design plans and renderings for proposed Queenstown Town Centre improvements
- **Appendix C02** - Preliminary concept design plans for proposed SH6 corridor improvements
- **Appendix C03** - Preliminary concept design plans for proposed Frankton/Ladies Mile improvements
- **Appendix C04** – Preliminary Design Philosophy Statement for Queenstown Town Centre
- **Appendix C05** – Preliminary Design Philosophy Statement for SH6 and Frankton/Ladies Mile

- **Appendix C06** – Preliminary Pavement Design report
- **Appendix C07** – Frankton Urban Development report
- **Appendix C08** – Safety in Design (SiD) register
- **Appendix C09** – Safe System Assessment reports

1.2 CIP and NZUP funded interventions

1.2.1 Crown Infrastructure Partner (CIP) funding

The Government has announced that funding is being made available through the Crown Infrastructure Fund stimulus package to support the delivery of preliminary town centre improvements. The Government will contribute \$85m to the Queenstown Town Centre streetscape project (\$35m) and Arterials Stage One (\$50m).

1.2.2 NZUP funding

“The New Zealand Upgrade Programme (NZUP) will be delivered over the next decade and provides the guaranteed, fully-funded pipeline of work that industry have been calling for. It will create 800 to 1000 direct new jobs in our civil construction industry as the first five projects get underway in the next 12 months, and 7000 to 9000 direct opportunities for our wider supply chain. This will give the sector the certainty to invest in the workforce, upskill and train more apprentices. I’m proud that our Government’s new investments in roads and rail will help future proof the economy, get our cities moving, and make our roads safer”.

Transport Minister’s Foreword – NZ Upgrade Programme Summary Document (2020)

Further to the CIP funding, an additional \$90m funding for infrastructure improvements in Queenstown has been secured through the NZUP. The NZUP funded projects covers SH6a corridor improvements, Ladies Mile corridor improvements and, SH6 Grant Road to Kawarau Falls improvements.

An overview of the CIP and NZUP funded interventions is provided as Figure 4.



Figure 4: CIP and NZUP Funded Interventions

The remainder of the preferred programme is unfunded and will continue along standard funding procedures seeking funding from the National Land Transport Fund (NLTF) through inclusion in the National Land Transport Programme (NLTP).

1.3 Taking a staged approach

The Queenstown Programme is a single programme that will be rolled out in several phases. This approach has been adopted because there is a need to align with the CIP and NZUP funding programmes (and limitations), and the staged approach reflects an optimal value for money proposition for the works.

The phased roll out of the Queenstown Programme is outlined in Table 2.

Table 2: Phased roll out of the Queenstown Programme

Phase	Intervention	Timing
Preferred Programme		
1	Do Minimum	2024
	Includes: - Queenstown Arterial - Stage One (funded through CIP) - ITS package - Town Centre Upgrades – Stage One. Includes Marine Parade, Rees Street, Beach Street and Brecon Street. - Travel Demand Management (TDM) package. - Public transport infrastructure (but not services) that is to be funded through the NZUP.	
2	NLTF Enabling Public Transport Services	2025 (and ongoing)
	Public transport service improvements which are funded through the NLTF: - Bus max core network - New rubber-tired bus fleet (as required to meet demand) - New bus depot - Bus priority lane enforcement	
3	Targeted improvements to Stanley Street and Shotover Street	2026
	This package focuses around streetscaping improvements for Shotover Street and Stanley Street. These upgrades will enable future stages to be introduced, including the upgraded bus hub. They will also pave the way for revocation of SH6A between Dublin Street and Steamer Wharf.	
4	Town Centre Upgrade – Stage Two	2027
	This captures the second stage of the town centre streetscaping enhancements to Camp Street, Earl Street, Church Street, Queenstown Mall, Cow Lane, Lake Esplanade and Ballarat Street	
5	Queenstown Arterial – Stage Two	2027
	Addition of the second stage of the Arterials providing a new link between Gorge Road and Hay Street. It also incorporates improvements to the Brecon Street steps.	
Future suite of improvements		
6	Upgrades to the Bus Hubs in Queenstown and Frankton	2029
	This includes the final stage of the upgrade to the QT Bus Hub. Includes trip end facilities integrated with Project Manawa. This constitutes a further upgrade to the Stanley Street facility and will feature the complete removal of general traffic and integration with a long distance/tourist coach facility on Athol Street. It also includes the final stage of the upgrade to the Frankton Bus Hub.	
7	Queenstown Arterial – Stage Three	2033+
	Addition of the third stage of the Arterials between Glasgow Street and the One Mile Roundabout	
8	Future offline public transport	2050+
	Road based public transport services will eventually reach capacity. Therefore a “future offline PT” package has been included to demonstrate the benefits associated with providing additional capacity on the Franklin to Queenstown corridor. This consists of a future off-line gondola connection.	

1.4 What, where and when

This section provides more detail on the specifics of the interventions summarised above (including those that are now funded and form the do minimum).

Option assessment has demonstrated the interventions needed to create a step change in transport use for Queenstown. Physical change to identified intersections and corridors are required to support the service improvements and behaviour change strategies. There are a number of elements to the infrastructure improvements. Town centre urban realm improvements improve the environment for pedestrians and cyclists and deliver economic benefits to local businesses. The town centre arterials work alongside the urban realm improvements by removing traffic and allowing space for the town centre to grow. Public transport priority measures provided through a high capacity, and high priority BRT spine that links the key development areas identified through the spatial planning process. Feeder networks of public transport and active modes are also provided. This section advises on the types of intervention proposed in the Programme, all of which build upon the three pillars that form the integrated transport approach for Queenstown.

1.4.1 Ladies Mile

The Ladies Mile corridor has been identified as a significant constraint on public transport uptake for a large proportion of Queenstown's population, thus affecting the capacity to achieve mode shift targets. In order to mitigate this, options were identified to prioritise bus movements along the corridor. There were also opportunities to improve safety at busy intersections and provide improved connectivity for active modes across the main highway. Details of the traffic modelling underpinning the proposed public transport interventions are located in Appendix B24 of the Options Assessment Appendices Package. The modelling results confirm an improved Ladies Mile corridor performance with the implementation of the proposed public transport infrastructure.

Figure 5 shows the indicative location of the proposed interventions on Ladies Mile.

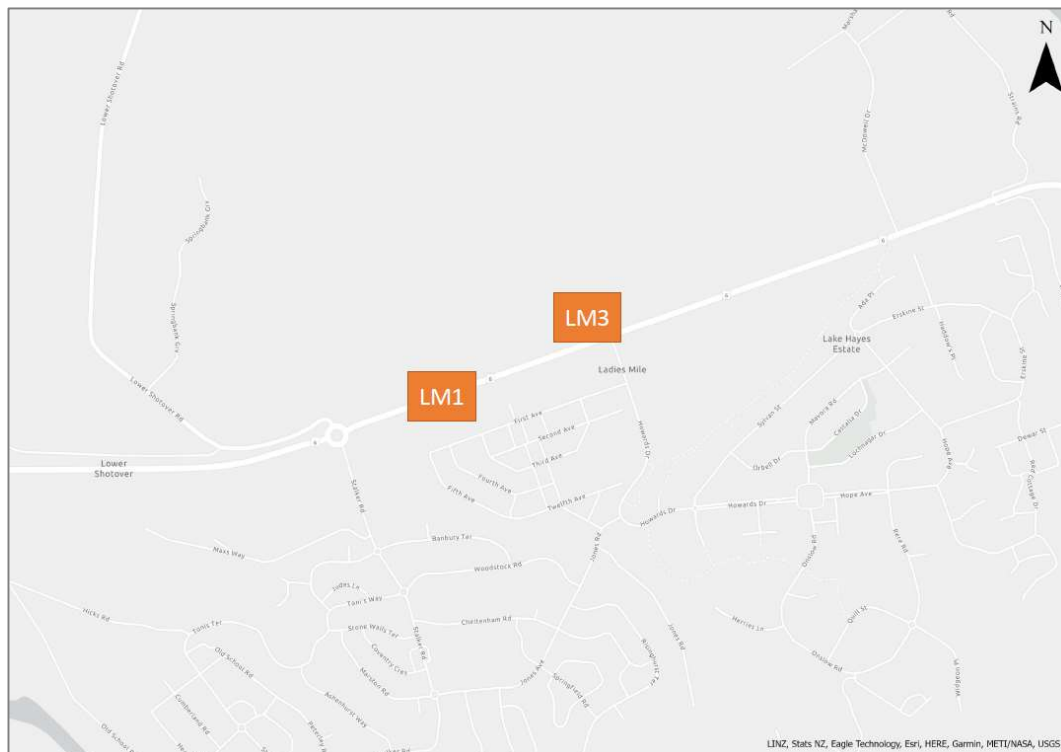


Figure 5: Ladies Mile proposed interventions location plan

Table 3 below outlines the intervention type and the proposed timing of implementation.

Table 3: Ladies Mile corridor proposed interventions

ID	Location	Intervention	Purpose	Phase
LM3	SH6 Howards Drive Roundabout	Roundabout	Four-leg roundabout at Howards Drive intersection to provide safe and efficient access to proposed park and ride site and land north of SH6 for proposed development.	2
LM1	Ladies Mile West Bound Bus Lane	Bus priority measure	Bus lane from Howards Drive to Shotover Bridge including alterations to SH6/Stalker Road roundabout provides bus route efficiency.	2

1.4.2 Frankton

Traffic modelling undertaken for the public transport network optioneering showed that, without intervention, the proposed reduction in westbound general traffic capacity on SH6A would have significant knock-on impacts on the Frankton network, to the extent of gridlock (or significant unmet travel demand).

As described in the options assessment report, much of the optioneering for Frankton was based on determining the best way of supporting an improved the public transport network. This largely revolved around balancing transport and urban design objectives for the key section of SH6 between Hawthorne Drive and SH6A. This section presents options assessed, including public transport priority, intersection improvements and active mode upgrades.



Figure 6: Frankton proposed interventions location plan

Table 4 below outlines the intervention type and the proposed timing of implementation.

Table 4: Frankton proposed interventions

ID	Location	Intervention	Purpose	Phase
FF4	SH6 Hansen Road	Signalise intersection	Signalised T-intersection at Joe O'Connell Drive (Events Centre) with offset signalised T intersection for Hansen	2

ID	Location	Intervention	Purpose	Phase
			Road with bus priority lanes in each direction between Grant Road and SH6/6A intersection.	
FF3	SH6/Joe O'Connell Drive Intersection		Signalised T intersection at Joe O'Connell Drive (Events Centre) with offset signalised T intersection for Hansen Road with bus priority lanes in each direction between Grant Road and SH6/6A intersection.	2
FF10	SH6/Humphrey Street		Signalise intersection future proofed for possible 4-leg intersection to connect to Boyes Crescent and down to the lake (ferry access). Signalised primarily for pedestrian and cycle access across SH6.	2
FF8	Humphrey Street Link (SH6 to Lucas Place)	New link	Connection through from Humphrey/Douglas Street intersection to Lucas Place (and potential future connection into airport). Repurpose Robertson Street as residential and active travel link.	2
FF9	SH6 Kawarau Road (Ross Street to Kawarau Falls Bridge)	Intersection upgrade	Modest intersection works, northbound bus lane and improved pedestrian/cycle crossings across SH6 to reduce severance.	2
FF/FQ	SH6/SH6A Intersection		This intersection is a key node within the regional road network, as the meeting point of the SH6 through Frankton and SH6A the main link into Queenstown Town Centre. The form of intersection chosen is the signalised intersection.	2
FF2A	Interim Frankton Bus Hub	PT hub	Update the current hub to improve capacity and efficiency.	2
FF2	Frankton Bus Hub		Multimodal transport hub at Frankton to cater for growing PT demand and operations including MRT. Includes for road layout changes, e.g. possible realignment of Kawarau Road, intersection with Ross St, etc.	6
FQ2	SH6A Yewlett Crescent to Marina	Active mode measure	On-road cycle lane eastbound 4.0m wide shared path on lakeside. Shared path connection through camping ground to Frankton Track to be provided.	2
FQ19	SH6A Frankton to Queenstown Shared Path		Widen existing shared path on lake side of SH6A to minimum desirable standard of 4.0m.	2
FF6	SH6 Hawthorne Drive Intersection	Signalise roundabout	Signalise existing roundabout with some moderate geometric changes, bus priority measures and consideration of 4th leg to Frankton Flats North rezoning. 4 lanes on SH6 between Hawthorne Drive and Grant Road will become 2 traffic lanes with 2 bus lanes (outside lanes).	2
FF5	SH6 Grant Road Intersection		Signalise existing roundabout with some moderate geometric changes and bus priority measures. 4 lanes on SH6 between Hawthorne Drive and Grant Road will become 2 traffic lanes with 2 bus lanes (outside lanes).	2
FF7	SH6 Frankton Ladies Mile to SH6/SH6A	Bus Priority measure	Bus priority lanes between Shotover Bridge and SH6/6A intersection improving PT efficiency. Pedestrian and cycle facilities improve active mode connectivity.	2

1.4.3 Frankton to Queenstown Corridor

The options assessment established the need to prioritise the passage of public transport vehicles along the Frankton to Queenstown corridor. As the corridor also provides access to an increasing number of hillside residential and accommodation developments, intersection control and active mode improvements are an integral part of the interventions. Providing signal control at regular intervals along SH6A enables Virtual Priority to be provided to public transport. The figure below illustrates the indicative location of interventions along the SH6A corridor.

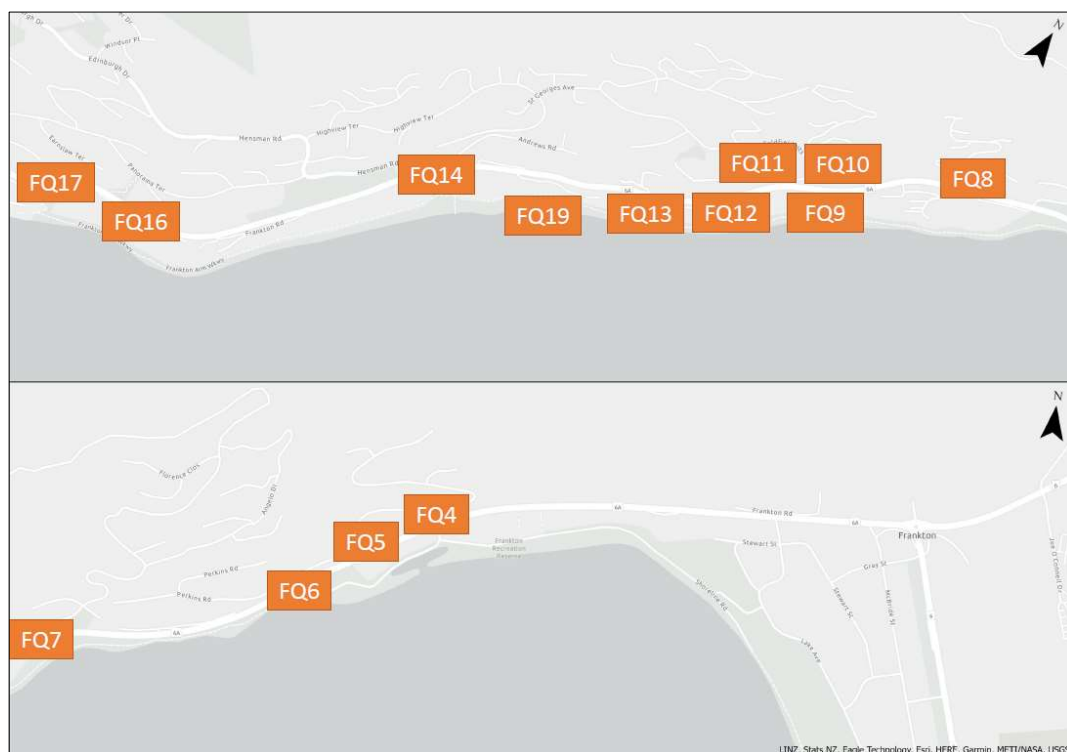


Figure 7: Frankton to Queenstown corridor proposed interventions location plan

Table 5 below outlines the intervention type and the proposed timing of implementation.

Table 5: Frankton to Queenstown proposed interventions

ID	Location	Intervention	Purpose	Phase
FQ4	SH6A Marina Heights/Sugar Lane Intersection	Signalise intersection	Improvements to existing intersection	2
FQ6	SH6A New Marina/Perkins Rd Intersection		New signalised intersection at west end of Marina. Allows for improved efficiency and reliability at the existing signalised Marina intersection, bus priority, ped/cycle access across SH6A and access from Perkins Road.	2
FQ9	SH6A Goldfield Heights Intersection		Signalise existing intersection to provide improved ped/cycle connectivity to PT, bus priority measures, access, and intersection safety.	2
FQ14	SH6A Hensman Road Intersection		Provides improved ped/cycle connectivity to PT, bus priority measures, access, and intersection safety.	2
FQ5	SH6A Marina to Perkins Bus Lanes	Bus priority measure	Eastbound and westbound bus lanes through Marina to Perkins Road widening improve PT efficiency	2
FQ12	SH6A Larch Hill to Goldfields Bus Lane		Eastbound bus lane between Larch Hill and Goldfield Heights improves service efficiency	2
FQ8	SH6A Battery Hill Intersection	Active mode measure	Signalised ped crossing to provide improved ped/cycle connectivity to PT and bus priority measures and some associated intersection control.	2

ID	Location	Intervention	Purpose	Phase
FQ13	SH6A Larch Hill Pedestrian Signals	Active mode measure	Signalised ped crossing to provide improved ped/cycle connectivity to PT and bus priority measures and some associated intersection control.	2
FQ19	SH6A Frankton to Queenstown Shared Path		Widen existing shared path on lake side of SH6A to minimum desirable standard of 4.0m.	2
FQ7	SH6A Middleton Road Eastbound Bus Stop	Bus Stop	New bus stop, eastbound just east of Middleton Road intersection.	2
FQ10	SH6A Goldfields Eastbound Bus Stop		Increase capacity of bus stop to cater for PT, regional, tourist and ski buses.	2
FQ16	SH6A Oaks Club Eastbound Bus Stop and Pedestrian Signals		New bus stop eastbound opposite Oaks Club improves connectivity.	2
FQ17	SH6A Pounamu Bus Stops		Expand existing eastbound bus stop at Pounamu Apartments improves connectivity.	2

1.4.4 Queenstown Town Centre

Figure 8 below provides an indicative location of the interventions for the Queenstown Town Centre.

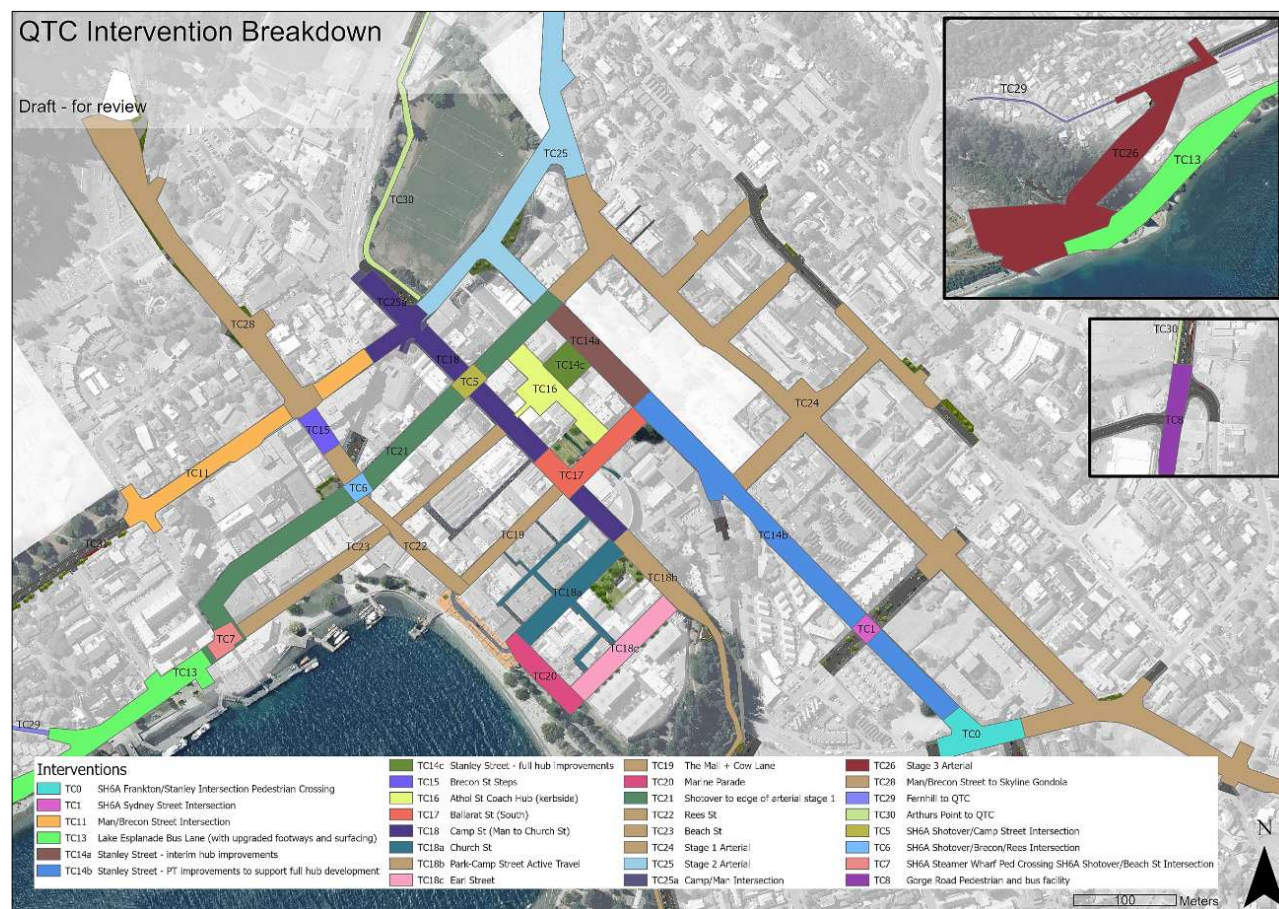


Figure 8: Queenstown town centre proposed interventions location plan

The individual interventions are summarised by type and purpose in Table 6.

Table 6: Queenstown Town Centre proposed interventions

ID	Location	Intervention	Purpose	Phase
TC7	Steamer Wharf Ped Crossing SH6A Shotover/Beach Street Intersection	Active mode measure	Provides a safer crossing environment at this constrained road configuration. Provides the opportunity to introduce a bus priority gate for inbound bus services along Lake Esplanade.	3
TC15	Brecon Street Steps		Provide a step free environment to improve access for pedestrian movement between Man St and Shotover St with an elevator. Removes barrier to movement currently presented to mobility impaired people.	5
TC0	SH6A Frankton/Stanley Intersection Pedestrian Crossing	Signalise intersection	Signalise existing intersection to provide improved ped/cycle connectivity to PT, bus priority measures, access, and intersection safety.	2
TC1	SH6A Sydney Street Intersection		Signalise existing intersection to provide improved ped/cycle connectivity to PT, bus priority measures, access, and intersection safety.	2
TC5	SH6A Shotover/Camp Street Intersection		Assists with developing the optimisation of town centre network and improves on pedestrian movement constraints.	3
TC6	SH6A Shotover/Brecon/Rees Intersection		Assists with developing the optimisation of town centre network and improves on pedestrian movement constraints.	3
TC10	Man/Camp/Memorial Streets Intersection		Included in the suite of interventions aimed at enhancing town centre optimisation.	5
TC11	Man/Brecon Street Intersection		Included in the suite of interventions aimed at enhancing town centre optimisation.	5
TC14A	Stanley Street Interim Public Transport Hub	PT Hub	Provides interchange facility for passengers with enhanced public realm complimenting environment.	1
TC14B	Stanley Street/SH improvements to support full PT hub		Provides interchange facility for passengers with enhanced public realm complimenting environment.	3
TC14C	Stanley Street Athol St Hub		Provides interchange facility for passengers with enhanced public realm complimenting environment.	6
TC16	Athol Street Coach Hub	Public realm improvements	Improve the streetscape and pedestrian / passenger facilities to support an enhanced regional public transport interchange.	6
TC17	Ballarat Street South	Public realm improvements	Upgraded pedestrian environment with shared space design principles allows street to function as one of the main pedestrian places within the town centre.	4
TC18	Camp Street (Man to Church Streets)		Provide carriageway narrowing to increase public realm.	4
TC18A	Church Street		Provides an enhanced pedestrian friendly domain and reduces the inference of	4

ID	Location	Intervention	Purpose	Phase
			vehicle dominated environment through introduction of shared space and removal of vehicle centric design components.	
TC27	Park – Camp Street Active Travel		Narrowing carriageway and rationalising parking increases streetscape. Provision of cycle facilities increases active travel opportunities.	4
TC18C	Earl Street		Alteration to the streetscape is desired to change the street perception from vehicle dominated parking street to valuable active mode connection to the waterfront.	4
TC19	The Mall and Cow Lane		New surfacing to harmonise with the new streetscape palette.	4
TC20	Marine Parade		This area forms an important part of the waterfront and creates a promenade. Adjustments are required at the interface with neighbouring streets to harmonise streetscape	1
TC21	Shotover to Arterial Stage 1		Upgrade public realm with carriageway narrowing, signals and pedestrian crossings.	1
TC22	Rees Street		The shared space concept and layout will reinforce a 'lane-ways' feel to this part of the town centre as it feeds into the main pedestrian core of the town centre.	1
TC23	Beach Street		Proposed shared space environment provides high quality pedestrian thoroughfare between the PT hub and Steamer Wharf. Provides setting to commercial and F&B establishments.	1
TC24	Arterials Stage 1 - Melbourne and Henry Street upgrade	New corridor	Provision of the arterial corridor will draw traffic from the town centre.	1
TC25	Arterials Stage 2 - Gorge Road to Hay Street link and upgrades	New corridor	Provision of the arterial corridor will draw traffic from the town centre.	5
TC26	Arterials Stage 3 - Thompson/Glasgow to One Mile Roundabout		Provision of the arterial corridor will draw traffic from the town centre	7

2 WIDER TRANSPORT STRATEGIES

The wider transport strategies support the three pillars by offering the means to effect travel behavioural change through travel demand management, development of urban realm improvements in the heart of Queenstown and high quality bus facilities and infrastructure.

2.1 Travel demand management

The purpose of the Queenstown Travel Demand Management (TDM) programme is to support a mode shift away from car driving to more sustainable and efficient transport such as walking, cycling, shared modes and public transport for visitors, tourists, residents, employees and commuters. Ultimately it seeks to achieve a culture change in how people think about travel and how they choose to travel.

The recommended TDM programme for Queenstown has four key areas of focus:

- Policy
- Travel planning and behaviour change
- Wayfinding improvements, and
- Setting up a Transport Management Association

2.1.1 Policy

New policy or changes will be needed, which could include:

- Requiring travel plans for large employers, key trip generators and new developments
- Car sharing strategies/incentives
- Initiatives that encourage a visitor mode shift like travel plans for popular destinations and a self-drive permit system
- Park and ride study
- Introducing charges for parking in areas that are presently free or cheap (where sustainable and more efficient transport choices are available)
- Road pricing may also be considered in the long term.

2.1.2 Travel planning and behaviour change initiatives

This would include local government led programmes such as:

- Enhancing the school travel plan programme
- Providing cycle and scooter training for adults and children
- Supporting the development of residential travel plans and encouraging travel behaviour change efforts through an award scheme and gamification.

2.1.3 Wayfinding improvements

With so many visitors each year, Queenstown needs to make it easy for people to find their way around. People use both physical signs and digital platforms to navigate. Physical wayfinding needs should be comprehensively identified by way of an audit and there is a need for a systematic, easy to use Wayfinding Game Plan. Digital and physical systems should map 'smooth walking/wheeling routes' that are accessible to wheelchair users or the best route for someone wheeling a pram or luggage.

2.1.4 Transport Management Association (TMA)

A TMA will be crucial to the success of a TDM programme in Queenstown. It formed a common feature of the international resort-based towns that were studied; it could also be key to the economic recovery for local

businesses because it will offer ways of collaborating on non-competitive areas to provide cost-efficient transport information and possibly services too. Interviews with businesses, residents' associations and other key stakeholders indicated a strong appetite to get involved in solving Queenstown's transport problems and for a TMA to lead and coordinate that effort. These discussions should be revisited in light of the global pandemic, but while priorities may have shifted, the need for a TMA remains. Areas of collaboration might include transport services for tourists (working together to provide transport instead of each operator providing their own service), luggage logistics and creating transport information for visitors.

A significant increase in pedestrian activity in the town centre is expected in the future (in part as a result of increased use of public transport) with less space for cars as streets are reprioritised for active modes, especially in the historic core.

TDM, along with infrastructure improvements can help create a shift away from car driving in and around the town centre through initiatives such as:

- Travel planning (workplaces, schools, and communities)
- Incentives for alternative modes
- Reduced car parking
- District plan parking rules – i.e. maximum parking requirements
- Increased parking pricing
- End of trip facilities for cycling
- Shared modes (e.g. shared bikes, e-bikes, and e-scooters)
- Greater emphasis and resources to create travel plans for events
- Improved information and wayfinding
- Coordination and collaboration with the tourism sector
- Freight management
- Dynamic ridesharing/carpooling and sharing of taxis and ride-hail services like Uber
- Bike share/E-bike share offering to connect key destinations and hotels

The above travel demand management initiatives will enable more efficient use of the available infrastructure, reduce car dependence, lower transport-related emissions and improve access to safe and sustainable transport choices in the town centre and for the F2Q corridor.

As part of Waka Kotahi's Mode Shift Plan for Queenstown a recommendation has been made to develop a Single Stage Business Case for TDM. This will sit alongside this business case and incorporates an implementation plan for the delivery of the TDM interventions.

The recommended programme of works for Travel Demand Management is summarised in the table below. It should be noted that Travel Demand Management measures will need to be maintained into the future. The indicative programme provided in the table represents the start points for these interventions. As demonstrated in the financial case, an ongoing budget will be required to maintain effective Travel Demand Management strategies.

Table 7: TDM programme for Queenstown

WBS #	TDM Programme	Quick win	Year 1	Year 2	Year 3	Organisation(s) responsible for delivery	Could be delivered by the TMA when established
1	Policy						
1.1	Region-wide strategies						

WBS #	TDM Programme	Quick win	Year 1	Year 2	Year 3	Organisation(s) responsible for delivery	Could be delivered by the TMA when established
1.1.1	Develop a sustainable transport vision for Queenstown					QLDC	
1.1.2	Car-free tourism					MBIE, DQ, QLDC, Waka Kotahi	
1.1.3	Mobility co-ops for outlying areas e.g. Arrowtown, Lake Hayes (research and blueprint)					QLDC, Waka Kotahi	
1.1.4	Car-share policy					QLDC	
1.2	Park and ride study					QLDC	
1.3	Require travel plans for new developments, large employers and significant trip generators					QLDC	
1.4	Require new developments to provide infrastructure that supports and encourages use of sustainable transport (new developments, outlying areas that generate trips into Queenstown)					QLDC	
1.5	Require travel plans for events as part of consent/traffic impact assessments					QLDC	
1.6	Charging for parking that is currently free or cheap					QLDC	
1.7	Freight management plan					QLDC	
1.8	TDM for emergencies (eg weather, crashes, natural disasters)					QLDC, ORC, Waka Kotahi, Civil Defence	
1.9	Car-free town centre and residential areas					QLDC	
1.10	Promote Queenstown as a Sustainable Tourism Destination (as options become available)					DQ	
1.11	Airport Access Study and travel plan					Queenstown Airport, QLDC	
1.12	Understand current levels of service for walking and cycling					QLDC	
1.13	Considering wider trips						
1.13.1	Advocate for travel plans for tourist destinations eg Routeburn Track, Milford Sound, Arrowtown, Wanaka, ski resorts, the Gondola					QLDC, ORC, Waka Kotahi	
1.13.2	Self-drive Permit Study (to protect sensitive areas)					MBIE, Waka Kotahi, MoT	
2	Travel planning and behaviour change initiatives						
2.1	Continue and enhance the school travel plan programme					QLDC, MoE	
2.2	Cycle/scooter training (adults and children)					QLDC, Police	

WBS #	TDM Programme	Quick win	Year 1	Year 2	Year 3	Organisation(s) responsible for delivery	Could be delivered by the TMA when established
2.3	Community travel plans (eg Lake Hayes, Shotover, Jacks Point)		☐	☐		QLDC, ORC	
2.4	Awards/rating scheme (eg cycle/scooter-friendly employer or destination, link in with existing reward schemes or rewards for mode-shift/ car free journeys)					QLDC	
2.5	Gamifying mode shift within travel plans (to encourage mode shift for residents and tourists)					QLDC, TMA	
3	Wayfinding improvements (digital and physical)						
3.1	Wayfinding and Information Provision Audit and Design Guide (including wayfinding for public transport, key destinations, facilities, routes, parking)					QLDC with TMA input, NZTA	
3.2	Smooth walking/wheeling routes and CCS disability action links					QLDC and TMA	
4	Transport Management Association (TMA)						
4.1	Set up						
4.1.1	Establish itself (mission, values, brand, set up Incorporated society, confirm board of directors)					TMA	
4.1.2	Write Business Plan and Funding Plan					TMA	
4.1.3	Agree membership fees and recruit members					TMA	
4.1.4	Establish potential revenue sources (Parking brokerage and event management plans)					TMA	
4.1.5	Recruit staff to run the TMA and its activities; includes office rent and annual insurance cost					TMA	
4.2	Action plan						
4.2.1	Develop Communication Plan (document co-ordination, communication channels, stakeholder matrix etc)					TMA	
4.2.2	Develop website and promotional material about the TMA itself to raise the profile of the TMA and communicate to people what it's going to do					TMA	
4.2.3	Fund raising (depending on the level of funding secured from Waka Kotahi)					TMA	
4.2.4	Co-ordinate submissions on on-going projects, policies and strategies					TMA	
4.3	Set up programmes						
4.3.1	Guaranteed ride home scheme					TMA	
4.3.2	Luggage logistics action plan					TMA	
4.3.3	Journey Planning App/Travel amalgamator					TMA	

WBS #	TDM Programme	Quick win	Year 1	Year 2	Year 3	Organisation(s) responsible for delivery	Could be delivered by the TMA when established
4.3.4	Set up bike share/E-bike share connecting key destinations and hotels					QLDC, TMA	
4.3.5	Dynamic ridesharing/carpooling					TMA	
4.3.6	Mobility Lab (based on Arlington, Virginia, USA)					TMA	
4.3.7	Identify sustainable transport workforce deficits and establish programmes to run the sustainable transport sector eg bicycle technician, e-bike and e-scooter servicing, sustainable transport ambassador programmes, cycle skills training, bus driver workforce planning and development					TMA	
4.4	<i>Documenting the data gaps</i>						
4.4.1	Work with partners and confirm what information the businesses/ member organisations are willing to share; identify what data should be collected					TMA	
4.4.2	Create an inventory of existing bus and shuttle services; understand current situation; agree if and how to collaborate; identify potential partnerships; make it happen					TMA	
4.4.3	Set up events register for Queenstown (for event travel demand management)					TMA	
4.4.4	Data inventory and gap analysis (establish what data is available and where there are gaps in the data)					TMA	
4.4.5	Understand and establish a register of transport jobs in Queenstown (to identify gaps)					TMA	
4.5	<i>Better information provision</i>						
4.5.1	Collate and communicate transport information on getting around without a car through the TMA website (using tools like the Bus map movie and travel scenarios)					TMA	
4.5.2	Marketing of car-free holidays (information to support this on the TMA website)					TMA, DQ	
4.6	<i>Advocacy</i>						
4.6.1	Advocate for/ support enhanced public transport service to the airport					TMA	
4.6.2	Advocate for changes to bus timetables/routes to better meet the needs of users					TMA	
4.6.3	Gain commitment from the businesses to develop their own travel plans/ work on travel plan activities together through the TMA					TMA	
4.6.4	Advocate for/support high quality branded bus stops (eg iconic bus stops)					TMA	

WBS #	TDM Programme	Quick win	Year 1	Year 2	Year 3	Organisation(s) responsible for delivery	Could be delivered by the TMA when established
4.6.5	Advocate for inclusion of bike technicians and others in the Immigration NZ skills shortage visa category to support sustainable transport					TMA	
4.6.6	Gain commitment from the tourism industry in the delivery of the plan (DQ, travel agents, tour providers)					TMA, DQ, MBIE	
4.6.7	Advocate for improved access to bus/ferry ticketing					ORC, TMA	
4.6.8	Advocate for supplier contracts to be reviewed and updated to include metrics to capture quality of service					TMA, ORC	
4.6.9	Advocate for Queenstown to adopt the Sustainable Travel Town vision					TMA	
4.6.10	Advocate for Queenstown to become a Blue Zone					TMA, DHB	

The TDM Technical Note is provided as Appendix C10.

2.2 Intelligent Transport System (ITS)

In addition to the physical interventions that have been proposed, an effective transport management approach is required to optimise the network in the short term, as well as maximise the benefit of the planned interventions in the longer term. This management function can be effectively achieved through the comprehensive implementation of an Intelligent Transportation System (ITS). A Technical Note (36) detailing the application of ITS in Queenstown is located in Appendix C11.

An ITS can achieve efficiency, convenience, safety, and environmental benefits by optimising the traffic system in real time and providing information to road users.

Key elements of the proposed ITS system include:

- Transport Operations Centre
- Variable Message Signs
- Advanced parking management

2.2.1 Transport Operations Centre

Transport Operations Centres (TOCs) are used to manage transport networks. They have a number of functions, covering Network Optimisation (monitoring and managing network activity), Real Time Information (providing up to date traffic information to users through road assets), Incident Management and ensuring Planned Network activities are delivered effectively and efficiently.

Currently, the Wellington TOC (WTOC) is responsible for signal operations across 80% of New Zealand, including Queenstown. Due to the significant costs of running a TOC, it is recommended that the WTOC continues to oversee Queenstown traffic operations. This maintains economy of scale and helps to ensure there are qualified and trained staff available at all times. The expansion of TOC activities in Queenstown will therefore provide opportunities to improve network management such as through implementing virtual priority.

Virtual priority involves detecting certain modes or routes and enabling additional green signal time for these vehicles. As part of the Frankton to Queenstown State Highway 6A upgrades, virtual priority has been recommended for key intersections such as Marina Drive.

2.2.2 Variable Message Signage

Variable Message Signage (VMS) is a key element of ITS as they are used to provide real time and/or navigational advice to drivers. This can include information on network delays and incident reporting, travel time advisory and encouraging people to use alternative routes or modes such as public transport. To help ensure inbound drivers are suitably informed, it is proposed that VMS signs are installed on the key approaches to the town centre, for example on the approach to Ladies Mile, to aid drivers in choosing the best travel options such as to take park and ride.

2.2.3 Advanced Parking Management

To achieve the mode shift targets and support the investment objectives of the Business Cases, activation of the public realm in the town centre is a fundamental element. This will be realised through expanding and improving pedestrian areas however this will have an impact to on-street parking. It is important therefore that the remaining available parking is well managed and prioritised for preferred usage.

Dynamic parking management can achieve this through using a combination of infrastructure and technology, which can include sensors (in-pavement or mounted) and VMS supported by appropriate enforcement. The outcome of this process would be to ensure drivers are aware of parking availability near their destination, informed of the choices available and able to park without unnecessary delay.

2.2.4 Recommended ITS technologies for implementation

SCATS implementation

WTOC already uses SCATS for signals in Queenstown and it is understood that there is sufficient capacity to widen the scope of SCATS in Queenstown.

Currently, SCATS detect vehicles at the limit line of approaches to signalised intersections. There is opportunity to improve this using the SCATS Priority Engine software package, which can enable modal optimisation for public transport, emergency vehicles and freight vehicles. SCATS Priority Engine can improve timetable reliability and reduce journey time for public transport, reduce response time in emergencies and prioritise freight in off-peak periods. Additional on-street infrastructure and GPS capability would be required to enable detection of vehicles by type or lane. This may include induction loops on intersection approaches, infrared detectors and spatially referenced lane marking. For example, GPS beacons can be installed in buses, detectors in the network can identify buses in advance of a signalised intersection and the signal timing can be optimised to prevent buses from having to stop at the intersection.

The use of the Priority Engine Software is considered essential for the delivery of the public transport priority along SH6A to maintain service reliability and an enhanced customer experience. It should be implemented at all signalised intersections that support public transport movements throughout the network, and any other locations where demand, such as high freight movements, would be of benefit. The 'virtual' priority that the system would afford has been included in the modelling scenarios as part of the business case assessment.

Variable Message Signage

While relocatable VMS signs have been deployed previously in Queenstown to assist with traffic management, it is recommended, permanent, fixed signs be introduced at appropriate locations throughout the network.

Initial locations for the introduction of permanent VMS signs include:

- State Highway 6 on the approach to the Park and Ride locations
- State Highway 6 on the approach to the SH6/SH6A intersection (Frankton PT Hub)
- State Highway 6A on the approach to the town centre
- Gorge Road/Hallenstein Street (southbound)

It is recommended that any VMS systems considered for deployment be scoped in conjunction with the operating TOC as system integration will be essential e.g. Dynac drivers for SCATS.

Advanced parking and kerbside management

To achieve mode shift and support the investment objectives of the Business Cases, the significant activation of the public realm is proposed. This involves expanding and improving pedestrian areas, which requires a reduction in on-street parking. It is important that the remaining parking is managed to prioritise usage, for example for deliveries/loading and mobility parking. To achieve this, smart parking management is required.

Parking management, alongside dynamic kerbside, systems typically comprise a combination of infrastructure and technology, which can include sensors (in-pavement or pole mounted), variable message signs, dynamic pricing, and enforcement cameras and can include customer focused applications for mobile devices.

Due to the compact nature of the town centre, as well as the proposed overall reduction in on-street parking, it will be feasible to provide complete coverage of the historic core and any adjacent areas depending on identified demand as the town centre proposals are implemented. The overall objective would be to realise the aims of the 2019 Queenstown Parking Strategy and ensure parking remains at optimal occupancy levels for each area.

2.3 Public transport

Meeting public transport demand will be undertaken through road based public transport priority, expansion of the bus network and an upgrade of the bus fleet. This will result in the delivery of a comprehensive Bus Rapid Transit (BRT) network for the Wakatipu Basin.

The strategy is for a road-based solution with vehicles increasing in scale over time from the current single-decker bus fleet to environmentally friendly (electric or hybrid) bi-articulated vehicles (or Trackless Trams). The network is building on the “Bus Max” concept (outlined in the High Capacity Public Transport (HCPT) Technical Note – see Appendix C12) and is aimed at delivering a step change in high quality, high capacity services.

The proposed BRT network for Queenstown is made up of five core bus routes and one ferry route, as shown in Figure 9.

- Sunshine Bay to Lake Hayes Estate via Queenstown Town Centre and Frankton.
- Arthurs Point to Arrowtown via Queenstown Town Centre and Frankton.
- Queenstown Town Centre to Jacks Point via Frankton, Queenstown Airport and Remarkables Park.
- Queenstown Town Centre to Kelvin Heights Ferry. This will link to bus services to Quail Rise via Frankton and Frankton Flats.
- Frankton Circular – linking all parts of Frankton to each other and the Frankton Hub.

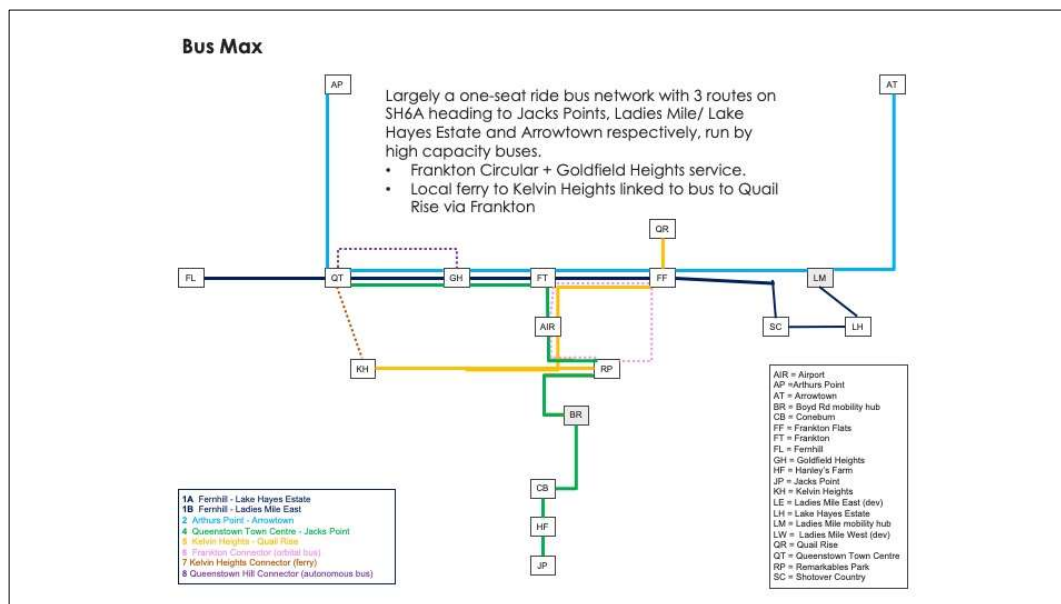


Figure 9: BRT Network Plan

The core network could be augmented by additional feeder services providing improved connectivity to key residential areas including the Queenstown Hill and Lakeview.

The public transport network improvements would enable the benefits of the NZUP investment in supportive infrastructure to last for a predicted 30 years as well as providing attractive sustainable travel options to current and planned growth areas over the same period. These benefits start to be realised from the first day of the NZUP programme roll-out but endure over this extended time. This will require a staged fleet upgrade over time and future investment in new depot facilities to provide for the expanded fleet.

2.4 Urban realm improvements

In order to support the targeted shift in travel mode in Queenstown, which forms the basis for this business case, opportunities to develop a town centre core which is high quality and active mode focussed has formed an integral component of the future streetscape. A movement and place framework has been developed for the Queenstown streets to characterise typologies that reflect the desired streetscape environment, form, and function. The forms are defined by whether provision for public transport forms a prime component of the street or whether increased opportunities develop placemaking and movement areas suited to a human scale are available as a result of the expected mode shift and a retraction in car dominance in the town centre.

Three road typologies have been established and are summarised in the table below:

Table 8: Road typology attributes

Link Type	Mode Priority	Attributes	Target Traffic Speed
Primary	1. Pedestrian 2. Cyclist 3. Local Access	• Enhanced footpaths through shared spaces • Limited, or no, on-street parking • Loading and mobility bays • Enhanced street amenity • Dedicated space, e.g. outdoor dining • On-street cycle provision with sharrow markings	<30 km/h
Secondary	1. PT 2. Pedestrian 3. Cyclist 4. Local Access 5. Commercial Vehicles and taxis	• Standard or extended footpath widths • build-outs at crossings and mid-block • Segregated and unsegregated on-street cycle provision • Enhanced street amenity	30 - 40 km/h

Link Type	Mode Priority	Attributes	Target Traffic Speed
Tertiary	- Through traffic - Freight - Commercial vehicles - Higher Movement Function	- Standard width footpaths - Efficient vehicle through movement - Segregated and unsegregated on-street cycle provision - High level of access - Parking in accordance with parking strategy	<50 km/h

Improvements to pedestrian movement through intersections within the town centre form part of the enhancement to the public realm. This will be realised using 'Barnes Dance' scramble style pedestrian crossings at signalised intersections and raised tables / kerb buildouts where practical.

The proposed urban realm improvements are not just concentrated in the Queenstown core. Lake Esplanade is a low speed link to the town centre and is ideally suited to streetscape improvements. Two options were developed which focussed on the corridor having enhanced hard and soft landscaping and streetscape provision, and a public transport centric option offering an in-bound bus lane. The option chosen was the enhanced streetscape version.

Further detail on the urban realm improvements and design rationale for the town centre, including the arterials, can be found in Appendix C04.

2.5 Parking strategy

As part of the business case process, QLDC developed a comprehensive parking strategy. This strategy aims to meet the following key objectives:

- Support place-making, amenity, and good urban design outcomes
- Facilitate a transformational shift from private vehicle travel to public transport, walking and cycling
- Actively manage parking supply and demand to support efficient and safe use of the transport system
- Support the economic development of Queenstown
- Promote the use of emerging technologies to manage demand and minimise the impact of the transport system.

The philosophy behind the strategy is to manage parking demand, rather than increase supply, to support the aim of achieving a 40% mode for public and active transport modes by 2028 and a 60% mode shift by 2048.

Following the development of the movement and place framework for the Queenstown Town Centre and the applicable road typologies, a design workshop was held to produce concept designs of the streets in the direct town centre.

The concept designs were developed to reflect not only the movement and place framework, but the objectives of the Queenstown Town Centre DBC and the Queenstown Parking Strategy. The design workshop identified that parking space in the Historic Core and wider town centre environment required rationalisation to better meet the overall expected demand of the users of this space, with some parking lost to urban realm improvements, and active travel network upgrades.

A summary of the proposed parking reductions in the immediate town centre area is shown in Table 9. The breakdown includes the estimated parking reductions from the Queenstown Town Centre Masterplan, as well as the proposed reductions from the DBC. The estimated parking reductions from the QTC Masterplan are assumed to be an under-estimation, as parking reductions in some areas had not being determined within the masterplan detail, for instance Shotover Street. Therefore, any reduction over that because of changes stemming from the DBC are likely to be minimal in practise.

The current town centre designs are also subject to change and further design refinement which is expected as part of the pre-implementation engagement with affected stakeholders.

The breakdown also does not include existing and proposed public off-street parking facilities. The proposed parking inventory changes by street are included in Appendix B17.

Table 9: On-Street parking (Town Centre Core) provisional breakdown

Location	Parking Supply	Parking Reduction
Existing Inventory	472	
QTC Masterplan proposed reduction	-	-247
Additional reduction from DBC	-	-78
Proposed Provision (QTC DBC)	147	-325

Concept designs have been developed to reflect not only the movement and place framework, but the objectives of the Queenstown Town Centre DBC and the Queenstown Parking Strategy. These are provided as Appendix C01.

3 MEETING USER NEEDS

3.1 How are we delivering what our customers need?

Table 10 outlines how the preferred programme will meet customer needs.

Table 10: Programme Alignment vs Customer Needs

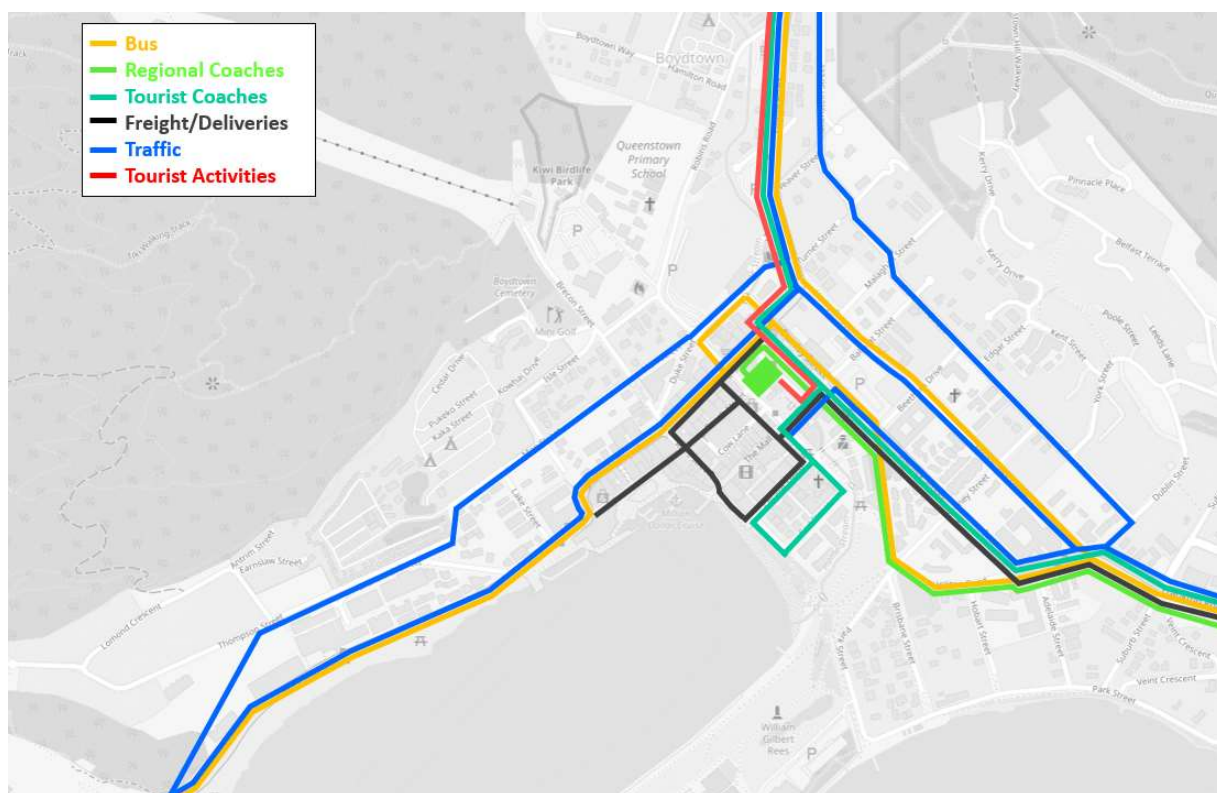
User	What do people want or need?	What will the programme deliver?
Local drivers	- Travel choice - To live in a town with high place values, a strong sense of belonging and clean air - Quick and reliable access to workplaces, shopping, healthcare, and recreation. - Within the Queenstown Town Centre people mostly want to see improvement in driving and walking experiences¹. - Within the F2Q corridor people mostly want to see improvement in public transport and cycling experiences.	Travel choice is being provided by delivering a step change in public transport through the BRT network. By 2028 this is expected to deliver 40% of trips by alternative modes. This increases to 60% by 2048. An enhanced PT network will be supported by new high-quality PT vehicles, hubs and stops. There is potential for an offline high capacity public transport option to be introduced in the long term to help achieve these targets. Transport Demand Management measures will also help achieve the modal share targets such as travel planning and behaviour change initiatives. Enhanced walking and cycling networks (discussed below) will also mean that more residents can choose to take a mode of transport other than the car. These elements come together to provide better travel choice which in turn will improve travel time reliability and the number of people who can get through SH6A corridor during peak times.
Pedestrians	- People have a strong desire to walk to work, education, shopping, and healthcare but are put off by a lack of safe crossing points and a limited network of connected walkways. - As walking forms part of every journey, safe and direct walking routes need to connect with parking buildings and bus stops.	In supporting both the Queenstown Lakes District Spatial Plan and expected pedestrian demand, the following measures are included: - Priority pedestrian crossings throughout town centre core. - Wider footpaths generally - Enhanced urban comfort (seating etc.) and street amenity (planting etc.). - Enhanced open spaces. Safe crossing points are also being introduced within Frankton and across SH6A.
Cyclists	- Safe and quick access between Frankton and Queenstown - Safe and convenient access across SH6A - Visually appealing routes - The needs for recreational and commuter cyclists considered	The Wakatipu Active Travel Network (WATN) identified three primary active travel routes heading into the town centre: - Route 3: Frankton to Queenstown (from the east) - Route 5: Arthurs Point to Queenstown (from the north) - Route 6: Fernhill to Queenstown (from the south) The WATN proposals and designs have been amalgamated into the Queenstown Programme, unless they conflicted with wider design requirements.

¹ Queenstown Transport Engagement Feb 2019 – Community Feedback

User	What do people want or need?	What will the programme deliver?
Visitors (international and domestic)	• Clarity around the where they can access and use the active and public transport networks. • More transport choices. • Stress-free and enjoyable experiences. • Reliable journey time to the airport. • Parking choices in the town centre	International tourists will be provided with: • Improved wayfinding • Better transport choices • More pedestrian focused streets in the town centre with high visual appeal. • Faster and more reliable travel times. • Regarding parking - the overriding philosophy is to manage demand rather than increase supply. Emerging technologies will be used to improve the responsiveness of parking management, and to provide a better level of service to the customer.
Seasonal workers	• Cheap and reliable bus services • Active travel choices	• Seasonal workers will benefit from a much-enhanced public transport network and new active mode connections. • Urban realm improvements will also make their experience of living and working in Queenstown more enjoyable.
Commercial and freight	• Reliable journey times so freight operators can complete all their deliveries during the day. • A high proportion of the workforce is made up of 'tradies', who need to carry tools and therefore cannot use public transport or active modes. • Ease of access to businesses in the town centre.	• Continued prioritisation of facilities and parking freight/servicing where possible. • Travel time reliability improvements, particularly on the core journey between Frankton and Queenstown.
Tour operators	• Tour operators want reliable travel times and convenient (and safe) places to pick up customers.	The Queenstown Programme proposes a reduction in town centre coach parking because of to a desire to align with the WATN business case and the redevelopment of the Boundary Street carpark. To meet the needs of coach operators: • Existing coach parking will be managed to optimise its use through appropriate time restrictions and enforcement encouraging short pick-up and drop off trips only. • Improved coach management through the proposed hubs in Queenstown and Frankton. • Additional day and overnight coach parking will be provided outside of the town centre to address the loss of coach parking from Boundary Street and Brecon Street. Overnight coach parking should be connected to the town by shuttle buses (in the interim) and public transport in the future.
Taxis	Taxi and ride share operators want safe convenient places to pick up customers.	The programme includes the development of complementary provisions that support QLDC's SPSV objectives.

3.2 How will it all work

Figure 10 provides a simplified Network Operating Style (NOF) map for the Queenstown Town Centre which shows how the transport network will work, and the key routes for each transport mode.



4 MEETING THE INVESTMENT OBJECTIVES

This section outlines the strength of the alignment of various components of the Queenstown Programme against the investment objectives. The combined Investment Objectives were developed from a review of the desired outcomes of the problem statements relating to efficiency, amenity, safety, and resilience as agreed by the key project stakeholders during the third workshop.

The key performance indicators (KPIs), against which the success of the options will be assessed are outlined within the tables of this section.

The assessment has been broken down into:

- Alignment of the individual F2Q, QTC and Frankton/Ladies Mile packages
- Alignment of the overarching strategies for public transport, parking, travel demand, ITS, and urban realm improvements.

Demonstration of alignment with the investment objectives confirms the work undertaken to develop the interventions and mechanisms for travel behaviour change contained within the three pillars address the transport issues facing Queenstown.

4.1 Alignment of the Programme

4.1.1 Frankton to Queenstown

Table 11 provides a summary of the way the interventions within the Frankton to Queenstown corridor align with the Investment Objectives. A range of Technical Notes have been produced to provide a quantification of the benefits (modelling output, travel time savings, improved amenity etc) of the Programme. These are Technical Note 37 which is located in the Strategic Case Appendices pack (see Appendix A01), and Technical Note 35, Technical Note 38, Technical Note 39, and Technical Note 42 which are located in the Options Assessment Appendices pack (see Appendix B13, B14, B11 and B08 respectively). A road transport emissions assessment has also been undertaken to estimate and forecast annual carbon emissions after the implementation of the Preferred Programme. Emissions within the District are forecast to reduce by 15% between 2018 and 2048 despite an anticipated 89% increase in vehicle kilometres travelled. A detailed summary of the assessment is located in Appendix C17 of this report.

Table 11: F2Q Preferred Programme vs Investment Objectives

Investment objective	Key Performance Indicators	Feature		
		Signalise Key Intersections	Upgrade and Provide New Bus Stops and Bus Lanes	Upgrade Active Mode Links and Crossings
Efficiency Provide more efficient and reliable access for people and goods that: • sustainably manages high growth • reduces reliance on private vehicle travel • Enable enhanced land use	Improved travel time reliability Increased system occupancy Increased PT catchment Improved walking and cycling LOS	Enables Virtual Priority option by providing a corridor of coordinated signals Reduces general traffic throughput on the highway but improves reliability while prioritising bus movement, encouraging uptake of public transport Ensures access to and from side roads and land use on both sides of SH6A Provides additional access points to the PT network Improves crossing facilities	Improves access and visibility of public transport at future development sites and in areas of high density such as hotels, thus encouraging mode shift Prioritises buses through bottlenecks, improving travel times and reliability Improves egress times from bus stops, improving travel times and reliability	Provides new on road cycling corridor to augment the Frankton Track. Improves crossing opportunities for pedestrians and cyclists along the corridor. Encourages reduction in private car use, which enables car parking and road space in the town centre to be repurposed for more sustainable uses

Investment objective	Key Performance Indicators	Feature		
		Signalise Key Intersections	Upgrade and Provide New Bus Stops and Bus Lanes	Upgrade Active Mode Links and Crossings
Resilience Is adaptable to change and disruption	Reduced incidence of closures	Guarantees access to and from side roads, reducing the need for risky turning manoeuvres, thus reducing likelihood of crashes and closures	Extending bus stop lengths improves capacity and enables dual use by public and private services Bus stops are futureproofed and can be converted to serve different vehicle types	Shared path alongside SH6A is much less susceptible to closures caused by crashes on the highway, enabling movement to be retained along the corridor
Amenity Enhances the liveability and quality of the natural and built environment	Positive survey feedback Reduced emissions	Signalised intersections provide safer, more convenient crossing opportunities, particularly for less mobile pedestrians	Presents opportunity to improve the place value of high-dwell areas along the corridor	High quality facilities encourage more people to use active modes and live a healthier lifestyle Reduces traffic volumes and therefore emissions.
Safety Enhances safety with a goal of Vision Zero	Reduced crashes, particularly DSIs	Signals provide more control over traffic, reducing the likelihood and severity of certain crashes (crossing/turning) Provides full protection for pedestrians and cyclists crossing SH6A Decreased risk of crashes as buses have their own lane and priority Increase in number and surface of bus stops reduces the risk of crowds and potential accidents for PT users	N/A	Segregated facility for less confident cyclists and clearly marked, continuous on-road cycle lanes for confident cyclists improves both real and perceived safety outcomes

4.1.2 Frankton and Ladies Mile

Table 12 assesses the Frankton and Ladies Mile interventions against the investment objectives.

Table 12: Frankton and Ladies Mile Programme vs IO

Investment Objective	Key Performance Indicator	Feature		
		Intersection Upgrades	Network Control	Active Mode Network
Efficiency Provide more efficient and reliable access for people and goods that: - sustainably manages high growth - reduces reliance on private vehicle travel	Improved travel time reliability Increased system occupancy Walking and cycling LOS	Enables high throughput of people without overloading downstream intersections and town centre Prioritises public transport, providing a faster and more convenient option than private car	Limits general traffic volumes, which facilitates the higher-capacity bus option Encourages use of more sustainable transport modes	Prioritises and encourages use of active modes Allows for better network operation, restricting high volumes to arterial roads and access to local roads

Investment Objective	Key Performance Indicator	Feature		
		Intersection Upgrades	Network Control	Active Mode Network
Enable enhanced land use				
Resilience Is adaptable to change and disruption	Smaller spread of delays throughout seasons	Higher throughput and better control by signals mean the intersections are better placed to cater for a range of future scenarios Signals provide better control during planned and unplanned events Phasing can adapt to dynamic seasonal and daily demands, ensuring consistent control over the network	Transfers congestion from highway to local roads, enabling movement function to continue through disruption Phasing can adapt to dynamic seasonal and daily demands, ensuring consistent control over the network	Provides a fully connected secondary network for travel around Frankton in the event of road closures
Amenity Enhances the liveability and quality of the natural and built environment	Positive survey feedback Reduced emissions	Provides amenity opportunities through the active mode connections. Opportunities for gateway treatments.	Signalised intersections provide safer, more convenient crossing opportunities, particularly for less mobile pedestrians	Creates a more pleasant and walkable neighbourhood by reducing traffic volumes and speed through Frankton Village
Safety Enhances safety with a goal of Vision Zero	Reduced crashes, particularly DSIs	Signal control removes impetus from drivers to pick gaps, reducing the likelihood of crashes Intersection has been designed to provide clear path for each movement to reduce chance of collisions Decreased risk of crashes as buses have their own lane and priority Increase in number and surface of bus stops reduces the risk of crowds and potential accidents for PT users	Signal control removes impetus from drivers to pick gaps, reducing the likelihood of crashes	Improves safety of Frankton Village by reducing traffic volumes and speeds

4.1.3 Queenstown Town Centre

Table 13 considers the QTC programme against the Investment Objectives.

Table 13: QTC Preferred Programme vs IO

Investment objective	Key performance indicator	Feature		
		Public and passenger transport hub (Stanley – Athol Street)	Arterials stage 1, 2 and 3	Town centre urban realm enhancements (masterplan alignment)
Efficiency Provide more efficient and reliable access for people and goods that: • sustainably manages high growth • reduces reliance on private vehicle travel • Enable enhanced land use	Improved travel time reliability Increased system occupancy Increased PT catchment Walking and cycling LOS	A high-quality public and passenger transport (PPT) hub will increase the attractiveness of public transport and provide a high level of customer experience through enclosed passenger waiting areas, the provision of real time information and supporting PT information. The PPT hub will also incorporate supporting cycle facilities such as secure lockers and amenities, such as showers and toilets, enabling customers to make multi-modal journeys without reliance on the private vehicle.	Stages 1-3 will provide more localised network capacity which may result in an increase in overall vehicle movements and compromise SH6A interventions that seek to achieve modal shift. Stages 1 and 2 will improve PT operations as through traffic is banned on Stanley Street and intersection improvements will support PT movements. If PT were routed along Stage 3, PT catchments would increase.	The design approach has sought to complement the target SH6A modal shares for 2028/2048. This has prioritised alternative modes and will result in higher LOS, increased uptake of alternative modes and improved travel time reliability.
Resilience Is adaptable to change and disruption	Reduced incidence of closures	Increases the number of travel options by improving the public transport offering and active mode connections, reducing reliance on private cars	The introduction of an additional link provides additional network resilience during localised disruption.	Increased alternative mode usage is more resilient to network disruption as modal alternatives can be used.
Amenity Enhances the liveability and quality of the natural and built environment	Positive survey feedback Reduced emissions	The dominance of the private vehicle in and around the town centre negatively affects the experience of residents and visitors to the town centre. Through reducing private car usage through a shift to alternative modes, the overall customer experience will be improved. A well patronised and successful PPT system has substantially less emissions than a car-based network. Consideration is also being given to an electrified bus fleet which would operate with zero tail-pipe emissions.	Supports urban realm and amenity improvements through widened footpaths and reduced noise emissions, particularly on Stanley St.	Reducing the dominance of private vehicles, supported by widened footpaths, increased greenspace and reductions in on-street parking will improve the overall amenity and liveability of the town centre. Delivers significant wider economic benefits (reflected in improved economic conditions for local businesses)
Safety	Reduced crashes,	Public transport is the safest mode of road transport on a per	The shifting of general traffic onto the arterials will reduce conflicts on	Less private vehicle usage will reduce the risk of crashes, while safety

Investment objective	Key performance indicator	Feature		
		Public and passenger transport hub (Stanley – Athol Street)	Arterials stage 1, 2 and 3	Town centre urban realm enhancements (masterplan alignment)
Enhances safety with a goal of Vision Zero	particularly DSIs	kilometre travelled basis. Increasing the ridership will improve modal share and reduce the likelihood of road incidents.	and improve safety outcomes. The new/upgraded intersection designs and operation would be in accordance with the Safe Systems approach providing greater safety. Any intervention that increases traffic volumes and the interaction with vulnerable modes is potentially detrimental.	improvements such as protected pedestrian crossings and slower vehicle speeds will reduce the severity of incidents.

4.2 Alignment of the wider transport strategies

A review of the wider transport strategies against the investment objectives has been undertaken. These strategies form an integral part of the three pillars make-up and are a vital element to demonstrating the successful outcomes of the Preferred Programme.

4.2.1 Alignment of the Travel Demand Strategy

Table 14 assesses the Travel Demand Strategy against the investment objectives.

Table 14: Travel Demand Strategy vs IO

Investment Objective	Assessment
Efficiency Provide more efficient and reliable access for people and goods that: a. sustainably manages high growth b. reduces reliance on private vehicle travel	Moderate: Developing policies to control and influence vehicle movement through the area using high capacity public transport will reduce reliance on private vehicle trips. Freight delivery management, including goods consolidation centres, will assist in managing growth and demand for services.
Resilience Is adaptable to change and disruption	Moderate: Provision of digital platforms for wayfinding provides methods to supply travel information effectively. Development travel plans will provide flexibility for sustainable parking/travel provision
Amenity Enhances the liveability and quality of the natural and built environment	High: Investigating alternative methods of movement, particularly active mode measures improve community liveability and reduces environment impact on natural, and built environment
Safety Enhances safety with a goal of Vision Zero	Moderate: Reducing unnecessary vehicle movements and providing school travel plans and road-sense education supports improved safety outcomes.

4.2.2 Alignment of the ITS Strategy

Table 15 assesses the Travel Demand Strategy against the investment objectives.

Table 15: Intelligent Transport Strategy vs IO

Investment Objective	Assessment
Efficiency Provide more efficient and reliable access for people and goods that: • sustainably manages high growth • reduces reliance on private vehicle travel	High: Provision of virtual priority within the network will create movement efficiencies particularly in areas expecting high growth. Rationalising parking in the town centre will require progressive management techniques to ensure high level of service is achievable. Features such as VMS
Resilience Is adaptable to change and disruption	Moderate: The system relies on technology which can be upgraded and adapted to suit local conditions however power/tech disruption would diminish the effectiveness of the system
Amenity Enhances the liveability and quality of the natural and built environment	Moderate: VMS can assist in managing the network through information relay to motorists on potential route delay, incidents and parking availability
Safety Enhances safety with a goal of Vision Zero	Moderate: ITS develops a safer environment through informing route choice, monitoring network activity and communicating hazards

4.2.3 Alignment of the Public Transport Strategy

Table 16 considers the public transport strategy against the investment objectives.

Table 16: Public transport strategy vs IO

Investment Objective	Feature		
	Road based PT network	High-quality transport hubs at Stanley Street and Frankton Golf Course	Virtual Priority
Efficiency Provide more efficient and reliable access for people and goods that: • sustainably manages high growth • reduces reliance on private vehicle travel	Provides realistic transport choice and encourages use of PT with improved travel times and reliability, which in turn reduces general traffic demand. Road based PT offers flexibility with routes and frequencies and can service outer lying areas cost-effectively. Will accommodate demand growth to around 2051. An offline corridor can provide an additional step-change in capacity on the core spine when needed. Commercial transport and freight benefits from increased trip reliability and the reduction in demand.	Both the Frankton hub and town centre hub will streamline transfers between services and modes. They will also encourage significant concentrations of people, providing opportunities for economic growth. The proposed Stanley Street hub is located close to the CBD on the main route into the town centre. Although further away than the previous Camp Street hub, improvements to crossings and shared spaces will enhance accessibility and quality of the area.	Enables improved travel times (>20% improvement) and reliability for PT Accommodates growth (increases the throughput of SH6A by approximately 100%) Provides approximately 60% of the benefits of 'full priority' on SH6A at 5% of the cost. Reduces probability of bus bunching, increasing design life of PT system
Resilience Is adaptable to change and disruption	Reduces crash exposure as fewer people travel by private car. The longer-term offline option removes crash risk from SH6A entirely, while active mode connectivity	High-quality hubs will further encourage mode shift, reducing exposure. They will also have highly pedestrian-focused design philosophies and provide fully	Reduces crash exposure as fewer people travel by private car.

Investment Objective	Feature		
	Road based PT network	High-quality transport hubs at Stanley Street and Frankton Golf Course	Virtual Priority
	between hubs and the surrounding network will be designed to minimise conflict.	protected connectivity in the town centre.	
Amenity Enhances the liveability and quality of the natural and built environment	Using flexible, modern, road based high amenity PT vehicles means that routes and frequencies can be altered or scaled as demand requires, without the need for substantial front-loading capital investment. Upgrading the fleet to electric or high-capacity vehicles would be relatively straightforward and would deliver significant amenity benefits. Further work is required to determine the power network implications of electrifying the fleet. The addition of an offline corridor such as a gondola, in the future, would deliver a unique experiential element to the PT network. While a gondola would be on a fixed route, it would be much less susceptible to closures and capacity and speed could be scaled up or down as required.	The hubs have been designed to provide capacity for on-road services and futureproofed for multiple potential future vehicle types. When road capacity (bus bunching) becomes more critical than hub space, additional long-term capacity can be accommodated in the hubs through an offline gondola system. Town centre and Frankton hubs can be integrated with surrounding developments to create high amenity transit orientated developments Hubs present urban amenity opportunities as focal points of the transport system. The Stanley Street hub will be the gateway to the town centre. Located on the edge of the CBD, public realm and active mode improvements will not be jeopardised by large buses. Integration with Project Manawa will provide highly efficient access for locals to the community heart precinct	High quality station style stops across the network, connected to active travel facilities, will provide amenity benefits. Signal phasing is easily changed to accommodate larger vehicles. Minimal localised disruption during construction.
Safety Enhances safety with a goal of Vision Zero	PT represents a safer form of transport than private motor vehicles Reduces traffic volumes and therefore emissions. Enables more sustainable and efficient use of space due to lower demand for space for cars, such as parking and roads. Adaptable to green technology such as electric buses	The removal of traffic from Stanley Street will enable safer crossing provision for pedestrians accessing the project Manawa site	Enables bus priority without the need for extensive construction and land acquisition for roading, leaving more space for amenity and active mode improvements

4.2.4 Alignment of the Town Centre Urban Realm Improvements

The urban realm improvements have been assessed against the investment objectives and this assessment is summarised in Table 17.

Table 17: Alignment of urban realm improvements vs investment objectives

Investment Objective	Assessment
Efficiency Provide more efficient and reliable access for people and goods that: a. sustainably manages high growth b. reduces reliance on private vehicle travel	High: The urban design elements have been derived to reduce reliance on private vehicles through reduction in parking opportunity in the town centre. Space gained in this manner has created additional streetscape dedicated to pedestrians. This will help absorb the growth in pedestrian traffic expected with the improved high capacity bus services and general increased population density expected in Queenstown.
Resilience Is adaptable to change and disruption	Neutral: Success of the public realm relies on maintaining high levels of service to users.
Amenity Enhances the liveability and quality of the natural and built environment	High: reducing on-street parking and enhancing the public realm through widened footpaths and amenity improvements. Use of high quality and durable materials during the design and implementation improves appearance. Amenity benefits, as quantified through the VURT assessment will deliver significant wider economic benefits.
Safety Enhances safety with a goal of Vision Zero	High: Reducing vehicle speeds and volumes through the town centre will create safer attributes for pedestrians. Improved pedestrian only movement provision, such as Barnes Dance crossings at intersections, and high quality public realm environments with good visibility.

4.2.5 Alignment of the Parking Strategy

The parking strategy has been assessed against the investment objectives and is summarised in Table 18.

Table 18: Alignment of parking strategy vs investment objectives

Investment Objective	Assessment
Efficiency Provide more efficient and reliable access for people and goods that: a. sustainably manages high growth b. reduces reliance on private vehicle travel	High: Through reducing potential conflict, side friction and unnecessary traffic circulation (searching for parking) network movement should be enhanced reducing delays. Effective parking management is a critical mechanism to help achieve the mode shift targets and reduce reliance on private vehicles. Improved access for goods through greater provision of on-street loading facility.
Resilience Is adaptable to change and disruption	Neutral: parking changes will not affect network resilience.
Amenity Enhances the liveability and quality of the natural and built environment	High: reducing on-street parking and enhancing the public realm through widened footpaths and amenity improvements.
Safety Enhances safety with a goal of Vision Zero	Moderate: Reducing unnecessary vehicle movements and improving visibility supports improved safety outcomes.

5 ASSESSMENT PROFILE

5.1 Overview

The National Land Transport Fund (NLTF) is the primary funding mechanism for Crown investment in the land transport system. The National Land Transport Programme (NLTP), reviewed and updated every three years in line with the release of the Government Policy Statement on land transport (GPS), identifies the activities likely to be funded by the NLTF.

Land transport activities which fit the criteria for funding from the NLTF, are assessed and prioritised against competing national priorities, to determine eligibility for funding. Activities with sufficiently high priority are included in the NLTP.

5.1.1 Approach to the assessment of the Queenstown Programme

An assessment profile has been undertaken for the entire programme under the category of **“Public transport, rapid transit and transitional rail improvements”**. Other categories of assessment are also possible – such as *‘Regional, local road and state highway improvements’*; however, assessment under this category is not anticipated to result in a higher GPS priority rating alignment².

Other improvements such as walking and cycling also make a notable composition of the Queenstown Programme, however based on the physical size, cost, and anticipated benefits of the programmes **public transport** improvements have been considered as being the most influential under this category.

The assessment has been undertaken using Waka Kotahi’s Investment Assessment Framework for the 2018-21 National Land Transport Programme. A provisional assessment has also been undertaken against the 2021 GPS which will come into effect in July 2021.

5.2 Assessment profile

Table 19 provides the assessment profile for the Queenstown Programme. It should be considered alongside the Programme Sequencing Table which provides an assessment profile for the individual elements of the programme.

Table 19: Assessment profile using Investment Assessment Framework

GPS Priority	Rating	Rationale
(GPS 2018) Access to opportunities, enables transport choice and access, and is resilient – Liveable cities	HIGH	The recommended option supports agreed integrated land use, multi-modal plans and mode shift in a major metro³. The following text outlines this alignment. The recommended option supports these integrated land use plans: • Alignment with the Spatial Plan • Alignment with Queenstown Town Centre and Frankton Masterplans The recommended option supports these agreed multi-modal plans • Active Travel SSBC • Queenstown Integrated Transport PBC • SH6 Grant Road to Kawarau Falls Bridge SSBC • Lake Wakatipu Public Water Ferry DBC The recommended option supporting mode shift. • The recommended option is anticipated to reduce car-based trips from the current mode share of 77% down to 40% by 2048. • The recommended option is anticipated to increase active mode share from 2% to 5%.

² Unless there is: a speed management approach focusing on treating the top 10 percent of the network that will result in the greatest reduction in deaths and serious injuries; or targeting areas of high collective risk with high DSI reduction measures that achieve a DSI reduction of at least 40%

³ The Transport Agency has identified Queenstown as a specific major metropolitan area given similarities in its transport requirements to those in the major metropolitan areas listed in the GPS, and therefore the application of the IAF criteria is treated in the same way as major metropolitan areas. Source: <https://www.nzta.govt.nz/assets/planning-and-investment/nltp/IAF-for-GPS-2018.pdf>

GPS Priority	Rating	Rationale
		The recommended option aligns with the Queenstown and Frankton Parking Strategies – which are considered important for helping create mode shift.
(GPS 2021) Better travel options and improving freight connections	IAF to be developed – programme option likely to have at least HIGH alignment.	The draft 2021 GPS provides a slight change from the 2018 Access priority by splitting considerations into 'better travel options' and 'improving freight connections'. Queenstown is specifically identified in the draft GPS as a place where mode shift plan(s) should be implemented⁴. It is noted that the Minister expects Waka Kotahi will work with local government to implement agreed mode shift plans in high-growth urban areas (Queenstown included). It is therefore considered that the preferred option is likely to at least maintain a high rating under a new IAF. If the recommended option improves to a rating of 'very high' under the 2021 GPS, then the corresponding priority order rating (using the existing framework) would be 1.

Note that to achieve a 'very high' alignment the following will need to be justified with evidence:

- “Addresses a very high predicted safety risk resulting from public transport”
- “Enables a substantial increase in access to social and economic opportunities for large numbers of people along dedicated key corridors and enables transit-oriented development”.

Rapid transit improvement proposals need to demonstrate that they will substantially increase the movement of large numbers of passengers on dedicated key major metro corridors.

5.2.1 Profile

Recommended Option GPS 2018/2021 Results Alignment Rating	High
Recommended Option BCR Bracket Estimate	Low
Corresponding Programme Priority Order Rating	5

⁴ Page 19 - www.transport.govt.nz/assets/Import/Uploads/Our-Work/Documents/draft-government-policy-statement-land-transport-2021.pdf

6 WIDER PROJECT IMPACTS

6.1 Social and environmental impact

In progressing the necessary approvals for the project under the RMA the following effects will need to be assessed and methods proposed to avoid, remedy, or mitigate any environmental effects.

The impacts have been arranged geographically into three zones (Frankton, F2Q, Ladies Mile, and QTC) are summarised in Table 20 to Table 22.

Table 20: Social and environmental impacts - Frankton

Effect	Comment
Natural Environment	The proposed works will not adversely affect any significant natural features, natural hazard or any significant vegetation. The existing Frankton Golf Course is reserve land and will be impacted by the proposed intersection upgrade and public transport hub options.
Cultural and Historic Heritage	There are no identified areas or features of archaeological or cultural heritage within the project area. Two identified items, being the Frankton Cemetery Walls and Gates and the Brunswick Flour Mill Turbine and Stone Buildings are listed in the district plan as a historic site. These structures will be unaffected by the proposed works.
Human Health	Whilst there are community facilities - schools, rest homes, childcare, medical, shopping and residential land uses within the vicinity of the proposal, there is limited change to the scale of activity from the existing at present. The major exception to this is the Humphrey Street extension which will introduce a new road adjacent to existing residential properties. It will also require relocation of the Fire Station. Whilst there are potential HAIL sites in the vicinity of the proposed works, it is highly unlikely there will be a disturbance of contaminated land.
Social	The proposal may affect access to a number of businesses and facilities during construction. Following completion there will not be any ongoing effects on access. Some sites will have enhanced access provision.
Landscape and Urban Design	There are no sensitive landscapes impacted by the proposed works. The works will provide opportunities some urban realm enhancements.

Table 21: Social and environmental impacts - Frankton to Queenstown

Effect	Comment
Natural Environment	Lake Wakatipu also has considerable value both from a habitat and landscape perspective. Lake Wakatipu is also subject to the Kawarau River Water Conservation Order (1997). Reclamation of the lake would have considerable environmental impacts. Ferries would require considerable 'lakeside' infrastructure.
Cultural and Historic Heritage	Lake Wakatipu was probably utilised as a māhika kai for inland bird species by Kai Tahu prior to European arrival. Lake Wakatipu is also a Statutory Acknowledgement under the Ngāi tahu Claims Settlement Act 1998. 2 listed trees are located along the route that have specific protection under the district plan. Other QLDC street trees will also require removal.
Human Health	There are a multitude of sensitive receivers adjacent to or in close proximity to the route predominantly residential properties and visitor accommodation. Generally speaking, in terms of the residential zonings adjacent to SH6A, the lakeside of SH6A is High Density Residential, and the uphill side is Low Density Residential. Those options that take land will bring traffic on SH6A closer to existing properties including residential properties and visitor accommodation. This will bring an increase in noise and vibration effects, some of which may not be able to be adequately mitigated. Widening of the corridor into the high density residential zoned land increases the theoretical number of individuals exposed to higher noise levels due to the density of development anticipated in this zone (as opposed to the Lower Density Residential Zoned Land).

Effect	Comment
	The widening options will also require a change to the current lighting environment along the route, potentially affecting dwellings and visitor accommodation.
Social	The project will also require land currently recreation reserve of various status'. The social values of the community with regards to the recreation reserve land will need to be addressed. Access to properties also impacted, with the potential for some residential properties to be purchased in their entirety.
Landscape and Urban Design	The project offers some opportunities to enhance urban character / urban realm adjacent to the existing corridor. The gondola option could give rise to high levels of visual and landscape effects depending on alignment.

Table 22: Social and environmental impacts - Queenstown Town Centre

Effect	Comment
Natural Environment	Whilst the setting of the arterials is urban there are two natural features that will be affected being Horne Creek and Lake Wakatipu. Horne Creek is known to support populations of the native fish koaro and is identified as being habitat for trout spawning. Lake Wakatipu also has considerable value both from a habitat and landscape perspective. Lake Wakatipu is also subject to the Kawarau River Water Conservation Order (1997).
Cultural and Historic Heritage	The Queenstown Town Centre includes multiple known archaeological sites. No specific assessment of the route in this regard has been undertaken. Horne Creek has been identified as being important to Tangata Whenua. Aukaha have previously advised that Horne Creek was associated with the Pā site, Tāhuna. The Pā itself is situated at Earl Street, some 600 metres south east of the Project area. However, the whole creek was probably utilised as a māhika kai for inland bird species by Kai Tahu prior to European arrival. Lake Wakatipu also has similar values and is also a Statutory Acknowledgement under the Ngāi tahu Claims Settlement Act 1998. The setting of 3 items of heritage significance (Transit of Venus Site, St Joseph's Church and Glenarm Cottage) will be affected by the proposal. It is unlikely Glenarm Cottage would be able to remain in its current location given the proximity of the footprint of the project. 3 listed trees are located along the route that have specific protection under the district plan. Other QLDC street trees will also require removal.

6.2 Implementability

6.2.1 Constructability

Disruption during the construction period will be inevitable, as temporary traffic management and lane closures will be necessary. Providing access for construction vehicles and minimising the impact for the commercial areas, all road users and the local community will be imperative. A Construction Traffic Management Plan (CTMP) will be developed identifying how construction phasing will be achieved in a safe and orderly manner. A widespread media campaign will also be developed to ensure the changes and anticipated delays during construction are communicated with the community.

6.2.2 Statutory requirements

The Frankton to Queenstown, Frankton and Ladies Mile Transport Business Case encompasses 46 discrete locations, each of which has its own specific consenting requirements. A number of these locations relate to the New Zealand Upgrade Program (NZUP). In each location Waka Kotahi, as a requiring authority, has a designation over part or all of the land involved with the proposed works. The Consenting Strategy attached as Appendix C13 identifies the consenting requirements associated with all of those locations based on the information available at this preliminary stage.

Table 23 identifies the intervention locations, planning matters to be considered during delivery process, and an indication of the perceived complexity of each intervention in planning terms. The complexity is registered under a 'traffic light' colour system with 'red' identifying complex sites, 'amber' identifying sites expected to represent some planning challenges, and 'green' sites anticipated to be straightforward.

Table 23: Planning considerations

	Planning Matters	Complexity
SH6 Howards Drive roundabout	Requires potential alteration to designation and outline plan (additional land for drainage may be required)	Yellow
Ladies Mile westbound priority bus lane	Requires potential alteration to designation and outline plan (additional land for drainage may be required)	
SH6 Hawthorne Drive Intersection	Requires alteration to designation Requires outline plan <u>Note:</u> Land is required to be taken on all four quadrants of the intersection	
SH6 Frankton-Ladies Mile to SH6/6A Intersection priority bus lane	Requires alteration to designation Requires outline plan	
SH6/Grant Road Intersection	Outline plan waiver	Green
SH6/Hansen Road intersection	Requires alteration to designation Requires outline plan	Yellow
SH6/Joe O'Connell Drive intersection (Events Centre)	Requires alteration to designation Requires outline plan	
SH6/6A intersection	Requires new designation Requires alteration to designation Requires outline plan	
Old Frankton/Frankton Village	Outline plan waiver	
Frankton Hub	Requires new designation Site subject of existing QLDC designation, which has priority Displacement of recreational land	Red
SH6 Kawarau Road (Ross Street to Kawarau Falls Bridge)	Outline plan waiver	Green
SH6/Lucas Place	Requires alteration to designation Requires outline plan	Yellow
SH6/Humphrey Street Intersection	Outline plan waiver	Green
Humphrey Street Link (SH6 to Lucas Place)	Notice of Requirement required for new Humphrey Street link	Yellow
SH6A/McBride Street Intersection	Outline plan waiver	Green
SH6A Yewlett to SH6/6A priority bus lane	Outline plan waiver	Yellow
SH6/6A to Marina intersection	Requires alteration to designation Requires outline plan Land required for the new western intersection, plus some minor widening east of Sugar Lane and between Sugar Lane and the new intersection.	
SH6A Frankton to Queenstown shared path	Requires alteration to designation Requires outline plan Potential land requirement	
SH6A/Marina Intersection	Outline plan waiver	Green
SH6A Marina to Perkins Road priority bus lanes	Outline plan waiver	Yellow
SH6A/New Marina/Perkins Road Intersection	Requires alteration to designation Requires outline plan	
SH6A Middleton Road eastbound bus stop	Outline plan waiver	Green

	Planning Matters	Complexity
SH6A/Battery Hill Intersection	Outline plan waiver	Green
SH6A/Goldfield Heights intersection	Outline plan waiver required <u>Note:</u> there is a protected gum tree (Council Ref. 240) on NW corner of intersection	
SH6A Goldfields eastbound bus stop	Outline plan waiver	
SH6A Goldfields Heights priority bus lane	Outline plan waiver	
SH6A Larch Hill Place to Goldfields Heights priority bus lane	Outline plan waiver	
SH6A Larch Hill Place intersection	Outline plan waiver	
SH6A Hensman Road Intersection	Outline plan waiver	
SH6A Oaks Club pedestrian signals	Outline plan waiver	
SH6A Oaks Club eastbound bus stop	Outline plan waiver	
SH6A Pounamu eastbound bus stop expansion	Outline plan waiver	
SH6A Suburb Street to Frankton/Stanley Street intersection priority bus lane	Requires alteration to designation Requires outline plan Land requirement	Yellow

6.2.3 Property impacts

Property will be required at a number of intervention locations. The property acquisition process will follow the Public Works Act process. In the first instance negotiations will be initiated with property owners to acquire the properties. This is considered the most efficient process, however, should agreement not be reached the alternative route to acquisition is through Compulsory Purchase, where applicable, once all reasonable endeavours to negotiate a fair sale have been exhausted.

The purchase of property is a lengthy process, expected 12-18 month per property with willing buyer – willing seller, and should be initiated as soon as possible as the process sits along the critical delivery path for the programme. Interdependencies between projects mean acquisition delays on one project may induce delay on other projects.

The table below summarises the currently identified property requirements, inter-dependencies and envisaged timings for acquisition.

Table 24: Property impacts

Project	Interdependency	Timing
SH6/6A Intersection	SH6A and SH6 interventions on Frankton are dependent on the control of the SH6/SH6A intersection, including priority measures.	2020/21
Interim Frankton Hub		2020/21
SH6/Hansen Road	SH6/6A Intersection	2020/21
SH6/Joe O'Connell	SH6/6A Intersection	
SH6 Frankton-Ladies Mile to SH6/6A Intersection	- SH6/6A Intersection - SH6 Hawthorne Drive Intersection - SH6 Grant Road Intersection - SH6 Hansen Road New Intersection - SH6 Joe O'Connell Drive Intersection - SH6 Hardware Lane to BP bus lanes	2020/21
Ladies Mile West Bound Bus Lane		2020/21
SH6 Howards Drive Roundabout		2019/20

Project	Interdependency	Timing
SH6A New Marina/Perkins Road Intersection	SH6/6A Intersection	2020/21
SH6A Battery Hill Intersection	SH6/6A Intersection	2020/21
SH6A Oaks Club Eastbound Bus Stop and Pedestrian Signals	SH6/6A Intersection	2021/22
Stanley Street Public Transport Hub	Project Manawa, Alternative route stage 2 Shotover/Stanley Street improvements, State Highway Revocation	2024/25
Alternative route - Stage 1 - Melbourne and Henry Street upgrade and connections includes intersection at SH6A		2019/20
Alternative route - Stage 2 - Gorge Road to Hay Street. New link and upgrades Excludes Man/Camp and Man/Brecon Streets.	1. Project Manawa (relocation of community hall) 2. Brecon Street steps (relocation)(TC15)	2022/23

Land requirement plans are attached in Appendix C14.

6.2.4 Environmental and Social Responsibility

The interventions have been assessed against the NZTA's Social and Environmental Responsibility Screen which have identified matters of further technical assessment that will be required as the project advances. For the Frankton to Queenstown section the following elements have been identified for further consideration:

- An ecological assessment will be required with regards to the activity in proximity to/within Lake Wakatipu
- Archaeological/Heritage impact assessment
- Arboricultural assessment on protected trees in proximity to the route or to be removed as part of the project
- Cultural Impact Assessment (potentially – may be avoided through engagement with Iwi)
- Noise impact assessment – current and future noise environment, mitigation
- Preliminary Site Investigation/Detailed Site Investigation with regards to potentially contaminated sites along the arterial route.
- Landscape/urban design assessment with regards to the impacts of the project on the existing streetscape
- Lighting impact assessment (both in terms of streetlighting but also in relation to the light spill from vehicles)

For the Frankton area the following elements have been identified for further consideration:

- Noise impact assessment – current and future noise environment in relation to the Humphrey Street Extension.
- As identified for the other business cases, a 'global' archaeological authority for the works should be considered.
- Preliminary Site Investigation / Detailed Site Investigation with regards to potentially contaminated sites.

Further information on the screening assessment is located in Appendix C15.

6.2.5 Geotechnical assessment

A preliminary geotechnical appraisal of the arterials route, Frankton to Queenstown alignment, and Frankton area has been undertaken as a desktop study. The purpose of the appraisal is to identify the existing pavement and ground conditions, provide economic and design feasibility advice on the derived intervention concepts, and make recommendations on further geotechnical investigations for consideration as the project progresses. The report identifies locations for Trial Pits and Boreholes to confirm current information and to inform the future pavement design. Further information on the preliminary assessment can be found in Appendix C16.

7 SUMMARY

This section has set out the suite of interventions that make up the Queenstown Preferred Programme. The Queenstown Programme includes a wide range of initiatives focussed on shifting the current reliance on the private vehicle and providing users with travel choice. This section has demonstrated that investment into three pillars of intervention: infrastructure, public transport service operations, and travel behavioural change will develop and deliver a successful programme resulting in the required step change in travel mode for Queenstown.

The remaining sections of this business case will demonstrate how the Queenstown Preferred Programme will deliver economic benefit to the Wakatipu Basin and the wider New Zealand economy before setting out how the package will be funded and delivered.