DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

Notice of Meeting:

I hereby give notice that an ordinary meeting of the Dunedin City Council will be held on:

Date:	**Tuesday 25 May 2021**
Time:	**10.00 am**
Venue:	**Council Chamber, Municipal Chambers, The Octagon, Dunedin**

Sandy Graham
Chief Executive Officer

Council

SUPPLEMENTARY AGENDA

MEMBERSHIP

Mayor	Mayor Aaron Hawkins	
Deputy Mayor	Cr Christine Garey	
Members	Cr Sophie Barker	Cr David Benson-Pope
	Cr Rachel Elder	Cr Doug Hall
	Cr Carmen Houlahan	Cr Marie Laufiso
	Cr Mike Lord	Cr Jim O'Malley
	Cr Jules Radich	Cr Chris Staynes
	Cr Lee Vandervis	Cr Steve Walker
	Cr Andrew Whiley	
Senior Officer	Sandy Graham, Chief Executive Officer	
Governance Support Officer	Lynne Adamson	

Lynne Adamson
Governance Support Officer

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Note: *Reports and recommendations contained in this agenda are not to be considered as Council policy until adopted.*

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REPORTS

STRATEGIC FRAMEWORK REFRESH

Department: Executive Leadership Team

EXECUTIVE SUMMARY

1 The purpose of this report is to update Council on the latest stage of the Strategic Framework Refresh and to seek approval to implement the Strategic Framework Refresh project plan.

2 The DCC's strategic vision was developed through a city-wide engagement process that started in 2011. Developed over a period of approximately eight years, the first of the DCC's eight strategies was adopted in 2010 and the last completed in 2017.

3 The Thriving Cities, City Portrait framework was approved in 2020 as a model of sustainability for development and adaptation as part of the refresh of the DCC Strategic Framework.

4 An initial high-level stocktake of the existing DCC framework was undertaken in 2020. The findings of the stocktake and a high-level outline of project phases for the Strategic Refresh was presented to Council in December 2020.

5 Since December 2020, staff have been working with consultants Harrison Grierson to develop capability in understanding the 'Thriving Cities' City Portrait model for Dunedin, including discussions with mana whenua. This has informed the development of a Strategic Framework Refresh project plan for the next stages of the Strategic Refresh process.

RECOMMENDATIONS

That the Council:

a) **Notes** the attached report 'Thriving Cities City Portrait: Progressing the Strategic Framework Refresh'.

b) **Approves** implementation of the Strategic Framework Refresh project plan.

BACKGROUND

6 The DCC's strategic vision was developed through a city-wide engagement process 'Your City Our Future' that started in 2011. It was a comprehensive collaborative process, which was the genesis for early strategic partnerships including the Creative Dunedin Partnership.

7 The existing Strategic Framework incorporates eight high-level strategies, underpinned by a commitment to the principles of sustainability and the Treaty of Waitangi. The key strategies were developed by the DCC working with the community and stakeholders over a period of approximately eight years. The first strategy, the 3 Waters Strategic Direction Statement was adopted in 2010, and the last, the Parks and Recreation Strategy was completed in 2017.

8 On 29 September 2020 Council considered a range of sustainability frameworks and approved development of the 'Thriving Cities' City Portrait for adaptation for a Dunedin context.

"Moved (Cr Steve Walker/Cr Christine Garey):

That the Council:

a) ***Considers*** *the sustainability frameworks set out in the report, and*

b) ***Approves*** *development of the City Portrait framework for development and adaptation.*

Division

The Council voted by division:

For: Crs Sophie Barker, David Benson-Pope, Christine Garey, Doug Hall, Mike Lord, Jim O'Malley, Chris Staynes, Steve Walker and Mayor Aaron Hawkins (9).

Against: Crs Rachel Elder, Jules Radich, Lee Vandervis and Andrew Whiley (4).

Abstained: Nil

The division was declared CARRIED by 9 votes to 4

Motion carried (CNL/2020/072)*"*

9 As a first step in the refresh of DCC Strategic Framework, staff commissioned consultants Harrison Grierson to provide an initial high-level stocktake of the existing framework. The evaluation included analysis of the framework itself, DCC staff and Councillor feedback, a survey of existing governance groups and mana whenua feedback. The findings of the stocktake, and a high level outline of project phases for the Strategic Refresh, was presented to Council in December last year.

10 On 14 December 2020 the Strategic Framework stocktake evaluation was reported to Council where it was resolved:

"Moved (Cr Sophie Barker/Cr Rachel Elder):

That the Council:

a) ***Notes*** *the findings of the DCC Strategic Framework evaluation and the next steps in the refresh of the DCC Strategic Framework.*

b) ***Notes*** *that staff would work with mana whenua and key stakeholders on a process for undertaking the review and report back to Council in May 2021 with a project plan.*

Motion carried (CNL/2020/112) with Cr Lee Vandervis recording his vote against.*"*

11 Based on the Strategic Framework evaluation, a phased process was developed to closely align the following three strategic areas into a single integrated work programme:

- Discussions with mana whenua about priorities and opportunities to integrate Te Ao Māori and Treaty principles into DCC strategy and implementation
- Development of the 'Thriving Cities' City Portrait, establishing opportunities to integrate sustainability principles into DCC strategy and implementation
- Refresh of DCC Strategic Framework, comprising existing strategic goals for Dunedin.

12 It was subsequently decided to review the Levels of Service to align with the Strategic Framework refresh.

13 On 23 February 2021 the Council considered a report on 10 year plan 2021-31 proposed levels of service.

"Moved (Mayor Aaron Hawkins/Cr Steve Walker):

That the Council:

a) ***Notes*** *that staff would work on a process for undertaking a review of Levels of Service statements and measures to align with the Strategic Framework refresh work, with a report back to Council in May 2021 on progress and with a project plan.*

b) ***Notes*** *that staff would be changing the quarterly activity report templates to incorporate performance tracking against 10 Year plan 2021-31 Levels of Service statements and various other reporting measures.*

Motion carried (CNL/2021/044)."

DISCUSSION

14 In March 2021, staff commissioned consultants Harrison Grierson to work with the DCC to develop staff and stakeholder capability in understanding the 'Thriving Cities' City Portrait model for Dunedin. Harrison Grierson's report, including the proposed project plan for the next stages of the Strategic Refresh, including reviewing Levels of Service, is attached (Appendix A).

15 The objectives of the Strategic Framework refresh project are to enable a review and update to DCC's strategies in a manner that is inclusive of mana whenua and the community, and addresses issues highlighted in the 2020 review. The project will achieve this by:

- Developing a good understanding of DCC's current state and defining common principles and governance procedures to inform development of all strategies.
- Embedding the Thriving Cities – City Portrait model as a means of defining and measuring sustainable outcomes desired for Dunedin.
- Improving DCC partnership with mana whenua generally, with a focus on:
    - articulation of what Treaty principles will underpin the Strategic Framework

- exploration of what sustainability and sustainable outcomes means to mana whenua

- exploration of how a Te Ao Māori worldview can be used to develop a City Portrait, including examination of the doughnut economics model.

- Improving partnership with the Dunedin community and promoting the collaborative effort needed for success.

- Reviewing and updating DCC's strategies and reviewing these against strategic priorities identified through the City Portrait process.

- Enabling implementation of defined sustainable outcomes and ongoing monitoring and adjustment of the strategic objectives, while maintaining an integrated and collaborative approach.

- Reviewing Levels of Service in alignment with the updated strategic priorities.

16 There are five stages to the Strategic Framework Refresh project plan. The scope of the work is phased, with each stage running in parallel and considers internal resources and timelines. Time frames will also be incorporated in the Council's forward work programme.

17 Stage one (June - July 2021) is an establishment phase. The aim of this phase is to ensure the governance including mana whenua and control group needs are set up to oversee the project. This stage will be critical to the success of the project and time to create this foundation for the project has been factored into the plan. Stage two (June 2021 – March 2022) aims to set up the refresh of the individual strategies for success. Work planned for stage two includes developing an initial City Portrait and the development of a strategy guidance document to be used by all strategy owners to guide the refresh of their strategies. The development of a stakeholder engagement plan to guide community involvement is also part of this stage. Stage three (March 2022 – June 2022) focusses on community feedback. The aim is to socialise the initial City Portrait and the Thriving Cities approach to sustainability with the wider community, as well as gain feedback on the current state of DCC strategies and how these are measured. Stage four (May 2022 – December 2022) will carry out the Framework Refresh informed by the information and analysis of stages 2 and 3. The output of this phase is a renewed Strategic Framework and individual strategies that are reviewed and up to date. Stage five (From January 2023) represents ongoing implementation using the metrics and approaches developed through the earlier stages.

18 A Levels of Service review runs parallel throughout the Strategic Framework Refresh project plan to align Levels of Service for the 2024-34 10 year plan. The Levels of Service review will be based on the renewed strategic framework.

19 Mana whenua involvement is also built into the duration of the Strategic Framework Refresh project plan, across every stage of the project. This approach will be critical to ensuring the DCC's refreshed Strategic Framework demonstrates a working commitment to the Treaty of Waitangi and a Treaty based partnership with mana whenua.

20 The Strategic Framework Refresh project will be managed by the Manahautū – General Manager Māori, Partnerships and Policy. The work required to implement the project plan will be undertaken within existing staff resourcing. External staff will be managed by existing budgets.

NEXT STEPS

21 If Council approves the Strategic Framework Refresh project plan, staff will begin implementation from June 2021.

22 Regular reporting to Council across key milestone points will occur at every stage of the project plan.

Signatories

Author:	Jeanette Wikaira - Kaiwhakamāherehere
Authoriser:	Sandy Graham - Chief Executive Officer

Attachments

	Title	Page
⇩A	Thriving Cities City Portrait: Progressing the Strategic Framework refresh	11

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This decision enables democratic local decision making and action by, and on behalf of communities. This decision promotes the social, economic, environmental and cultural well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	☒	☐	☐
Economic Development Strategy	☒	☐	☐
Environment Strategy	☒	☐	☐
Arts and Culture Strategy	☒	☐	☐
3 Waters Strategy	☒	☐	☐
Spatial Plan	☒	☐	☐
Integrated Transport Strategy	☒	☐	☐
Parks and Recreation Strategy	☒	☐	☐
Other strategic projects/policies/plans	☒	☐	☐

This report provides a project plan for refreshing the DCC's Strategic Framework comprising all of the above strategies.

Māori Impact Statement

Mana whenua and mataawaka perspectives have informed the draft project plan and mana whenua will be partners in the Strategic Refresh project. As part of this, the Kaiwhakamāherehere supported by Harrison Grierson, facilitated workshops with mana whenua and Māori academics from the University of Otago were held, to consider how the Thriving Cities, City Portrait model could integrate a Te Ao Māori lens to support the development of an integrated vision of a thriving city in the context of Dunedin.

Sustainability

The DCC's Strategic Framework is underpinned by the guiding principles of the Treaty of Waitangi and Sustainability. It is recognised that in the absence of a formal definition or framing of Sustainability, there is room for ambiguity in its interpretation. Development and adoption of a clear representation of sustainability is likely to promote social, economic, environmental and cultural wellbeing of communities in the present and for the future by ensuring that there is clarity on both the interpretation and the measures of sustainability, and promoting consistent application of a sustainable development approach.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

The refresh of the DCC Strategic Framework is expected to bring greater visibility and clarity as to how current and future corporate planning functions (encompassing long term plans and associated statutory strategies, levels of service and performance measures) are supporting DCC strategic goals as well as meeting statutory requirements.

Financial considerations

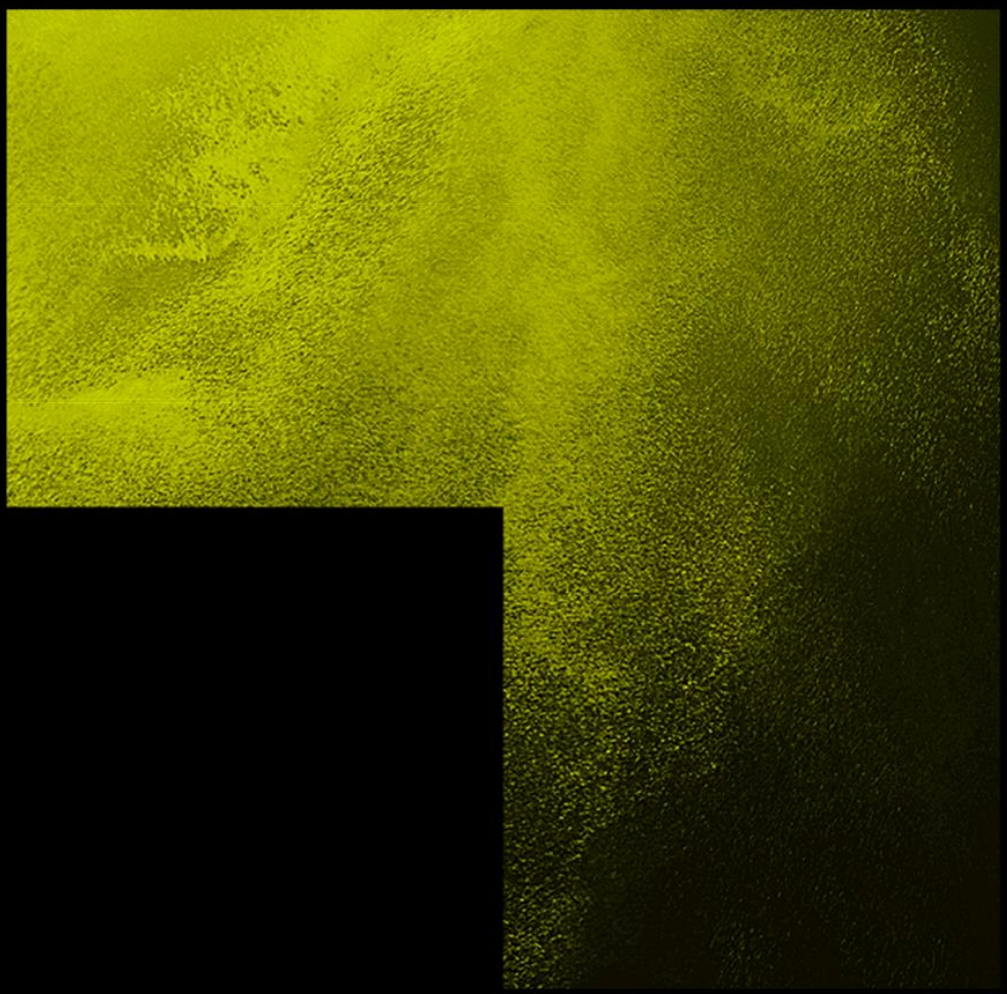
There are no financial considerations.

SUMMARY OF CONSIDERATIONS
Significance This report is considered to be of low significance in terms of the Significance and Engagement Policy as it provides a project plan for the Strategic Framework refresh. The refresh of the DCC's strategic priorities and strategies is of high importance and the project plan allows for community engagement on this phase of the work.
Engagement – external DCC has engaged with mana whenua and Māori academics from the University of Otago in the work to date.
Engagement - internal Harrison Grierson facilitated workshops with the Executive and Senior Leadership Teams, and staff with a role in the key strategies that currently make up the Strategic Framework. The purpose of the workshops was to upskill staff and consider how the City Portrait model could be used to develop an integrated vision of sustainability in the context of Dunedin.
Risks: Legal / Health and Safety etc. There are no identified risks at this stage.
Conflict of Interest There are no identified conflicts of interest.
Community Boards There are no implications for Community Boards at this stage.

THRIVING CITIES CITY PORTRAIT : PROGRESSING THE STRATEGIC FRAMEWORK REFRESH

HG

DUNEDIN CITY COUNCIL



DOCUMENT CONTROL RECORD

CLIENT	Dunedin City Council
PROJECT	The Strategic Framework Refresh - Thriving Cities City Portrait
HG PROJECT NO.	A2110739

ISSUE AND REVISION RECORD

DATE OF ISSUE	13 May 2021
STATUS	Final
ORIGINATOR	Caroline Crosby
REVIEWED	Andrew Collins
APPROVED FOR ISSUE	Caroline Crosby

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HG PROJECT NO A2110739

1.0 INTRODUCTION

Dunedin City Council (DCC) is preparing to update its strategic framework and review and update all the individual strategies that sit within it. DCC is also reviewing its approach to measuring sustainability and sustainable outcomes, with particular interest in the Thriving Cities – City Portrait model.

Harrison Grierson (HG) has been engaged to provide DCC with training in the City Portrait model, its potential application in Dunedin as a sustainability model and its potential to support the strategic framework refresh project. Based on this work, a project plan for the Strategic Framework Refresh has been developed and is set out in this report. This plan will be presented to the governing body in May 2021 with the objective of gaining approval for the next phases of the refresh project.

2.0 BACKGROUND

Dunedin City Council has recently undertaken two investigations that have led to this project, which is a precursor to a major refresh of the existing strategic framework.

2.1 SEEKING AN APPROACH TO SUSTAINABILITY

On 29 September 2020, Council considered a range of sustainability frameworks and approved further assessment of the *'Thriving Cities -City Portrait'* model for potential use in Dunedin.

Based on its parent model, 'Doughnut Economics', the Thriving Cities Portrait brings together the principles of circular economics, collaboration and effective change processes to empower cities and communities to define sustainability goals that are important to them and then to develop suitable local processes to achieve those goals. The model provides a framework for Cities to develop their own roadmap towards sustainability, by incorporating any number of approaches under the umbrella of 'Thriving'. This makes it suitable for application across the range of strategies and plans that DCC needs to develop and administer.

2.2 STRATEGIC FRAMEWORK EVALUATION

In November 2020, a strategic framework evaluation was completed. The evaluation identified that there was a lack of cohesion between the various strategies. Governance of the framework and oversight of the definition of strategic goals did not occur across the framework, leading to a lack of common purpose across the strategies. The principles of 'sustainability' and 'Treaty of Waitangi' underpinning the current strategic framework were undefined, meaning that individual strategy holders needed to interpret these, further contributing to a lack of cohesive strategic intent across the framework. The evaluation noted core strengths of collaborative intent and community involvement in the original strategic framework development.

Key recommendations from the November 2020 review were for DCC to:

- Develop integrating principles of sustainability to guide and inform all strategies
- Develop integrating principles or approach to The Treaty /te tiriti to guide and inform all strategies, in collaboration with mana whenua
- Review governance and oversight of the framework, to provide more consistency in implementation and expedite collaboration across strategy holders and implementers

As part of this work, the *Thriving Cities: City Portrait* tool was assessed as being suitable to help articulate these principles, ahead of implementation as a longer-term means of defining sustainable outcomes for Dunedin and measuring the city's progress towards them.

2.3 STRATEGIC FRAMEWORK REFRESH / REVIEW AND UPDATE OF DCC STRATEGIES

DCC is currently preparing to undertake a review of all its existing strategies. Ideally, the actions identified in the 2020 evaluation framework would be completed before individual strategies are revised. If this is not the case, there is a risk that the current lack of cohesion between the strategies will be perpetuated. This needs to be balanced against the very real need to update the strategies currently comprising the framework, as these are up to 11 years old. In addition, Levels of Service put forward for the 2024-2034 10 year plan will need to be reviewed to make sure that they are aligned with the refresh outcomes.

2.4 THRIVING CITIES – CITY PORTRAIT EVALUATION PROJECT

Bringing together outcomes from the previous two projects, this City Portrait project will assist DCC in understanding and evaluating the suitability of the City Portrait model for use in Dunedin. This project is also informed by work DCC is undertaking with mana whenua, to explore ways that DCC could give effect to the principles of the Treaty of Waitangi.

Objectives of the Thriving Cities – City Portrait are:

- To provide DCC staff and mana whenua with introductory training on doughnut economics and the City Portrait tool
- To gather feedback from DCC staff and mana whenua about the City Portrait tool and explore barriers and opportunities to its implementation
- Based on this work, to develop a project plan for the Strategic Framework Refresh that embeds the City Portrait tool in a manner that reflects this feedback

3.0 PROJECT METHOD

This project has been carried out by developing and undertaking a series of workshops with DCC staff and mana whenua. The following material and documents have been provided to DCC:

- Training material provided ahead of the workshops
- The formal workshop presentations
- Detailed notes from the workshops

Based on information gathered at these workshops, a project plan for the Strategic Framework Refresh has been developed, in conjunction with the DCC project team. This project plan is set out in section 6 of this report, with an outline programme in Appendix 1.

4.0 AN INTRODUCTION: DOUGHNUT ECONOMICS & THE THRIVING CITIES TOOL

4.1 WHAT IS DOUGHNUT ECONOMICS?

4.1.1 20TH CENTURY ECONOMIC ORTHODOXY – A DRIVER FOR CHANGE

To understand the drivers and principles behind doughnut economics (the model that the City Portrait tool is based on), it is first useful to consider orthodox economic models and the way that they portray and consider human beings, society and natural resources. Figure 1 shows a typical circular flow economic model. The economy operates as a closed loop, without social or ecological context. In these models, the central human actor has often been defined as 'Economic Man'- a rational, self-interested creature who calculates a path through life based solely on his own interests. The balance of 'self-interests' of the economic actors in this model is assumed to mean that the economy can (and will) provide for the needs of all. The collective success of these economic actors over time is measured by economic growth - the increase in the goods and services produced in the economy by and for the actors. An example of this sort of model is shown in Figure 1.

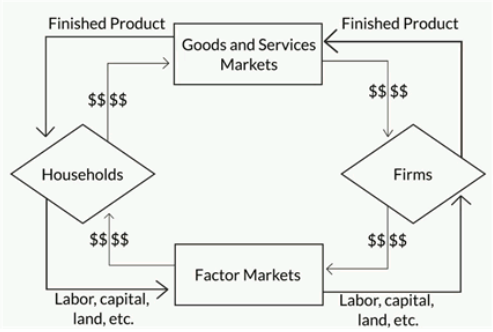

FIGURE 1 TRADITION ECONOMIC MODEL - THE CIRCULAR-FLOW MODEL OF THE ECONOMY (THOUGHTCO.COM)

It is well understood that these sorts of models are concerned predominantly with the rate of growth of income, not how it is distributed or used. There are also a multitude of resources and waste products that impact on people and ecosystems that are not taken account of in these models. This includes factors such as:

- Raw materials used and waste products generated and the impact of this on societies and ecosystems
- Unpaid work
- Access to resources (social and natural)
- Collective, rather than individual societal aspirations
- The finite nature of our ecosystems and the resources they contain

However, this has not stopped the concept of 'economic growth' - as defined in these models - taking centre-stage in the policy making and operating decisions of most governments and businesses for a number of decades. This means that implicitly, ecosystems, marginalised populations and unpaid workers have not been considered as important as the maintenance

of an economic growth cycle based on consumerism and consumption, by those who are able to participate in it.

4.1.2 A LINEAR VS A CIRCULAR ECONOMY

The orthodox economic approach has resulted in a very linear approach to the production of good and services. A traditional linear economy 'value chain' (how a business or organisation creates value through the goods or services it produces or provides) comprises processes such as the following:

"Source: Design/Specify: Create/Produce/Procure: Consume/Use: Dispose"

The fact that disposal – to landfill or to the environment – represents the end point of a traditional linear value chain, means that most or all of the value that had been created in the chain is destroyed (although the production of goods, their use and their disposal are all activities contributing to economic growth).

A circular economy seeks to recover some of the value that is lost in a traditional value chain by closing loops between processes. Some of the ways this can be done include recycling, repurposing or increasing utilisation of goods that could be more productive (such as private motor vehicles that are not used for most of the day). The circular economy is restorative and regenerative by design and aims to redefine growth, focusing on positive society-wide benefits. The circular economy follows three key design principles[1]:

- Design out waste and pollution;
- Keep products and materials in use; and
- Regenerate natural systems.

4.1.3 THE DOUGHNUT ECONOMICS MODEL

Kate Raworth, an economist and the creator of Doughnut Economics, argues that as a result of this definition of and focus on economic growth, economics in the 20th century has *"lost the desire to articulate its goals - it has aspired to be a science of human behaviour: a science based on a deeply flawed portrait of humanity"*[2].

The Doughnut model she created, shown in Figure 2, presents a vision of a circular economy that generates a 'safe and just space for humanity to thrive'. The model shows how social and environmental issues impact on this space. The model is designed to promote holistic thinking about the interconnectedness of all aspects of the natural and human worlds. Information about the doughnut, its intent and application is freely available online from the Doughnut Economics Action Lab (https://doughnuteconomics.org/).

[1] Ellen MacArthur Foundation (2015), *Delivering the Circular Economy: A toolkit for policymakers*
[2] Kate Raworth, *Doughnut Economics:7 ways to think like a 21st century economist*, 2017

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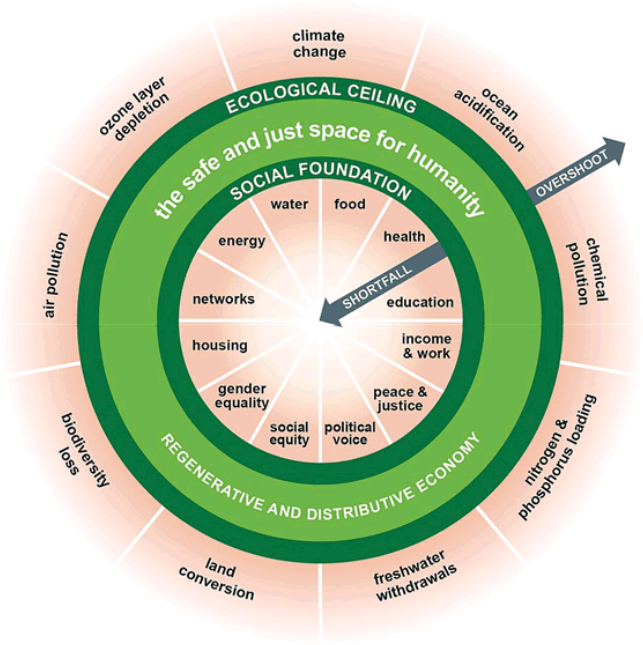

FIGURE 2. THE DOUGHNUT MODEL

Key features of the doughnut model:

- The doughnut itself represents a "safe and just space for humanity" – a place where people can thrive. This space is created and served by a regenerative and distributive circular economy.
- The inner boundary of the doughnut is the "social foundation" which consists of twelve minimum social standards that need to be met for a safe and just space to exist. These standards were derived directly from the United Nations Sustainable Development Goals and exclude the goal relating to 'Economic Growth', replacing this with the circular economy within the doughnut.
- The outer boundary is the "ecological ceiling" of our planet which consists of nine categories which are, when exceeded, a threat to the stability of the planet. These ceiling categories are derived from data-driven earth science knowledge to the extent possible. Climate change represents just one of these categories.

A shortfall in the social foundations or an overshoot of the ecological ceiling 'shrinks the doughnut' – i.e. reduces the safe and just space available for humanity.

An initial assessment of how humanity is doing (planet-wide) using the doughnut has been undertaken by Kate Raworth and her team and is shown in Figure 3. The doughnut economics team have labelled this 'Humanity's Selfie'. The 'selfie' shows how various categories of the ecological ceiling are being breached based on known scientific data (noting that it is actually not possible to quantify air pollution or chemical pollution planet-wide due to lack of data at

5

this time). It also shows that planet-wide, based on the United Nations Sustainable Development Goals, a strong social foundation is not provided for very many people.

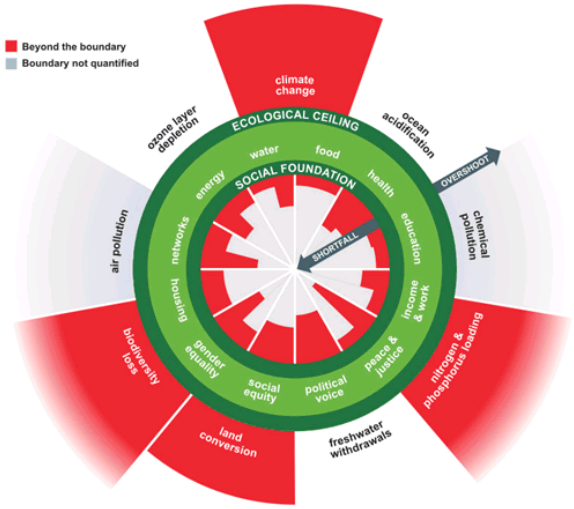

FIGURE 3 HUMANITY'S SELFIE 2019 - A SAFE AND JUST SPACE?

This selfie presents a very high-level perspective. A similar assessment could be undertaken for individual countries and cities, which is a useful prompt for decision makers to consider areas for improvement in their jurisdiction[3]. However, this snapshot of a doughnut does not help to define actions that could help improve the 'safe and just space' that is desired for humanity. For any individual, group, city or country to take action in any of these areas, or indeed across all of them, requires a different tool.

In order for specific countries and cities to be able to use the concepts behind doughnut economics effectively, it has been necessary to develop a tool that enables examination of the 'social foundation', 'ecological ceiling' and 'circular economy' at a local level. This tool is the 'Thriving Cities – City Portrait' tool.

[3] Leeds University has attempted this, including a snapshot of New Zealand: Home - A Good Life For All Within Planetary Boundaries (leeds.ac.uk)

4.2 THE THRIVING CITIES - CITY PORTRAIT MODEL

4.2.1 PREAMBLE

The Thriving Cities – City Portrait tool is a methodology developed by the 'Thriving Cities Initiative"- a collaboration between the C40, Doughnut Economics Action Lab, and Circle Economy groups[4]. It aims to 'downscale the doughnut' so that Cities can examine the social and planetary boundaries of the doughnut and the interactions between them at their own local level. A focus on Cities is intentional – as home to over 55% of the world's population, Cities use around 60% of the world's energy requirements and generate around 70% of global greenhouse gas emissions[5], as well as presenting some of the most socially challenging situations facing humanity. Cities could therefore have an enormous positive impact if they turned their attention and efforts towards the development of a 'safe and just space'.

4.2.2 WHAT IS THE CITY PORTRAIT TOOL?

The City Portrait methodology combines local aspirations – to be thriving people in a thriving place – with global responsibility – both social and ecological – that requires every place to consider its many complex interconnections with the world in which it is embedded[4]. The City Portrait tool can be distilled down to a single core question for a city:

How can our city be a home to thriving people, in a thriving place, whilst respecting the wellbeing of all people, and the health of the whole planet?

The tool enables cities to do this by presenting four lenses through which City activities and strategies can be examined, as shown in Figure 4. These lenses reflect the concepts of the doughnut economics model by:

- Considering the social boundary and ecological ceiling
- Considering the interconnectedness of all things by using a local and global perspective
- Encouraging collaboration between all who live in a City, recognising the impacts we all have on each other and the benefits that multiple and diverse perspectives can bring when solving complex problems

FIGURE 4 LENSES OF THE CITY PORTRAIT TOOL

[4] The Thriving Cities methodology is available online: Creating City Portraits - A methodological guide from the Thriving Cities Initiative - Insights - Circle Economy (circle-economy.com)
[5] 1. C40 Cities, Arup & University of Leeds. The Future of Urban Consumption in a 1.5°C World, (2019). www.c40.org/consumption.

Taken together, the lenses are intended to start and inform a public discussion and collaboration about what it would mean for a city to 'Thrive', implicitly incorporating the concept of sustainability and sustainable outcomes. This is a definition of 'Thriving' that recognizes all things are connected; that a local ability to thrive is not disconnected from global impacts and that social wellbeing is connected to ecological wellbeing.

The Thriving Cities tool presents a suggested approach for considering each of these lenses and the interconnections between them. However, this is not intended to be a definitive method. The concept of the four lenses, mirroring the concepts of the doughnut, provides a framework for cities to define what 'Thriving' means to them.

It is important to realise that the Thriving Cities model is designed to be extremely flexible and that there is no 'right' way to implement the model. The model does not dictate necessary outcomes to a community, rather it encourages the community to define its own local priorities and needs, using the lenses of the tool as a prompt to consider the concepts of the doughnut. The model provides a set of concepts and lenses for viewing strategic objectives, targets and outcomes that can be used in any way that an organisation or group sees as a good fit for itself. Once strategic objectives have been mapped across the lenses, it is possible to see how they interact and where they may be in conflict.

The only model mandate is for Cities to take a proactive approach to collaboration with all who live there, recognising that positive sustainable change can only be made as a collective. Often 'global' sustainability problems are so large and seem so overwhelming that solutions may remain in the 'vision', 'strategy' stage and solving them regarded as the provenance of governments and special 'activist' groups (who often themselves work in silos and focus on only one aspect of 'sustainability'). While it may be the case that well-resourced and connected organisations such as governments and local bodies probably have a higher chance of maximizing the positive impacts of the Thriving Cities model, the tool offers a vision of local involvement and collective responsibility in the definition and implementation of local goals that answer the key questions posed by the four lenses.

4.2.3 WHAT IS A CITY PORTRAIT?

A City Portrait is a snapshot of how a City is performing against the four lenses of the model, using criteria developed by the City that represent the aspirations of its community. The form of the City Portrait will depend on how the City has decided to present it. Examples are shown in Figures 5 (Amsterdam) and 6 (Brussels). More detail on these examples is included as part of Appendices A and B.

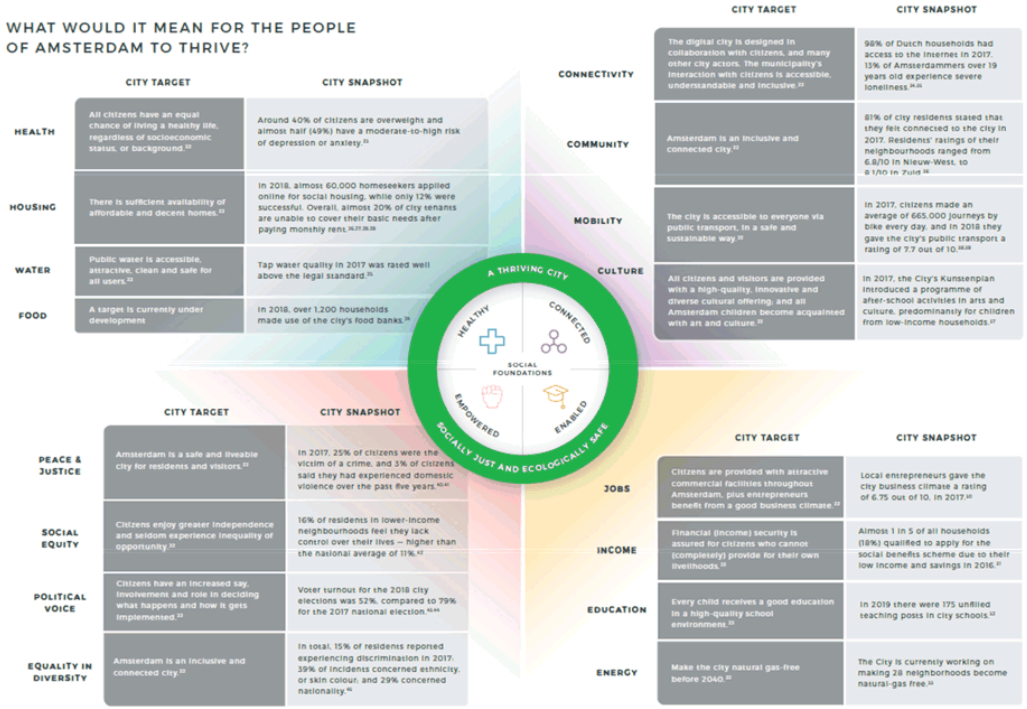

FIGURE 5 THE LOCAL-SOCIAL LENS OF AMSTERDAM'S CITY PORTRAIT

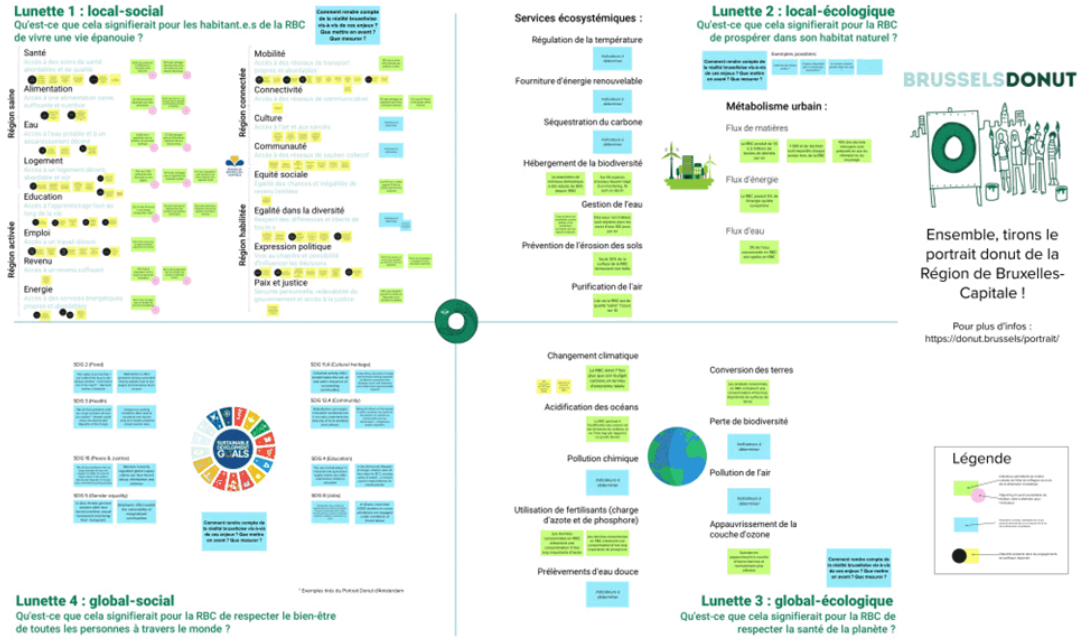

FIGURE 6 THE BRUSSELS CITY PORTRAIT

4.2.4 WHAT DOES USING THE TOOL ACHIEVE?

Using the tool enables Cities to:

- Develop a concept of 'Thriving' that is relevant to them. Authors of the tool acknowledge that it was originally developed for cities of the global north – and that some adaptation is likely to be needed in the global south. They encourage cities to adapt the portrait tool to suit themselves – what matters is the concepts of local/global impacts and social/ecological boundaries.
- Develop a vision, strategies and performance metrics for 'Thriving' (sustainability, sustainable outcomes) that is completely relevant to their local communities and environment, incorporating an assessment of current strategic objectives and performance measures.
- Concentrate on being locally relevant, rather than focusing on comparisons that may be less useful (such as between geographically distant and environmentally/socially different cities in the same country).
- Develop and compare strategic targets and measurements in a holistic manner across the breadth of their activities, so that decision-making can be made with full knowledge of tradeoffs and compromises, but also take advantage of the synergies that may not present in a less holistic model.
- Take a City Portrait at regular intervals, to provide a holistic snapshot of how a City is performing and examine whether its strategic objectives are still the right ones.
- Take a long-term view and use the tool over the long-term. By design, the City Portrait tool is flexible, adaptable and not constrained to any particular operating model or approach.
- Act in a collaborative manner with their communities, recognising that improvements to the 'safe and just space' will not come from any grand gesture, but from a multitude of incremental steps undertaken by people with a common purpose.

4.2.5 USING THE TOOL

The tool is designed to be flexible – this is a positive, as it can be adapted to any number of contexts and a negative – as it means there is no defined process for cities to follow. There is no 'right' or 'wrong' way to create a City Portrait if the intent of the tool is kept front of mind. For example:

- It is acceptable to start with limited data and a smaller number of project participants - an initial City Portrait could then be used to start a discussion with the community.
- Imperfect data is an opportunity to identify gaps in understanding and performance – highlighting this through the City Portrait is a prompt to collecting better data.
- A City Portrait is not an end in itself – it is a prompt to action to continuously improve – for this reason the Portrait should be retaken at regular intervals.
- Transformative actions don't always need to be dramatic – the sum of many actions, large and small is needed, across all of society. Some actions will be expensive and difficult, some will be smaller and simpler, but all are important. Thriving Cities provides a framework for these actions to be included and recognized, so that all can see and celebrate the cumulative impact of their actions.

4.2.6 DEVELOPING A CITY PORTRAIT

Once the decision is made to develop a City Portrait, the process could look as follows:

1. Form a project team. The City Portrait tool is designed so that a wide variety of people can input to its development. The major skillsets and resources required for this team are expert programme designers, communicators and facilitators, who can enable participants to have their voices heard and incorporate these effectively into outcomes and actions.
2. Identify key stakeholders and officials to be involved in creating the portrait.
3. Identify what data is available, what the gaps are and what needs to be collected for the portrait.
4. Hold workshops with stakeholders as a means of gathering input, using available data and deciding on how to present strategic objectives and targets in the model. This can make use of existing strategies. The process can also be used to review and incorporate Levels of Service into the City Portrait.
5. Create the initial City Portrait.
6. Use further workshops to explore interconnectedness between the lenses of the portrait and develop performance metrics and outcomes.
7. Based on these workshops, create projects or initiatives that will help achieve the outcomes.
8. Repeat! As confidence in the approach is gained, wider groups of stakeholders can be involved in the process. The City Portrait can be refined over time to reflect better information or changing objectives.

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5.0 WORKSHOP FEEDBACK SUMMARY

5.1 WORKSHOP DETAILS

As part of this project, a series of workshops was held with DCC and representatives from Mana Whenua.

The purpose of the workshops was to:

1. Develop DCC and stakeholder understanding of the Thriving Cities Portrait model and how it has been applied elsewhere.
2. Consider how the model could be used to develop an integrated vision of sustainability in the context of Dunedin.
3. Consider how the model could be used to inform the guide the Strategic Framework refresh project
4. Take feedback from attendees about the model, how it could be used in Dunedin and the key issues that would need to be addressed to ensure success as part of the strategic framework refresh and beyond

There were a number of common themes in the feedback.

5.2 COMMON THEMES

5.2.1 A NEED FOR OVERARCHING STRATEGIC GUIDANCE

- An overarching strategy to inform development of all others is needed. This can incorporate overarching principles of sustainability, te tiriti and any others and it can set out governance and decision-making processes to guide all individual strategy holders.

5.2.2 A NEED FOR BETTER PARTNERING WITH MANA WHENUA

- There are noticeable gaps in principles of the articulation of te tiriti / the treaty and sustainability across DCC strategies.
- There is a strong desire to incorporate a te ao Māori perspective and improve engagement with mana whenua.

5.2.3 ALIGNMENT WITH TE AO MĀORI

- The Thriving Cities model aligns well with a te ao Māori worldview.
- Mana whenua are interested in using this approach to progress work with DCC with respect to developing a Māori strategic framework and/or principles of te tiriti /Treaty of Waitangi.

5.2.4 POSITIVE RESPONSE TO THE DOUGHNUT & CITY PORTRAIT

- The concepts of the doughnut economics model and the City Portrait models are not new and are generally well understood – this is positive and will expedite engagement with the community.
- The lenses of the City Portrait provide a holistic view that can help highlight the tradeoffs in decision-making that must be made by Local Government, this is desirable for DCC where these tradeoffs are not always clearly articulated or understood.
- There is desire to adapt the doughnut indicators to a local context and to generate a simple City Portrait as a starting exercise. This will help DCC and mana whenua understand what using the model could be like in practice, further increase

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understanding, introduce the model to a wider audience and promote development of sustainability principles.
- The intent to integrate all city/region activities and broad collaboration with the community, organisations, and industries is a desired approach.

5.2.5 A NEED TO GEAR UP FOR EFFECTIVE ENGAGEMENT

- The model is heavy on effective engagement and collaboration with stakeholders and DCC internal collaboration processes also need to be effective. Having an overarching strategy document to initially define how strategy holders should work together will help. Using the four lenses of the models to promote collaboration will help.
- It is important to ensure engagement processes are inclusive of underrepresented populations. DCC is light on engagement resources and this needs to be identified in the project plan.

5.2.6 LET'S TRY A CITY PORTRAIT

- The concept of the City Portrait seems a good one – but it is necessary to have a go at preparing one in order for staff to fully understand how it will work and how it can be applied – and to socialise the concept with a wider number of staff than this project could do.
- Creating an initial City Portrait as a first step (based on existing information) could lay the groundwork for subsequent efforts, including identifying gaps in current strategies as the critical first step towards plugging them. It would also further increase knowledge of, confidence in and acceptance of the collaborative style of working that this methodology demands.
- It is a good idea to put a finite timeline on this initial portrait and involve a reasonably small number of stakeholders to begin with.
- There are existing projects, metrics and measures in current strategies that could be utilised to create an initial City Portrait. A data and information audit of the current strategies will be one of the first steps.

5.2.7 OPPORTUNITY

- Using the tool presents opportunities to DCC. There is opportunity for DCC to stop benchmarking itself against other local govt organisations at a time where the function and purpose of local government is being examined. To enable a City to thrive, to engage its citizens and mana whenua and create movement towards a 'safe and just space' for its community is a way for DCC to show leadership in this space.

5.2.8 NEXT STEPS

- There is some urgency in adopting a framework for decision-making so that the strategies can be reviewed, so there is a need to get on and get started.
- The project plan needs to clearly set out how the City Portrait fits within the overall strategic framework refresh.
- The project plan needs to set out how the initial City Portrait can be used to facilitate longer-term ongoing sustainability improvements. There is a need to make sure that the methodology is sustainable in the long-term to ensure that it is not based on the political cycle.

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6.0 STRATEGIC FRAMEWORK REFRESH: PROJECT PLAN

Based on this work, a proposed project plan for the Strategic Framework Refresh has been developed, incorporating the Thriving Cities – City Portrait. A review of Level of Service (LOS) statements, measures and targets to ensure alignment with Council strategic framework will also be progressed.

6.1 APPROACH TO THE PROJECT PLAN

The project plan sets out a pathway to reviewing, updating and maintaining the strategic framework. The plan considers DCC internal resources and timelines and outlines additional resources that are likely to be required. The plan seeks to balance the need to make sure that the strategies are reviewed in an integrated manner against the need to update the strategies currently comprising the framework, as these are up to 11 years old. By developing a common framework and principles, the plan ensures that once the initial refresh project is complete and the methodology embedded, further review and update of the strategies will be able to be undertaken as necessary by individual strategy holders, without the risk of a lack of cohesion developing, as is the case at the present time.

6.2 PROJECT OBJECTIVES & OUTCOMES

The objectives of the Strategic Framework Refresh Project are to enable DCC to review and update DCC's strategies in a manner that is inclusive of mana whenua and the community and addresses issues highlighted in the 2020 review. The project will achieve this by:

1. Setting the individual strategy refresh process up for success by developing a good understanding of DCC's current state and defining common principles and governance procedures to inform development of all strategies
2. Embedding the Thriving Cities – City Portrait model as a means of defining and measuring sustainable outcomes desired for Dunedin
3. Improving DCC partnership with mana whenua generally, with focus on:
    a. Articulation of what Treaty principles will underpin the strategic framework
    b. Exploration of what sustainability and sustainable outcomes mean to mana whenua
    c. Exploration of how a te ao Māori worldview can be used to develop a City Portrait, including examination of the doughnut economics model
4. Similarly improving partnership with the Dunedin community and to promote the collaborative effort needed for success
5. Reviewing and updating DCC's strategies and reviewing these against strategic priorities identified through the City Portrait process
6. Enabling implementation of defined sustainable outcomes and ongoing monitoring and adjustment of the strategic objectives, while maintaining an integrated and collaborative approach
7. Reviewing levels of service in alignment with the updated strategic priorities

The outcome of the project is the revised strategic framework, together with the Thriving Cities tool embedded as a means of defining and measuring sustainability outcomes. In addition to defining strategic objectives and priorities, the project process is likely to result in improved partnerships with mana whenua and the community.

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6.3 PROJECT PLAN

A proposed project plan is set out in 5 stages. Stages 1 and 2 are defined in some detail, but the later stages will be better defined closer to the time of implementation.

Project Stage	Proposed Timing
Stage 1: Establishment /Governance	June /July 2021
Stage 2: Definition	June 2021 – March 2022
Stage 3: Community Feedback	March 2022 – June 2022
Stage 4: Strategy Refresh	May 2022 – December 2022
Stage 5: Implementation	January 2023 onwards

An outline project programme is included as Appendix 1.

6.4 STAGE 1: ESTABLISHMENT /GOVERNANCE

6.4.1 STAGE 1 OBJECTIVES

The purpose of this short stage is to work through project logistics and set up the governance and mana whenua working structures and groups that will be needed throughout the project and carry through into implementation of the revised strategies.

6.4.2 TASK BREAKDOWN

These tasks will need to be carried out by DCC.

Task	Primary Objective/s output
1. Governance group	A governance/project control group needs to be set up to oversee the project (and potentially implementation of the strategic framework – depending on member selection). This should comprise DCC staff with knowledge of the strategic framework, the project manager and could also include Council and Mana Whenua members. The group will need to review the project plan and set Terms of Reference.
2. Mana Whenua partnership group	A Mana Whenua working group needs to be established to serve as a touchpoint for DCC for this project. Collaborating with mana whenua at the earliest stages of the project will demonstrate a commitment to the principles of the Treaty and an intent to partnership. This workstream will continue for the duration of the entire refresh project and will involve activities as directed by mana whenua (developing a mana whenua city portrait, developing a Māori strategic framework or inputs to the overall framework etc). Learnings from this project will be able to be taken forward into a wider ongoing partnership with mana whenua.
3. Prepare project briefs and appoint external consultants	Appointment of specialist resource for those tasks where DCC identifies the need for external help and briefing of internal resources who will be tasked with supporting this work.

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6.4.3 TIMING /RESOURCING

In order to meet project objectives, this establishment task should be complete by August 2021, noting that where feasible, some of the stage 2 work streams (see below) could begin earlier than this time. It is assumed that DCC staff will carry out these tasks.

STAGE 2: DEFINITION

6.4.4 STAGE 2 OBJECTIVES

The aim of Stage 2 is to set up the refresh of individual strategies for success. Stage 2 will define overarching parameters that promote an integrated approach to framework refresh and use the partnership established with mana whenua in stage 1 to help develop perspectives on integrating a Māori worldview with the City Portrait and Strategic Framework Refresh. Stage 2 deals with the 'preliminaries' necessary to ensure that DCC strategies:

- Are the most appropriate strategies for Dunedin at the present time
- Are informed by guiding principles of sustainability and The Treaty of Waitangi
- Are overseen and governed appropriately and in an integrated manner
- Can be reviewed and updated using a consistent approach
- Are informed by Dunedin mana whenua, communities and organisations in an inclusive manner
- Highlight tradeoffs in decision-making, across the framework (as decisions taken in one area impact on another)
- Have performance metrics that reflect the aspirations of DCC and the wider community that can be understood, monitored and reported on regularly
- Can be reviewed, assessed and measured in the future using an integrated and collaborative approach within DCC and with mana whenua and the community

In addition, Stage 2 will demonstrate the City Portrait tool as a way of defining and measuring sustainable outcomes for the City and will demonstrate and give confidence to DCC in the Thriving cities approach as a means of improving internal collaboration and highlighting the tradeoffs that need to be made in Council decision-making.

6.4.5 STAGE 2 APPROACH

The definition task is proposed to be carried out predominantly internally (within DCC) to make sure that DCC has clear understanding of its status quo with respect to strategic goals and the Thriving Cities approach prior to engaging more widely with Dunedin.

It is proposed to complete these preliminaries in time for the initiative to be included within the draft Annual Plan consultation beginning in March 2022. This is considered appropriate to address the tradeoffs between needing to integrate the strategies and needing to do the reviews.

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6.4.6 STAGE 2 TASK BREAKDOWN

Seven workstreams are proposed in Stage 2 as follows.

Workstream	Primary Objective/s output	Primary Method
1. Initial City Portrait	Prepare an initial City Portrait based on existing DCC information and use this process to: • Enable DCC to assess and understand the current state of their strategies • Understand how DCC existing strategic goals and LOS (across the framework) reflect the lenses of the Thriving Cities model. • Identify 'gaps' in strategic goals and LOS. • Understand DCC measurement metrics across the framework - assess suitability /gaps • Propose a common 'sustainability principle' • Review and propose strategies /performance metrics suitable for DCC's /Dunedin's current aspirations • Improve DCC staff understanding of the model	Desktop data collection and analysis Workshops
2. Mana Whenua partnership: exploring the City Portrait and principles of te Tiriti	Collaborate with mana whenua in development of the City Portrait work towards defining and incorporating strategic goals and outcomes desired by mana whenua and exploring an iwi/ Māori expression of 'the doughnut'; Explore approaches to incorporating the principles of the te Tiriti/Treaty of Waitangi in the strategic framework and City Portrait	Hui Workshops with DCC
3. Governance group: approach to the strategic framework	The PCG develop an agreed internal approach to oversight & management of the framework to ensure consistency and integration over the long-term	Internal meetings & review Workshop
4. Development of overarching strategic guidance /framework	Develop an integrating document to cover overarching principles and processes to be followed by all strategy owners	Desktop analysis based on project outputs Workshop /Review
5. Engagement Plan for Stage 2	Prepare for wider community and stakeholder engagement as part of the Stage 2, to introduce the initial Thriving Cities portrait and the concepts of longer-term engagement	Desktop exercise based on project outputs and DCC /mana whenua knowledge of community
6. Levels of Service Reporting Framework	Parallel project to review Levels of Service for the 2024-34 10-year plan, based on the renewed strategic framework. This project may be lead by another team inside DCC, but close coordination is needed with the refresh project team, especially in later stages.	Desktop analysis
7. Council Approval	Report to Council with a proposal for the next stages	As per usual DCC processes

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6.4.7 STAGE 2 TIMING

The following outline programme is proposed for stage 2. The timing of this stage is based on the Annual Plan preparation and then consultation scheduled in March 2022. The update of DCC's strategies and ongoing community engagement with their implementation is considered an important topic; there is therefore a driver to have Stage 2 completed in time for inclusion in this process. The proposed timeline for Stages 1 and 2 is shown in Figure 7, highlighting the number of concurrent tasks. There is a significant amount of analysis and coordination needed to make sure that all of these tasks are able to be completed in the required timeframe, to a level that enables progress to continue.

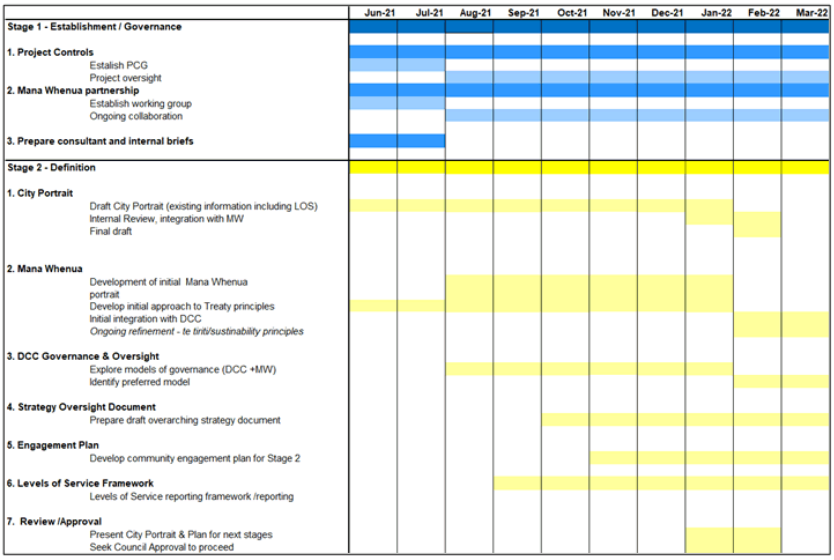

FIGURE 7 STRATEGIC FRAMEWORK REFRESH PROJECT: STAGE 1 AND 2 OUTLINE PROGRAMME

6.4.8 STAGE 2 RESOURCING

Stage 2 will require additional or external resources to those currently available to DCC. Potential ways of resourcing Stage 2 are suggested below.

Stage 2 Work Task	Resources required	Resource suggestions
Project Control /Management	• Project Control Group • DCC Project Manager • City Councillors (if desired)	This needs to be internal to DCC (existing resource or secondment to team) Stage 2 includes a number of workstreams, many of which will need to be carried out concurrently at times. It will be efficient for the PM to be directly involved in the analytical work and so it is proposed that the PM role is a full-time role or part-time supported by additional internal or external resources. Beyond Stage 1, this role may need to continue part time, evolving into oversight of the strategy refresh and implementation, as part of the governance group.

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City Portrait	• Analyst/s • Workshop design/facilitation • Technical support for DCC staff on City Portrait model	DCC staff will ideally manage and carry out at least some of this task as they are best placed to track down information and work on the ground with DCC teams. External consultant support for development of Thriving Cities portrait and workshops – ideally paired with DCC PM and PCG to increase their confidence in using the approach
Mana Whenua	• Project Manager (Māori Strategic Partnerships) • Resource to work with Mana Whenua and to enable mana whenua to work: support/enable their analyses, facilitate working with DCC directly • Technical support for exploration/alignment of Thriving Cities/doughnut economics approaches	Internal DCC resources (ideally including PM and PCG at times). DCC does not currently have sufficient internal resources to carry out this work, especially on an ongoing basis. External resources are likely to be needed – potentially could be from Aukaha, Universities etc. Partnering more junior resources with the lead resource could help develop capability at DCC. External consultant support if/as needed for Thriving Cities model and facilitation
DCC Governance & Oversight	• Analyst /Facilitator	Internal /external as desired
Strategy Oversight Document	• Analyst	Internal /external as desired
Engagement Plan	• Plan writer for Stage 2 engagement plan (consultation with community during Annual Plan process)	Internal DCC resources if available, potentially as per Annual plan team. External specialist support which can then also be used in Stage 2 to help work with the community and in Stage 3 to define ongoing engagement requirements (and resource needs) as part of implementation. Potentially technical support to advise on preparation of collateral about Thriving Cities.
Levels of Service review	• Analyst	Internal DCC Resources
Review /Council Approval	• PCG, PM	Internal DCC resources, as per usual practice.

STAGE 3 - COMMUNITY FEEDBACK

The purpose of this Stage is to socialise the initial City Portrait and the Thriving Cities approach to sustainability and collaboration. In doing so, the current state of DCC's strategies and how these are measured can also be put forward for comment. This stage will:

- Seek feedback from the Dunedin community on the draft City Portrait and Thriving Cities approach. It could ask questions such as:
    - These are our current strategic objectives - are they the right ones for Dunedin? What is missing? What else could you recommend? Where should we be heading? How do you think the community could work with DCC to implement this? How would you like DCC to involve you going forward? How often do you think we should review the City Portrait?

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- Carry out revision (if any) of the metrics, levels of service and measurements to be used in the strategic framework refresh, based on community feedback.

This will be an important phase of the project and it is important to set the tone of genuine, broad collaboration with the community. Two particular risks are noted:

- It will be important to be clear in communications that this is the first iteration of the City Portrait and a regular revision cycle will occur – at this early stage it is advised to seek ideas for how people would like to be involved. It will also be important to emphasise that the Thriving Cities framework enables changes to be made over time – DCC can see what works in the first year after the initial refresh and adjust its approach to suit.
- It is proposed to carry out this consultation as part of the Annual Plan process. This will streamline effort for DCC and also reduce communications with the community (and the number of Council Initiatives that they need to respond to). However, without designing in a process to capture a wide range of community voices, there is a risk that consultation may only occur with the stakeholders that respond to the Annual Plan. The design of the engagement process in Stage 2 needs to make sure that the voices of as many community members and groups as is practicable can be heard.

STAGE 4 - STRATEGY REVIEW AND UPDATE

The purpose of this stage is to carry out the Framework Refresh, informed by the information and analysis of Stages 1 and 2. The output of this phase is the revised strategic framework and reviewed, up to date individual strategies.

In this stage DCC will:

- Carry out revision and update of the strategic framework and individual strategies (lead by individual strategy holders)
- Update the City Portrait with new objectives and targets if necessary
- Develop an implementation / engagement plan for implementation of the Strategic Framework – including proposed processes for aspects such as:
    - 'Re-taking' the City Portrait at regular intervals
    - Ongoing examination of strategic objectives
    - Ongoing development of Treaty principles
    - Ongoing review and reporting of performance measures
    - Ongoing community involvement
- Review Levels of Service for the 2024-34 10 year plan, based on the updated strategic framework

STAGE 5 - ONGOING IMPLEMENTATION

This is not a new stage of the refresh project itself but represents the beginning of implementation of the refreshed framework- using the metrics and approaches developed through the earlier stages.

7.0 CONCLUSIONS

DCC has undertaken a project to explore the Thriving Cities model, the concepts behind it and how it could be applied in Dunedin. This has consisted of training and exploration workshops with a number of DCC staff and stakeholders.

Feedback on the model has been positive. One key aspect of feedback has been a desire to undertake a City Portrait to practically demonstrate to all DCC stakeholders how the model can be applied within the wider DCC operating context. This would also have the benefit of examining and reviewing DCC's current strategic goals, KPIs and measurements in an integrated fashion and provide a sound basis for the overall strategic framework refresh. This has been incorporated into the project plan.

The Thriving Cities model aligns well with a te ao Māori worldview and mana whenua have expressed an interest in using this approach to progress work with DCC with respect to developing a Māori strategic framework and/or principles of the Treaty of Waitangi. DCC will need to resource this collaboration with mana whenua to make sure that it is a partnership.

A project plan for the strategic framework refresh has been developed. The plan balances the need to provide integrating principles for the individual strategy reviews, with the need to undertake the reviews.

Using the Thriving Cities – City Portrait tool presents opportunities to DCC. In addition to providing DCC with a means to undertake a holistic examination of what sustainability means for Dunedin, the tool could help enable an effective and mutually agreeable partnership with mana whenua. The tool can be used to promote more effective community engagement and to engage local communities, organisations and businesses more effectively in the business of helping Dunedin to thrive. There is also opportunity for DCC to stop benchmarking itself against other local govt organisations at a time where the function and purpose of local government is being examined. To enable a City to thrive, to engage its citizens and mana whenua and create movement towards a 'safe and just space' for its community is a way for DCC to show leadership in this space.

8.0 NEXT STEPS

The next stage in the refresh project is to submit a report to Council for approval to proceed. If approved, DCC will need to:

- Appoint a Governance Group, Mana Whenua partnership group and Project Manager
- Determine internal reporting lines (e.g. to Council as a whole, to a committee)
- Determine the internal resources available to assist with the project and then based on this -
- Appoint external consultants needed to assist with the project

This will need to be done by August to meet the programme as envisaged. It is important to note that if this cannot be done by August – this does not mean the project cannot proceed, it simply means that some of the initial analysis may need to be more high-level than envisaged. The Thriving Cities tool does not require perfection – it simply requires a willingness to engage with its concepts and a desire to get started. As a tool designed to be used over the long-term, the City Portrait can be improved and refined over time.

9.0 LIMITATIONS

9.1 GENERAL

This report is for the use by Dunedin City Council only and should not be used or relied upon by any other person or entity or for any other project.

This report has been prepared for the particular project described to us and its extent is limited to the scope of work agreed between the client and Harrison Grierson Consultants Limited. No responsibility is accepted by Harrison Grierson Consultants Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.

APPENDICES

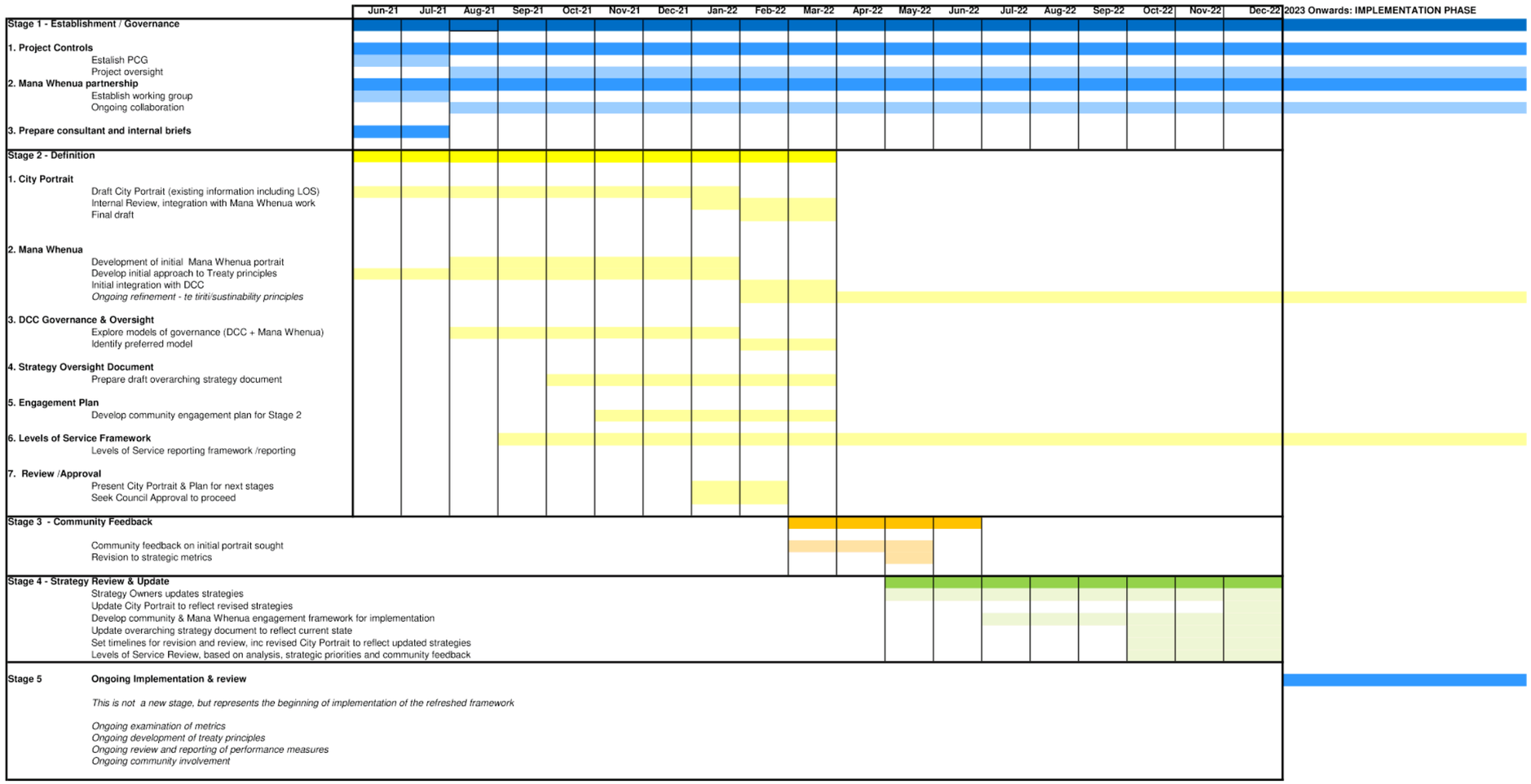
APPENDIX 1

OUTLINE PROJECT PROGRAMME

HG PROJECT NO A2110739

Strategic Framework Refresh Project: Outline Programme

Objectives: Provide an overarching approach to governance and implementation to promote a consistent and collaborative approach to developing & implementing strategies
Update and refresh DCC's strategic framework and strategies to reflect the city's current aspirations and needs



MAORI STRATEGIC DEVELOPMENT

Department: Executive Leadership Team

EXECUTIVE SUMMARY

1 This report provides an update on Māori strategic development activities being led by the Kaiwhakamāherehere in collaboration with staff.

2 Included is an update on the development of a Māori Strategic Framework and priority areas that flow out of this work. Also provided is an update on mana whenua partnership and Aukaha and DCC partnership activities.

RECOMMENDATIONS

That the Council:

a) **Notes** the Māori Strategic Development update report.

BACKGROUND

3 From December 2020 the Kaiwhakamāherehere has initiated several Māori strategic development activities to progress work across three main areas;

- The development of an overarching Māori strategic framework that begins to set out key directions for Māori.
- The development of strategic priority areas for the DCC that will enable staff to deliver on outcomes for Māori.
- The strengthening of partnership with mana whenua.

DISCUSSION

Māori Strategic Framework

4 The DCC's current strategic framework is underpinned by the guiding principles of both the Treaty of Waitangi and Sustainability. A clearer representation of these guiding principles is being explored as part of the strategic framework refresh.

5 As a first step in the refresh of DCC Strategic Framework, staff commissioned consultants Harrison Grierson to provide an initial high-level stocktake of the existing framework. The evaluation included analysis of the framework itself, DCC staff and Councillor feedback, a survey

of existing governance groups and mana whenua feedback. In relation to Māori strategy development, the Harrison Grierson report recommended developing a structure with mana whenua through which mana whenua can work with the DCC to develop an overarching Māori strategy that identities priorities for mana whenua; and outlines opportunities to integrate Te Ao Māori and Treaty of Waitangi principles into all DCC strategies and implementation.

6 Feedback from key mana whenua representatives on the existing DCC strategic framework included potential improvements to the strategic framework in terms of Treaty of Waitangi commitments; considerations for governance arrangements; embedding Māori-focused outcomes in future strategies and other opportunities around capturing and using Māori data to inform decision making.

7 The Harrison Grierson report together with mana whenua consultation feedback provide a clear direction for the DCC to develop and agree an overarching Māori strategic framework that will deliver clarity and direction for the DCC's commitments to the Treaty of Waitangi.

8 From December 2020, the Kaiwhakamāherehere has worked alongside Rūnaka members from the Māori Participation Working Party to progress discussions in relation to the development of a Māori strategic framework that ensures mana whenua development aspirations are understood and incorporated across the DCC's cultural, economic, environmental and social strategic outcomes.

9 The Kaiwhakamāherehere has been involved in the development of the DCC's Strategic Framework Refresh Project and has worked closely with staff and consultants from Harrison Grierson. The Strategic Framework Refresh project plan reflects how Mana whenua involvement has been built into the duration of the project plan and across every stage of the project. This culturally embedded and responsive approach will be critical to ensuring the DCC's refreshed Strategic Framework demonstrates a working commitment to the Treaty of Waitangi and a Treaty based partnership with mana whenua that delivers clear outcomes for Dunedin's Māori communities.

10 The development of Māori Strategic Framework will ensure Treaty of Waitangi principles are equally applied to all DCC strategies and offer clarity as to how commitments to the Treaty are to be delivered, by whom and how outcomes are to be measured. In addition, there are two key strategic priority areas that will be important for the DCC. The two priority areas that will need to form part of an overarching Māori Strategic Framework are; a Māori engagement plan and a Māori cultural capability plan.

11 A Māori Engagement Plan will be a key component that will guide the DCC's Māori partnership approach. Such a plan would outline how Council will move towards a future where it is business as usual for staff to view Council work through a Māori responsiveness lens and where staff can engage with Māori in an effective, enduring and valued way. The aim of such a plan would be to enable Māori engagement that ensures DCC's partnerships with mana whenua and mataawaka are enduring, effective and valued.

12 A Māori Cultural Capability Plan is another key component that will guide the DCC's Māori partnership approach. Such a plan would help raise the cultural capability and confidence of staff to engage with mana whenua and mataawaka communities. A Māori Cultural Capability plan would support a significant culture shift across the DCC to develop strengthened mana whenua relationships, meet Treaty of Waitangi obligations and develop a set of cultural values that could serve across all DCC engagement, not just Māori.

13 It is intended that as the Strategic Framework Refresh Project plan progresses, the Māori Strategic Framework will also be developed. It will be important that the Māori Strategic work progresses in alignment with the Strategic Framework Refresh project plan.

Mana whenua partnership

14 The DCC's partnership with mana whenua is expressed in a number of ways across a number of different platforms, including the Māori Participation Working Party (MPWP), DCC project governance arrangements and operational partnerships with Aukaha who work on behalf of both Te Rūnaka o Kāti Huirapa ki Puketeraki and Te Rūnaka o Ōtākou.

15 Mana whenua interests are currently represented within the Council's governing arrangements by the MPWP. The MPWP was established as a Councillor advisory panel with the aim of providing greater understanding of Māori needs and aspirations and greater involvement in strategic decision making.

16 The MPWP is co-chaired by the Mayor and the Upoko (Head) of Te Rūnaka o Ōtākou. Māori members of the MPWP are currently made up of two members from Kāti Huirapa ki Puketeraki Rūnaka, two members from Te Rūnaka o Ōtākou and one member from Araiteuru Marae.

17 On 24 February 2021, the Local Electoral (Māori Wards and Māori Constituencies) Amendment Bill passed its third reading to become law. This bill removed a barrier to the ability of Councils to establish Māori wards. As a result, many Councils have been reconsidering the establishment of Māori wards as part of their representation arrangements.

18 Initial engagement in early 2021 was undertaken with Council's key Māori partners to understand the preferences of mana whenua in relation to the establishment of Māori wards. A Representation Review and Māori Wards report was discussed at the MPWP on 17 March 2021 to seek confirmation of the MPWP's position on establishing a Māori ward.

19 At this meeting, discussion was held on the role and representation of a Māori ward in Dunedin and perspectives of both mana whenua and mataawaka present at the meeting were put forward. Mana whenua's position was that they would prefer to continue to develop a strong Treaty partnership relationship with Council. While understanding of this approach, mataawaka had concerns that the broader Māori community voice would be under-represented within Council.

20 It was agreed that time to have a more considered and full discussion with the wider Māori community and Council, on the marae needed to occur. The decision was made not to consider a Māori ward until the 2025 local government elections.

21 The 10 year plan consultation hui in April 2021 held with mana whenua and mataawaka communities, as well as the written and oral submissions received by the DCC, signalled the need to strengthen Māori partnership. Submissions asked for more effective representation and participation in decision making and supported the need for a stronger and more meaningful articulation of Treaty partnership with mana whenua.

22 Given the discussions held by member of the MPWP and the recent feedback received from the broader Māori community, as well as the current climate of change in terms of Councils who have voted to establish Māori wards; it is timely for Council to consider alternatives to the current Māori representation arrangements. This could include having Māori representatives on nominated Council standing committees.

Aukaha partnership

23 In October 2019 DCC and Aukaha signed an operational level Partnership Protocol. The aim of this Protocol was to further the partnership by clarifying an operational interface between Aukaha and DCC staff.

24 The Kaiwhakamāherehere, the Aukaha CEO and the Aukaha senior leadership team have regular fortnightly meetings to maintain high level visibility across a range of operational projects. These meetings provide a mechanism to identify potential issues and challenges and identify projects as exemplars for good partnership processes to begin to use as best practice approaches for effective engagement.

25 The Kaiwhakamāherehere has been working alongside DCC staff to ensure successful engagement with mana whenua to ensure more effective decision making, more robust and lasting solutions and more engaged Māori communities.

26 Below is a brief selection of current operational projects between DCC and Aukaha that the Kaiwhakamāherehere has had some recent involvement with.

- ***South Dunedin Future (SDF)*:** Engagement plans are underway to align the SDF programme to work in partnership with mana whenua and to determine how they will be involved with the project going forward and to develop a shared understanding of the SDF programme.

- ***South Dunedin Library and Community Complex:*** Plans are underway to work in partnership with mana whenua in the design phase of the library build. A collaborative co-design process was undertaken in the initial stages of this project.

- ***George Street upgrade*:** The DCC and mana whenua are working collaboratively on the George Street upgrade project. The cultural narrative, a key component of the project, was prepared by Aukaha and introduced as a guiding document in the early stages of concept development.

- ***Waste Futures*:** The Waste Futures programme was presented to mana whenua, who supported Council's ambitious waste minimisation targets, the move towards new collection arrangements and the diversion of waste (re-use, re-cycle and re-purpose) from landfill. Regular project updates have been provided to the MPWP, with Aukaha completing the Cultural Impact Assessment for the proposed Smooth Hill Landfill.

- ***Kaupapa Centre of Digital Excellence (CODE)*:** The development of a partnership with local Rūnaka and Ngāi Tahu gaming companies is a critical component of CODE. Engagement commenced in 2020 with Te Rūnaka o Ōtākou and Kāti Huirapa Rūnaka ki Puketeraki regarding CODE and shareholding in the company as well as ongoing support for activities such as grants, employment pathways and curriculum development.

- ***Waterfront Bridge Connection:*** Engagement is underway with mana whenua to review the scope of the bridge project and revisit project objectives to include mana whenua values. Discussions with mana whenua have provided a strong foundation from which to progress the Waterfront Bridge project.

- ***Dunedin Tunnels Trail:*** Initial contact has been made with Aukaha at the beginning stages of this project in 2020. A business case and initial designs are being developed and the project team is ensuring that mana whenua are updated as the project progresses.

- ***Mosgiel Pool:*** The DCC and Aukaha are working collaboratively on the Mosgiel pool facility. Aukaha are leading the design process to develop the design narrative and concept visuals that reference the natural landscape and traditional iwi narratives.

OPTIONS

As this is an update report, no options have been presented.

NEXT STEPS

27 Regular reporting to Council on key milestone points of the Māori Strategic Framework will occur in alignment with the Strategic Framework Refresh Project reporting.

28 A report that will consider possible Māori representation arrangements will be prepared for the June Council meeting.

Signatories

Author:	Jeanette Wikaira - Kaiwhakamāherehere
Authoriser:	Sandy Graham - Chief Executive Officer

Attachments

There are no attachments for this report.

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This report enables democratic local decision making and action by, and on behalf of communities. This report promotes the social, economic, environmental and cultural well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	☒	☐	☐
Economic Development Strategy	☒	☐	☐
Environment Strategy	☒	☐	☐
Arts and Culture Strategy	☒	☐	☐
3 Waters Strategy	☒	☐	☐
Spatial Plan	☒	☐	☐
Integrated Transport Strategy	☒	☐	☐
Parks and Recreation Strategy	☒	☐	☐
Other strategic projects/policies/plans	☒	☐	☐

The report aligns with the Council's key strategies and contributes most directly to the strategic principle of the Treaty of Waitangi.

Māori Impact Statement

This report is a direct result of Kaiwhakamāherehere discussions with mana whenua and mataawaka. It has ongoing implications for relationships with mana whenua and mataawaka in Ōtepōti.

Sustainability

This report is in line with the Sustainability principle of the strategic framework, as it discusses relationship agreements with Māori regarding leadership, decision-making, participation, and effective partnership.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

The development of a Māori Strategic Framework is expected to bring greater visibility and clarity as to how current and future corporate planning functions (encompassing long term plans and associated statutory strategies, levels of service and performance measures) are supporting DCC strategic goals, the Treaty of Waitangi as well as meeting statutory requirements.

Financial considerations

There are no financial implications.

Significance

This report is considered to be of low significance in terms of the Significance and Engagement Policy.

Engagement – external

There has been considerable engagement with mana whenua and mataawaka in the development of this report.

SUMMARY OF CONSIDERATIONS
Engagement - internal There has been considerable internal engagement with DCC staff and information for this report has been provided by staff across a range of Departments.
Risks: Legal / Health and Safety etc. There are no known legal or Health and Safety risks.
Conflict of Interest There are no known conflicts of interest.
Community Boards Some of the projects and activities detailed in this report have direct implications for specific Community Boards.

DCC SUBMISSION TO THE DRAFT OTAGO REGIONAL PUBLIC TRANSPORT PLAN

Department: Transport

EXECUTIVE SUMMARY

1 This report seeks approval for a Dunedin City Council (DCC) submission (Attachment B) to the Otago Regional Council's (ORC) 2021/31 Draft Otago Regional Public Transport Plan (Attachment A).

RECOMMENDATIONS

That the Council:

a) **Approves** the DCC submission, with any amendments, to the Otago Regional Council 2021-31 draft Regional Public Transport Plan consultation.

b) **Authorises** the Mayor or his delegate to speak to the submission

BACKGROUND

2 The ORC is seeking feedback on their draft 2021-31 draft Regional Public Transport Plan (RPTP). The deadline for submissions is 23 May. The DCC have been granted an extension until 25 May to enable Council to consider the submission at this meeting. The draft RPTP sets out the objectives and policies for delivering public transport across the Otago region over the next ten years.

3 RPTPs are required to be prepared under part 5 of the Land Transport Management Act 2003. Their purpose is to encourage Regional Councils and operators to work together, engage with the public on network design & operation, and to provide information about policies, services, information and infrastructure.

4 The new ORC RPTP will be given effect through ORC's Long Term and Annual Plans, but at the time of adoption it does not commit to or provide funding.

DISCUSSION

5 DCC staff have drafted a submission in line with current Council strategies and policies. Input was sought from elected members via email. Feedback received from elected members has been included in the submission.

OPTIONS

Option One – Recommended Option – Approve the DCC submission, with any amendments, on the ORC's draft 2021-31 RPTP

6 Approve the DCC submission, with any amendments, to Otago Regional Council's draft 2021-31 RPTP.

Advantages

- Opportunity to show support and highlight pathways for working with the ORC, one of the DCC's major strategic partners.
- Provide feedback on public transport provision in Dunedin, which is relevant to the DCC's strategic and operational work.

Disadvantages

- There are no identified disadvantages for this option.

Option Two – Do not approve the submission

7 Do not approve the DCC submission on the ORC's draft 2021/31 RPTP.

Advantages

- There are no identified advantages for this option.

Disadvantages

- Missed opportunity to show support and highlight pathways for working with the ORC.

NEXT STEPS

8 If Council approves the DCC submission on the ORC draft 2021-31 RPTP it will be sent, with any amendments, to the ORC. The DCC will then speak to the submission during the ORC hearings process.

9 If Council does not approve the DCC submission, no further action is required.

Signatories

Author:	Simone Handwerk - Transport Planning Team Leader
Authoriser:	Jeanine Benson - Group Manager Transport Simon Drew - General Manager Infrastructure & Development

Attachments

	Title	Page
⇩A	Draft Otago Regional Public Transport Plan 2021-31	53
⇩B	Draft DCC submission on ORC draft 2021-31 RPTP	129

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This decision promotes the social, economic, environmental and cultural well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	☒	☐	☐
Economic Development Strategy	☐	☐	☒
Environment Strategy	☒	☐	☐
Arts and Culture Strategy	☐	☐	☒
3 Waters Strategy	☐	☐	☒
Spatial Plan	☒	☐	☐
Integrated Transport Strategy	☒	☐	☐
Parks and Recreation Strategy	☐	☐	☒
Other strategic projects/policies/plans	☐	☐	☒

The RPTP identifies public transport priorities and projects that will be delivered by the ORC over the next ten years. Improving Dunedin's public transport system will contribute to building better communities that make people feel connected and involved (Social Wellbeing Strategy). It will contribute to carbon zero 2030 (Environment Strategy). It will contribute to an accessible, connected and liveable city (Spatial Plan) and a resilient network that provides travel choices and is safe (Integrated Transport Strategy).

Māori Impact Statement

Given the timeframe constraints for submission feedback, staff have been unable to consult with mana whenua on the impacts that may result from a decision to approve the DCC submission.

Sustainability

The DCC submission supports and advocates for improved public transport outcomes that will contribute to carbon zero 2030 objectives.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

There are no known impacts for current levels of service and/or performance measures resulting froma decision to approve the DCC submission

Financial considerations

There are no known financial implications resulting from a decision to approve the DCC submission

Significance

This decision is considered to be of low significance in terms of the Council's Significance and Engagement Policy.

Engagement – external

There was no external engagement on this report

Engagement - internal

Staff from the Transport and Policy departments had input into the draft submission

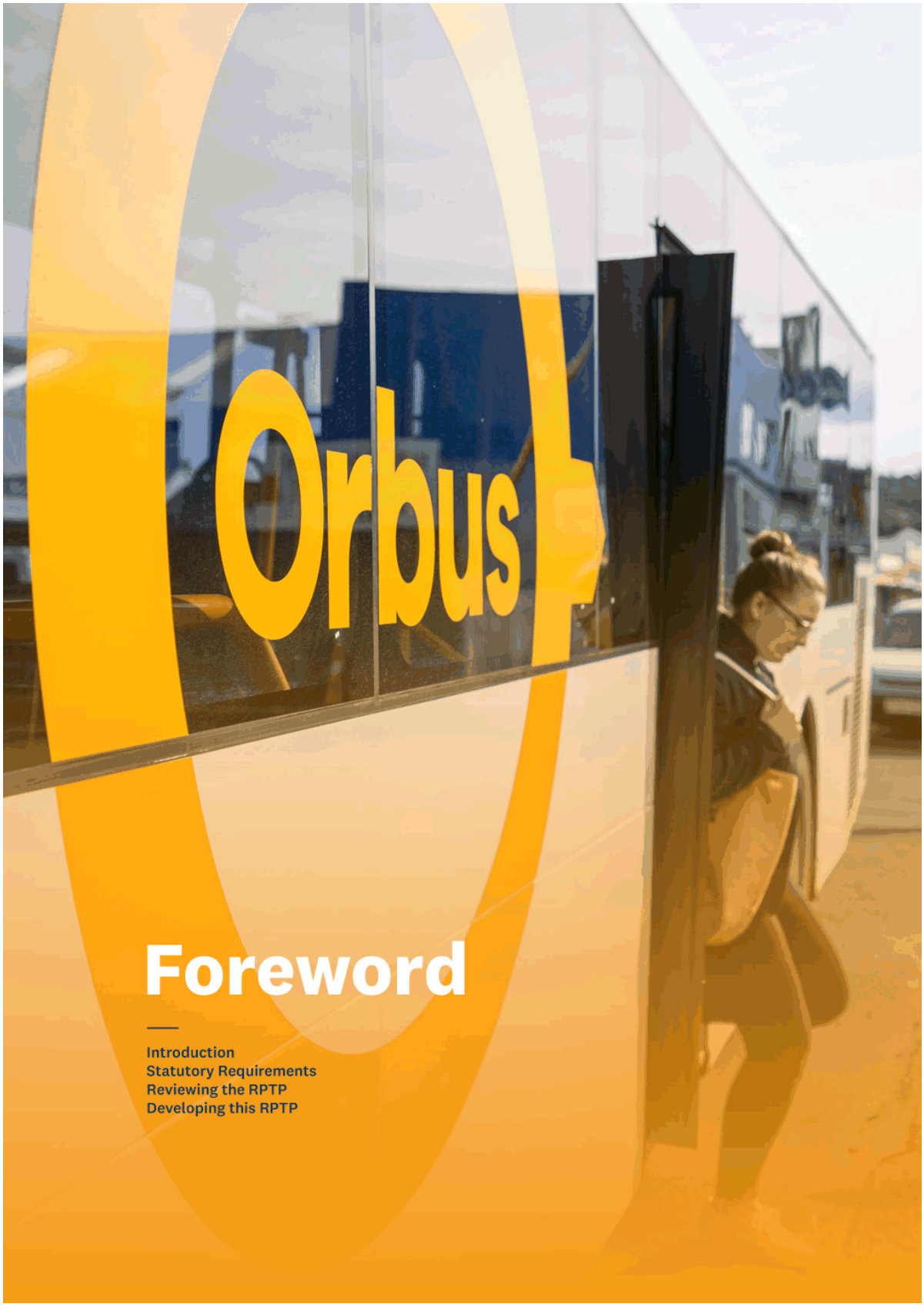
SUMMARY OF CONSIDERATIONS
Risks: Legal / Health and Safety etc. There are no known risks.
Conflict of Interest There are no known conflicts of interest.
Community Boards Issues related to the provision of public transport services to the non-urban areas of Dunedin City are of particular interest to a number of community boards.


2021-2031
Draft Otago Regional Public Transport Plan
Otago Regional Council

Contents

Glossary of Terms

Term	Description
Demand responsive service	Services that operate with flexible routes and schedules that respond to specific passenger needs
Farebox recovery	The proportion of total operating costs that are recovered from users
GPS	Government Policy Statement on Land Transport
LTMA	Land Transport Management Act 2003
NLTF	National Land Transport Fund
NLTP	National Land Transport Programme
Off-peak	Weekdays 9:00 am until 3:00 pm, weekends and public holidays
Operators	Companies that are contracted by ORC to provide public transport services
ORC	Otago Regional Council
Park-and-ride	A facility that allows people to securely leave their personal vehicle (i.e., car, motorbike, cycle) to use a public transport service
Peak	Weekdays before 9:00 am and from 3:00 pm to 6:30 pm
PTOM	Public Transport Operating Model
RLTP	Regional Land Transport Plan
RPS	Regional Policy Statement
RPTP	Regional Public Transport Plan (the Plan)
TAs	Territorial authorities (City and District Councils)
Total Mobility	Subsidised transport for those with impaired mobility who have difficulty with, or are unable to use, scheduled public transport services
Transport disadvantaged	Residents who have limited or no access to basic economic, social, and community services such as employment, health care, shopping etc
Unit	All services that are integral to the region's public transport network are grouped into units
Waka Kotahi	Waka Kotahi New Zealand Transport Agency



Foreword

Introduction
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Foreword

Welcome to Otago Regional Council's draft Regional Public Transport Plan for 2021-31, our strategic document that guides the planning and delivery of public transport services and infrastructure in the Otago region. We are pleased to share this draft for your feedback.

There have been major changes to our economic, social and environmental landscape since the last Regional Public Transport Plan was written in 2014. At the same time, we have made some significant improvements to public transport over the last seven years, including an overhaul of the timetable, new routes in Dunedin and the launch of the $2 Orbus service in Queenstown.

We also opened the Dunedin Bus Hub, have put an increased focus on community engagement and responsiveness, and improved the Total Mobility service providing subsidised travel to people with disabilities.

In just the last year, we launched the Bee Card (a tag on tag off bus card that gives bus passengers cheaper fares in nine regions around New Zealand, including Otago), implemented the interim $2 fare in Dunedin, and we worked closely with our operators to run free buses during the disruption of COVID-19.

While acknowledging all we have achieved, we must keep momentum up. National policy around carbon emissions, a devastating global pandemic and, locally, population growth and changes to our economy impact the way we plan public transport in Otago.

Our government, through the Climate Change Response Amendment Act and the Climate Change Commission report has committed to reducing New Zealand's greenhouse gas emissions to net zero by 2050. Increasing public transport share and with sustainable fleet options supports this goal as it contributes to carbon reduction, while improving air quality.

But our Plan is not only about congestion and the air we breathe. Public transport is at the heart of a healthy community, connecting people with each other and giving them the choice to travel independently to visit family and friends, to get to work and school, to have access to medical care and to study, amongst other things.

That can be challenging in a region as large as Otago, with such a dispersed population. Key facilities, such as the Dunedin Hospital and University of Otago, are geographically remote for many people.

Currently, public transport services are only available in Dunedin and the Wakatipu Basin. The Total Mobility Scheme, supporting those who are unable to catch public transport or drive for specific reasons, is limited to the four centres with the highest populations: Dunedin, Oamaru, Queenstown and Wānaka. This leaves many of Otago's residents without access to public transport.

Around 30% of Otago's population is aged under 14 years old or 65 years old and over. A large proportion of these people are unable to drive for reasons other than being ineligible for a driver's licence, including affordability and mobility impairment.

For some people in our community there is a growing movement to actively choose public transport as a more sustainable way of living.

We need to prepare for growth and cater to a greater reliance on public transport. Significant investment by government has enabled the travel planning partnership of the Otago Regional Council, Queenstown Lakes District Council and Waka Kotahi (previously the NZ Transport Agency) to forge ahead with a number of business cases that will re-shape Queenstown with a more integrated, smarter way to get around. Similarly, in Dunedin, a number of travel projects are being considered in our draft long-term Plan and the Dunedin City Council's draft long-term Plan.

Nationally, the COVID-19 pandemic has changed the way we look at public transport. While we were in Alert Level 4 and Level 3 lockdown, it became clear how important buses and bus drivers are to keeping essential workers moving around.

While the pandemic caused a temporary drop in patronage, particularly in Queenstown, free travel encouraged people to try the bus for the first time. When we went back to charging fares with the launch of our smart travel bus card, the Bee Card, our passengers in Dunedin and Queenstown embraced the new system.

This is where we are focusing our efforts:

- Continuing to improve the customer experience
- As that is ultimately what will get more people catching the bus.

Our draft vision for inclusive, accessible, innovative public transport that connects Otago and contributes positively to our community, environment, and economy will guide these efforts.

The ORC public transport team have, along with city and district councils from around Otago and several other stakeholders, identified five objectives to support the vision. From these objectives, they have drafted a number of policies.

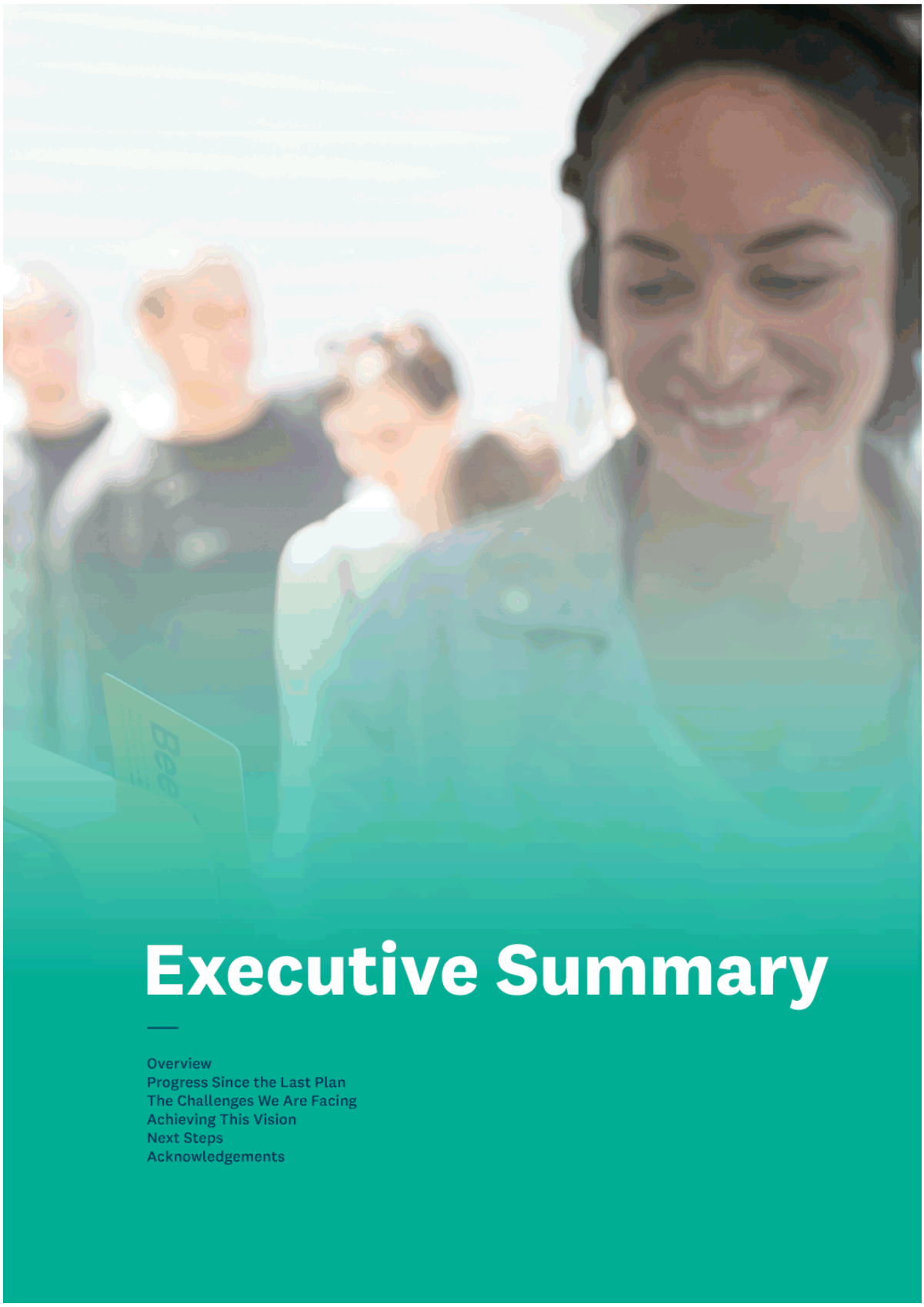
They are about being responsive. We must respond to the national direction for a more climate-resilient future, as well as what our passengers need. To encourage more people to use public transport, it should be more attractive and accessible. This means different things for different people, but generally it's about convenience, access, better infrastructure, and affordability, as well as being well-integrated with other services or ways to travel, like linking cycling and walking options.

The system should also be financially sustainable for those who contribute to it.

We invite you to read this draft plan and tell us what you think. Let us know if our objectives and policies will help us to grow with Otago and the specific needs of our community, where public transport is key to connecting us more easily, more often.

Signed

Andrew Noone
Chairperson
Otago Regional Council



Executive Summary

Executive Summary

Overview

A well-used public transport system is fundamental to the success of Otago. It is critical that we have a plan to identify public transport needs and opportunities and set out the means to deliver those.

The Otago Regional Public Transport Plan (RPTP) is a strategic document that guides the planning and delivery of public transport services and infrastructure in Otago. It sets out the changes to our public transport system for the next 10 years from 2021 to 2031.

This draft RPTP includes our vision for public transport in Otago and the five objectives that will guide implementation of this Plan. These objectives will help achieve the vision, whilst reflecting the issues which have been identified through consultation, and wider national, regional, and local policy context.

The objectives form the basis of the policies, which are described in the last part of the plan.

Progress Since the Last Plan

Our focus since the last RPTP was written in 2014, has been on improving customer service.

We have:

- Implemented new routes and services in Dunedin and Queenstown to provide better network coverage and frequency;
- Opened the Dunedin Central City Bus Hub;
- Provided frequent community engagement events to listen to feedback from our community on the changes made in the last plan;
- Introduced a new route into Queenstown;
- Rolled out the new Bee Card ticketing system on both networks with about 43,000 registered cards currently;
- Provided free services for a series of events including major community events such as the Dunedin's New Year Fireworks and Waitangi Day celebrations at Ōtākou Marae;
- Launched real time passenger information in Queenstown;
- Provided free buses during and after COVID-19 Alert Level 4 lockdown with an additional several months free travel for SuperGold Card holders in Queenstown and Dunedin;
- Improved communication services including a handy fold-out network map, dedicated button on Dunedin's My Little Local App and the On Board with Orbus newsletter;

- Introduced an interim single zone structure with a $2 flat fare in Dunedin;
- Supported a Lake Wakatipu ferry service;
- Undertaken significant planning for future public transport infrastructure required with approval of relevant business cases;
- Supported total mobility customers, including moving to an electronically based system and new hoists into total mobility accessible vehicles.

The Challenges We Are Facing

We identified several challenges with key stakeholders that need to be addressed:

- Reduce the impact on the environment;
- Increase access to the public transport system;
- Make public transport more attractive for users;
- Make the public transport changes required in a constrained funding environment.


Our Vision for Public Transport
Inclusive, accessible, and innovative public transport that connects Otago and contributes positively to our community, environment and economy.
ORC RPTP 10

To support this Vision, key priorities identified are (Figure 1):

1. Improve the customer experience with the goal that more people choose to use public transport, more often;
2. Improve environmental health by supporting the introduction of zero emission vehicles into the fleet to reduce greenhouse gas and particulate matter emissions;
3. Capitalise on new technology and opportunities for innovation; and
4. Be cost effective such that the improvements to public transport provide value for money and ensure that the right investments are in place at the right time for the greatest number of current and potential users.

Figure 1: Key Priorities

Achieving This Vision

Five objectives will guide implementation of this Plan. These objectives will help achieve the vision, whilst reflecting the issues which have been identified through consultation, and wider national, regional, and local policy context.

The objectives form the basis of the policies, which are described in the last part of the plan.

Objective One
Contribute to carbon reduction and improved air quality through increased public transport mode share and sustainable fleet options.

Objective Two
Deliver an integrated Otago public transport network of infrastructure, services and land use that increases choice, improves network connectivity and contributes to social and economic prosperity.

Objective Three
Develop a public transport system that is adaptable and able to effectively respond to change.

Objective Four
Establish a public transport system that is safe, accessible, provides a high-quality experience that retains existing customers, attracts new customers and achieves high levels of satisfaction.

Objective Five
Deliver fares that are affordable for both users and communities.

Next steps

Otago Regional Council is now seeking input from the community on this Plan.

Once this feedback is received, the plan will be updated to reflect community feedback. A final RPTP is scheduled to be complete by July 2021.

Acknowledgements

Otago Regional Council has engaged with a number of stakeholders in preparing this draft RPTP, and would like to thank them for their contribution.

In alphabetical order:

- **Anglican Family Care**
- **Arrowtown Village Association**
- **Blind Citizens Otago**
- **Blind Low Vision**
- **Bus User Support Group Ōtepoti (Bus Go)**
- **Central Otago District Council**
- **Clutha District Council**
- **Destination Queenstown**
- **Disability Information Services**
- **Dunedin City Council**
- **Frankton Community Association**
- **Grey Power Dunedin**
- **Jacks Point Residents Association**
- **Otago Chamber of Commerce**
- **Otago Deaf Society**
- **Otago Peninsula Community Board**
- **Otago University Students Association (OUSA)**
- **Queenstown Lakes District Council**
- **South Dunedin Community Network**
- **Spokes**
- **The Disabled Persons Assembly**
- **Trails Trust**
- **Waikouaiti Community Board**
- **Waitaki District Council**
- **Waka Kotahi NZ Transport Agency**
- **West Harbour Community Board**

1.0 Background

Introduction
Statutory Requirements
Reviewing the RPTP
Developing this RPTP

1.0 Background

1.1 Introduction

Otago Regional Council (ORC), together with its partner agencies[1], has prepared this Regional Public Transport Plan (RPTP) to set out the objectives and policies for delivering public transport in Otago over the next 10 years, 2021 to 2031. It is a strategic document that will direct ORC's focus and investment over the coming decade and provide clear direction on how to respond to future challenges and opportunities.

This RPTP describes the proposed public transport services that will meet the needs of new and existing customers and the policies which those services will operate under. It also explains how ORC will work in partnership with operators and city and district councils in Otago, known as territorial authorities.

This RPTP replaces the Otago RPTP (2014-21).

1.2 Statutory Requirements

The RPTP is required by the Land Transport Management Act (LTMA) 2003[2]. The purpose of the Plan is to provide:

1) A means for encouraging regional councils and public transport operators to work together in developing public transport services and infrastructure.
2) An instrument for engaging with the public in the Region on the design and operation of the public transport network, and a statement of:
   - The public transport services that are integral to the public transport network;
   - The policies and procedures that apply to those services; and
   - The information and infrastructure that support those services.

1.3 Reviewing the RPTP

In 2014, The Otago Regional Council published its RPTP. The 2014 RPTP was updated in 2017 and 2019 through three addendums outlining changes to the 2014 plan. This RPTP is now being updated to:

1) Meet the statutory requirements of the Land Transport Management Act.
2) Align with updated policy and strategy documents, specifically, the new Government Policy Statement on Land Transport (2021), the draft Otago Southland Regional Land Transport Plan and development of a new Otago Regional Policy Statement.
3) Embrace the evolution of transport technology that has led to a number of exciting opportunities, which are improving our ability to plan and operate public transport as well as improving the overall customer experience. We have already seen this implemented in our region, most recently through the rollout of the Bee Card ticketing system.
4) Assist in the implementation of various projects delivered by Connecting Dunedin and Way to Go partnerships, which are driving transformative changes to the transport systems in these areas.
5) Take into consideration the impacts, and opportunities due to COVID-19.
6) Take in to consideration changed community expectations to do with regional connectivity and climate change.

These changes present an opportunity to refresh the strategic direction and policies of our Plan to ensure it is helping us to deliver the kind of public transport network that our customers need.

1.4 Developing this RPTP

This RPTP has been prepared in collaboration with:

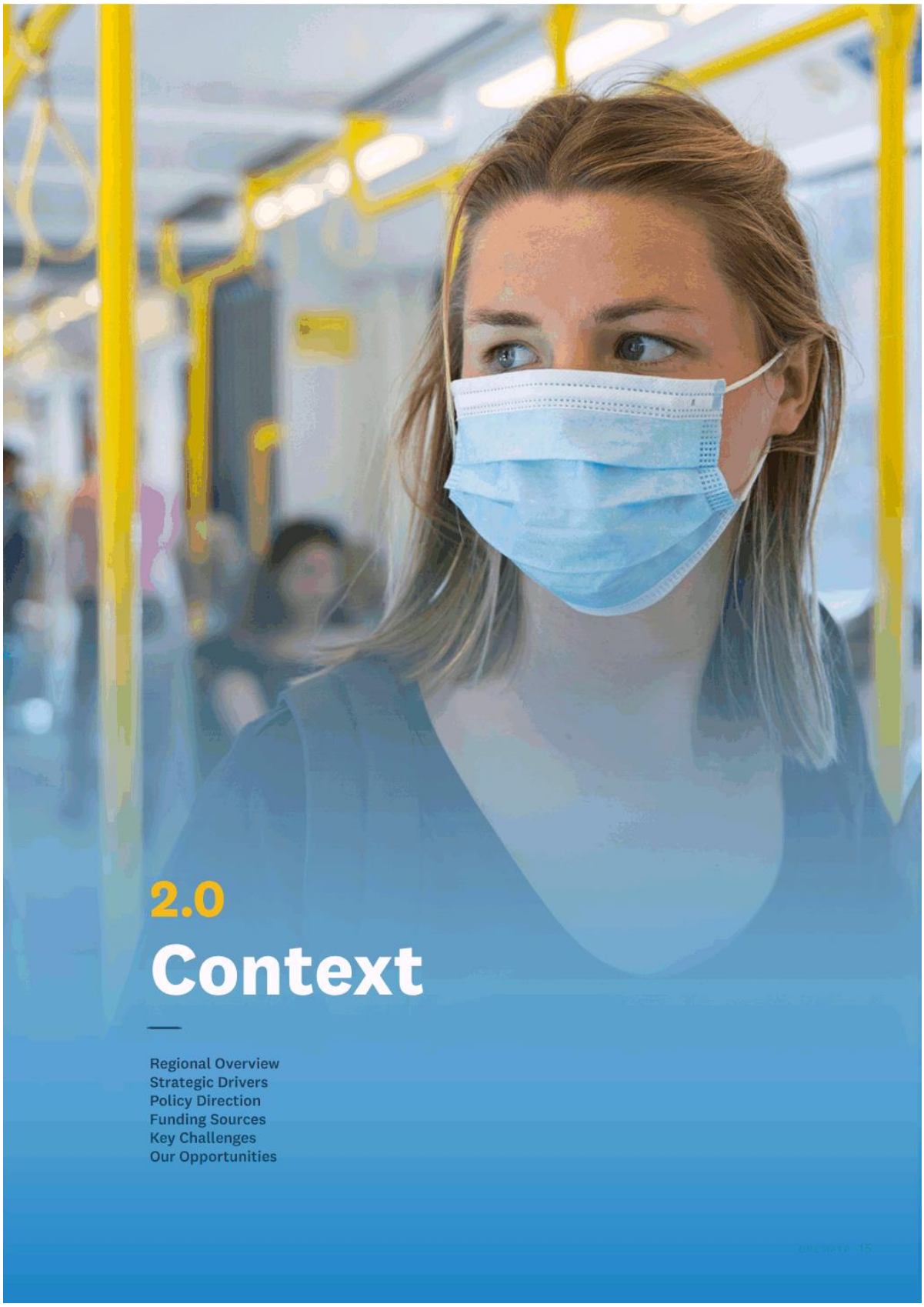
- The territorial authorities in Otago (Dunedin City Council (DCC), Queenstown Lakes District Council (QLDC), Central Otago District Council (CODC), Clutha District Council (CDC) and Waitaki District Council (WDC)).
- Waka Kotahi NZ Transport Agency,
- Transport partnerships[3];
- Otago's public transport operators; and
- Stakeholders, including a range of community and disability groups to ensure that we have perspectives from those who are often most reliant on public transport.

[1] Dunedin City Council, Queenstown Lakes District Council, Central Otago District Council, Clutha District Council and Waitaki District Council, as well as Waka Kotahi

[2] https://www.legislation.govt.nz/act/public/2003/0118/latest/DLM226230.html

[3] **Connecting Dunedin** is a transport partnership between the Dunedin City Council (DCC), Otago Regional Council (ORC) and Waka Kotahi, working to ensure good alignment and co-ordination of key transport projects and programmes in Dunedin. A Programme Business Case is currently being finalised, with a focus on improvements to transport in the Central City to accommodate the new Dunedin hospital. The Programme Business Case includes a range of active transport, safety, efficiency, parking, public transport and travel demand management improvements and initiatives.

Way to Go is a collaborative working group made up of partner organisations Waka Kotahi, Queenstown Lakes District Council and Otago Regional Council. The partnership is responsible for delivering transport improvements for the Wakatipu Basin. A Queenstown Business Case has recently been completed with a focus on travel demand management, public transport initiatives, greater use of intelligent transport systems, parking management and urban realm improvements



2.0 Context

Regional Overview
Strategic Drivers
Policy Direction
Funding Sources
Key Challenges
Our Opportunities

2.0 Context

2.1 Regional Overview

The Otago Region is made up of five territorial authorities – Central Otago District Council, Clutha District Council, Dunedin City Council, Queenstown Lakes District Council and Waitaki District Council.

Figure 2 shows the key settlements with over 1,000 residents and the transport network (road and rail) that connect them. It also shows the location of Otago's two public transport networks, servicing the wider Dunedin City urban area and Wakatipu basin catchment.

Figure 2: Otago's Key Settlements and Public Transport Networks

2. 2 Strategic Drivers

2.2.1 Network Coverage

Much of Otago is sparsely populated. Most towns and cities are some distance from each other or separated by significant landforms such as rivers or mountain ranges. This means that many communities must travel a long distance to essential services. Around 80% of the population live in towns with more than 1,000 residents.

Table 1 (please see following page) shows the settlements with 1,000 or more residents ranked by population (highest to lowest). Those highlighted in yellow are provided with public transport services as part of the Dunedin Orbus network, and those in blue as part of the Wakatipu Orbus network. The other settlements have no public transport service (but may have access to commercial services). For those without a public transport network, the table shows travel distances to either Dunedin and Queenstown, whichever is the closer.

Table 1: Otago's Urban Centres

Urban Centre	Territorial Authority	Population (NZ Statistics 2020 Estimates)	% of Region	Km to Dunedin (via SH network)	Km to Queenstown (via SH network)	Total Mobility Available
Dunedin	Dunedin	106,200	43.3%		279km	✓
Queenstown	Queenstown Lakes	16,000	6.5%	279km		✓
Mosgiel	Dunedin	14,600	6.0%	15km	267km	✓
Oamaru	Waitaki	13,700	5.6%	160km	286km	✓
Wanaka	Queenstown Lakes	11,500	4.7%	270km	111km	✓
Cromwell	Central Otago	6,480	2.6%	220km	60km	
Lake Hayes	Queenstown Lakes	6,240	2.5%	265km	14km	✓
Alexandra	Central Otago	5,790	2.4%	190km	90km	
Balclutha	Clutha	4,230	1.7%	80km	238km	
Arrowtown	Queenstown Lakes	3,030	1.2%	266km	19km	✓
Milton	Clutha	2,210	0.9%	55km	224km	
Lake Hawea	Queenstown Lakes	1,700	0.7%	279km	117 km	
Brighton	Dunedin	1,540	0.6%	17km	268km	✓
Jacks Point, Hanleys Farm	Queenstown Lakes	1,260	0.5%	282km	15km	✓
Arthurs Point	Queenstown Lakes	1,260	0.5%	279km	6km	✓
Waikouaiti	Dunedin	1,250	0.5%	40km	260km	✓
Clyde	Central Otago	1,200	0.5%	198km	85km	
Ranfurly	Central Otago	1,060	0.4%	132km	171km	
Palmerston	Dunedin	1,000	0.4%	54km	246km	✓
Subtotal		199,520	81.5%			
Other Rural population		45,780	18.5%			
Total Otago Population		245,300	100.0%			

Intra- and inter-regional services are provided by commercial operators and use the national State highway network (State Highway 1, 6, 8) to connect the more populated towns.

2.2.2 Population Growth

Otago's population is forecast to grow from a population of 235,000 in 2018 to 259,500 (+24,500) in 2028 and 273,300 (+38,300) in 2038, for a medium forecast growth scenario, as illustrated in **Figure 3**. Whilst growth will remain static in some districts (<10%), Queenstown Lakes District and Central Otago are among the highest growing areas of New Zealand with +27% and +19% population growth forecast respectively, refer to **Table 2**. While this is pre-COVID, current long-term forecasts expect population and tourism to pick up to these original forecasts.

Figure 3: Projected population growth for Otago (2018 to 2038)[4]

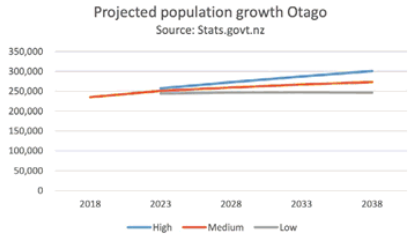


Table 2: Forecast Population growth by Territorial Authority Area

	2018	2023	2028	2033	2038	To 2028	To 2038
Population Growth							
Waitaki District	22,900	23,800	24,200	24,500	24,700	**1,300**	**1,800**
Central Otago District	22,200	24,800	26,400	27,900	29,200	**4,200**	**7,000**
Queenstown Lakes District	42,500	50,100	54,100	57,900	61,500	**11,600**	**19,000**
Dunedin City	131,200	135,700	137,900	139,700	140,900	**6,700**	**9,700**
Clutha District	18,050	18,500	18,750	18,900	18,950	**700**	**900**
% Growth Increase (to 2018)							
Waitaki District	-	4%	6%	7%	8%	**6%**	**8%**
Central Otago District	-	12%	19%	26%	32%	**19%**	**32%**
Queenstown Lakes District	-	18%	27%	36%	45%	**27%**	**45%**
Dunedin City	-	3%	5%	6%	7%	**5%**	**7%**
Clutha District	-	2%	4%	5%	5%	**4%**	**5%**

[4]Source: StatsNZ Subnational Population Projections 2018-2048

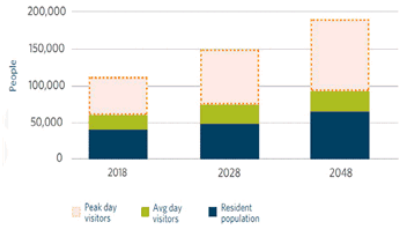
2.2.3 Tourism Growth

Queenstown and Wanaka Growth

In addition to population growth, the Otago economy is driven by tourism, expected to recover post COVID. The population of Queenstown Lakes District is increasing at around 7% per annum, increasing from 30,000 in 2013 to 66,000 by 2048. Much of the growth is concentrated on Queenstown, its surrounds, and in Wanaka. Visitor numbers are expected to grow at an even faster rate (once tourism returns post COVID-19). Wanaka is the fastest growing urban area in the South Island and its growth is accelerating, with both tourism and land development increasing.

Wakatipu is one of the five high growth urban areas identified in the National Policy Statement on Urban Development Capacity (2020)[5]. Since 2005, visitor numbers through Wakatipu airport have increased by 200 per cent to nearly 1.8 million passengers in the year to June 2017. An appreciation of the forecast resident plus visitor growth projections is presented in **Figure 4.**

Figure 4: Growth Projections[6]



2.2.4 COVID-19 Impacts

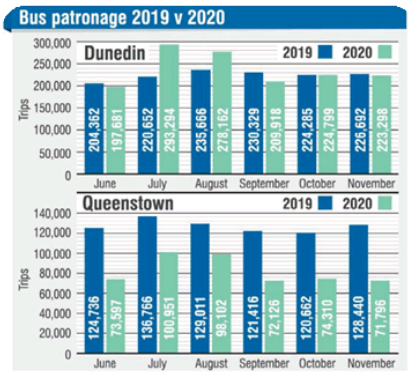
Otago is forecast to be the region most heavily impacted by the COVID-19 pandemic[7], mainly due to the tourism impacts and drop in revenue experienced in the Queenstown Lakes region. Our region has the second highest tourism spend nationally, with 55% of total spend from international visitors. The ability to offset these losses through domestic tourism will be challenged by the high travel costs from urban centres in Otago and elsewhere. Dunedin is generally expected to perform better because of its lower reliance on tourism, and due to its position as a hub for government, education, healthcare, and other related services. Similarly, in our other districts, we expect them to be impacted slightly less than the national average[7].

[5]https://www.mfe.govt.nz/about-national-policy-statement-urban-development
[6]Demand Projections Summary July 2020. Queenstown Lakes District Council.
[7]Arataki Otago Regional Summary. Waka Kotahi NZ Transport Agency.
[8]Source: Otago Daily Times (https://www.odt.co.nz/regions/queenstown/q%E2%80%99town-bus-use-down-44-dunedins-holds-steady)

The COVID-19 pandemic had a significant impact on our public transport network during 2020.

Figure 5 shows that patronage levels have rebounded to pre COVID-19 levels in Dunedin, despite a significant drop in international students. However, the trend has remained in Wakatipu, with patronage sitting just below 50% of pre-COVID-19 levels.

Figure 5: Otago Bus Patronage - 2019 vs 2020[8]



It is likely that levels of demand for the Wakatipu public transport network will continue to remain lower in the short to medium-term, due to the loss of international visitors, seasonal workers and a reduced population overall. Dunedin is expected to continue to perform better because of its lower reliance on tourism, and because it is a hub for government, education, healthcare, and other related services. The network also services a larger permanent population and wider geographical area.

Over previous years, we were making significant patronage gains (from 2.2 million 000 passenger in 2016/17 to 2.5 million in 2018/19), especially since the launch of our Wakatipu services in 2017 (from 490,000 passenger in 2016/17 to 1.5 million in 2018/19). With Government moving to an Alert Level 4 lockdown in March/April 2020, patronage dropped dramatically.

The full scale of the COVID-19 impact is difficult to predict but will bring significant challenges. There are likely to be changes to travel patterns and employment destinations, that the network will have to respond to, as well as communities relying on lower or more fixed incomes. Improving access to employment and essential services for vulnerable communities is vital.

2.2.5 Growth Implications for Public Transport

The rate of growth being experienced in our region will become a real challenge unless we ensure our public transport system can maintain accessibility, connectivity and more generally, protect the liveability for our residents. The continued growth of our region provides an opportunity to ensure that transport infrastructure and land use are closely integrated.

The projected level of urban growth, particularly in Dunedin and the Wakatipu, will require a successful, evolving public transport system that supports key commercial and residential growth areas. In time, the nature of urban growth will provide the right conditions for the public transport system to grow and succeed further.

2.3 Policy Direction

The policy guidance and wider strategic direction for this RPTP comes from several key documents including the Government Policy Statement on Land Transport 2021 (GPS 21)[9], draft Otago Southland Regional Land Transport Plan 2021-2031 (RLTP)[10], Otago Regional Policy Statement (ORPS)[11]. Several parallel business cases also provide direction for this work. Appendix A – Strategic Context discusses these documents and explains their relationship to this RPTP.

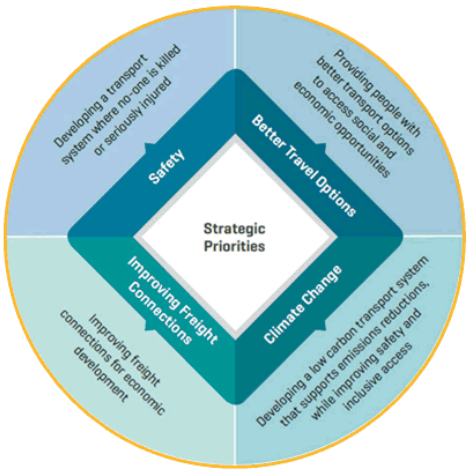
This RPTP is consistent with the draft joint Otago Southland Regional Land Transport Plan 2021-31 and Waka Kotahi NZ Transport Agency guidelines[12]. Part 5 of the LTMA provides a definition of the types of public transport services covered by this plan. National and regional policy direction are in alignment, which provides significant opportunity to improve public transport outcomes for Otago.

2.3.1 Government Policy Statement on Land Transport (GPS) 2021-31

The GPS 2021 is the strategic document that guides investment in the land transport system over the next ten years. It outlines how investment should contribute to several strategic objectives and provides guidance to decision-makers on where Central Government will focus resources and funding. GPS 2021-31 identifies four Strategic Priorities for the land transport system (**Figure 6**):

- **Safety:** Developing a transport system where no-one is killed or seriously injured.
- **Better travel options:** Providing people with better transport options to access social and economic opportunities.
- **Climate change:** Developing a low-carbon transport system that supports emissions reductions, while improving safety and inclusive access.
- **Improving freight connections:** Improving freight connections for economic development.

Figure 6: GPS 2021 Strategic Priorities (see appendix)



[9] https://www.transport.govt.nz/area-of-interest/strategy-and-direction/government-policy-statement-on-land-transport-2021/

[10] At time of writing, the Otago Southland RLTP 2021-31 submissions have closed.

[11] https://www.orc.govt.nz/plans-policies-reports/regional-plans-and-policies/regional-policy-statement

[12] https://www.nzta.govt.nz/assets/resources/guidelines-for-regional-public-transport-plans/docs/guidelines-regional-public-transport-plans.pdf

2.3.2 Otago Southland Regional Land Transport Plan (RLTP) 2021-31

The Otago Southland RLTP sets the direction for integrated transport and land use investment in the Otago and Southland regions. The Plan, currently in draft stage, describes Otago's long-term vision, identifies regional priorities and sets out the transport projects we intend to invest in over the next ten years. The 2021-31 RLTP has been prepared jointly for the Otago and Southland regions, consisting of a common strategic section and two separate programmes of work, recognising the shared understanding that the Otago and Southland transport network exists as an enabler of people and communities.

The RLTP acknowledges transport as a key enabler in meeting community travel needs, influencing the future economic success of the region and the health of our communities. The RLTP focuses on initiatives that enable us to grow in ways that make it easy to get around while reducing congestion and emissions and creating more liveable places. The RLTP identifies several Strategic Priorities for Otago which are applicable to public transport:

- **Creating Genuine Mode Choice** alongside integrated land use and transport planning, is needed to develop genuine alternatives to driving, as well as address pressing environmental issues, meet carbon emissions targets and mode shift goals;
- **Connectivity and Choice** and the need for coordinated, integrated planning to improve choices for the movement of people and goods, and create real change in the way people travel, particularly to work and school;
- **Environmental Sustainability** where transforming to a low carbon transport system and reducing the environmental impact of transport is urgent; and being,
- **Future Focused** to ensure the Otago and Southland regions are ready and able to respond to change and new challenges is essential.

2.4 Funding Sources

Funding for public transport currently comes primarily from three main sources:

- **Fares** paid by customers to use public transport (referred to as 'farebox');
- **Rates** collected by ORC for services (both public transport and Total Mobility) and infrastructure (as this is local funding, it often gets called 'local share'); and,
- **Central Government** via the National Land Transport Fund and SuperGold Card scheme.

The ability to fund public transport services from fares is driven by patronage and the fares that are paid. The ORC aims to set fares to recover from customers what it considers to be a "fair and equitable" amount of what it costs to operate contracted public transport services.

It is important that public transport is priced in a way that encourages sustainable travel behaviour for those that do have a choice, contributes to managing travel demand on already constrained roads and parking pressure at key destinations. At the same time, there needs to be a sustainable funding model to pay for a high-quality public transport experience.

To date, public transport funding from the National Land Transport Fund has been guided by policy that has required public transport services nationally, to achieve a 50% farebox recovery. This means that half of the costs of running and providing the service are recovered from customer fares. The reality of trying to attain this level of farebox recovery has proven challenging for the ORC.

The ORC's approach to farebox recovery is embedded in the objectives and policies of this RPTP, in particular:

- Regular fare review and adjustments;
- Initiatives to increase patronage; and,
- Achieving value for money through efficient operating and procurement practices.

2.5 Key Challenges

There are many challenges and opportunities facing public transport across Otago as heard in ongoing engagement with the community. Working with TAs, four were identified for the region and relate to:

- Integration, where land-use planning and roading network design encourages car use, disincentivising use of more sustainable modes and results in increased carbon emissions;
- Attractiveness, and the perception that public transport is costly, inconvenient, and hard to use compared to other travel modes;
- Responsiveness, and the ability to quickly adapt to changes in the operating environment; and,
- Access and affordability, where a lack of transport choice leaves dispersed and disadvantaged communities with no options to access economic and social opportunities.

2.5.1 Reducing Environmental Impact

The New Zealand Government, through the Climate Change Response (Zero Carbon) Amendment Act[13] and the Climate Change Commission report (2021)[14], has committed to a programme to reduce the nation's greenhouse gas emissions and ensure a climate-resilient future for New Zealanders. A key aim is to reduce emissions to net zero by 2050. Transforming to a low carbon transport system that enables emission reductions is a strategic priority of the Government Policy Statement (GPS) 2021.

These national policy directions signal a shift in how we plan and deliver public transport, such as:

- Transitioning to energy efficient low emission/ electric buses, which will reduce carbon emissions from fuel, as well as reducing noise and improving air quality; and,
- Providing a high-quality service that attracts motorists to use the bus instead of driving, leading to fewer cars on the road and lower carbon emissions.

In Dunedin, emissions associated with transportation account for 39% of total carbon emitted; the largest source of any industry[15]. Most of these emissions come from road transport, which represents a key opportunity to address. At the same time, concentrations of harmful emissions and particulates emitted by motorised vehicles are contributing to poor air quality, which can lead to a risk of respiratory illnesses for our communities[16].

Increasing the number of journeys taken by public transport will allow us to, in part, reduce some of the negative environmental impacts of the public transport system. There exists a common perception for many that public transport is not a viable alternative to driving. Making the best use of our infrastructure will also help reduce our environmental impact, which could be enabled through better locating our services and supporting infrastructure near to new developments where there is good access to public transport services.

2.5.1 Increasing Public Transport Access

Public transport ensures that the basic needs of the community, particularly those without access to private transport, are met and that people can access essential services such as supermarkets/ food stores, healthcare, education, and jobs. In Otago this is particularly important for our rural Districts, where communities are dispersed, and travel distances are long.

Around 30% of Otago's population are 0-14 or 65 years and over. A large proportion of these people will be unable to drive, and without an accessible public transport system may need to rely on others for transport. This can lead to a loss of independence and social exclusion among other negative health impacts.

There is also a trend amongst younger people to delay learning to drive, due to financial or other considerations[17]. This trend is particularly relevant in Dunedin, where there is a very high proportion of young people aged 15-24 (21.8% in Dunedin compared to 14.6% nationally). This is because Dunedin is home to around 28,000 tertiary students of whom about 80% (around 22,400) are from outside Dunedin. This presents on-going challenges regarding providing for this group's transport needs and choices that this plan seeks to respond to.

Although many households in Otago have access to multiple vehicles (**Figure 7**), many have none. In the 2018 census, approximately 10.4% of households within the public transport catchment area of Dunedin, and 3.3% households within the public transport catchment area of Wakatipu, reported having no access to a motor vehicle. In Dunedin, this is well above the national average. These people will be reliant on public transport, walking, cycling and/or others to meet their transport needs, and to gain access to essential goods and services.

[13] https://www.mfe.govt.nz/climate-change/zero-carbon-amendment-act

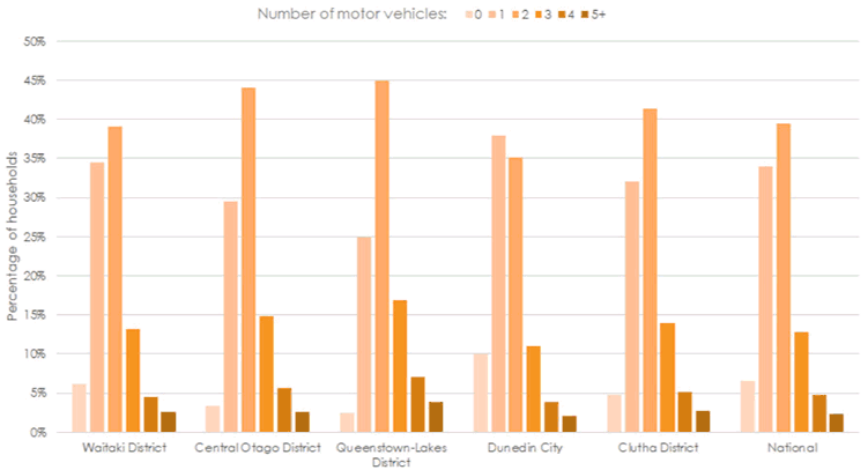
[14] https://www.climatecommission.govt.nz/get-involved/our-advice-and-evidence/

[15] Sourced from: https://infocouncil.dunedin.govt.nz/Open/2021/01/CNL_20210127_AGN_1576_AT.PDF

[16] Air Quality Strategy for Otago. Otago Regional Council.

[17] https://www.stuff.co.nz/national/9779944/kiwi-teens-turn-off-driving

Figure 7: Otago Percentage of Households Without Access to a Motor Vehicle[18]



Currently public transport services are only available in Dunedin City and the Wakatipu, and the Total Mobility Scheme is limited (based on the availability of commercial operators) to the four centres with the highest populations. This leaves a significant proportion of Otago's population who do not have access to public transport. There are commercially operated intra/inter-regional bus services. No rural communities are currently served by public transport and distances and/or geography are too great for modes other than private vehicles to play a significant role in connecting these communities to the social and economic opportunities provided in centres or around the region.

2.5.3 Increasing Attractiveness

Many people still do not have a good perception or experience of using our public transport system and do not view it as offering a realistic alternative to driving. However, annual customer satisfaction surveys in Dunedin and Wakatipu have shown that people are generally becoming more satisfied with the network and overall experience of using the bus.

The overall level of satisfaction with the Wakatipu public transport system has increased from 95% satisfaction in 2018 to 97% in 2019. Ninety-five percent of respondents were likely to "highly recommend" public transport to friends or colleagues.

[18]Census 2018.

Dunedin shows similar levels of satisfaction; however, satisfaction levels have dropped from 93% in 2018 to 88% in 2019. Respondents with lower satisfaction raised concerns relating to the ease of getting around, convenience of paying, travel time, and information about services and delays. Increasing the attractiveness of public transport and positioning the service as a high-quality travel choice is a priority for this Plan.

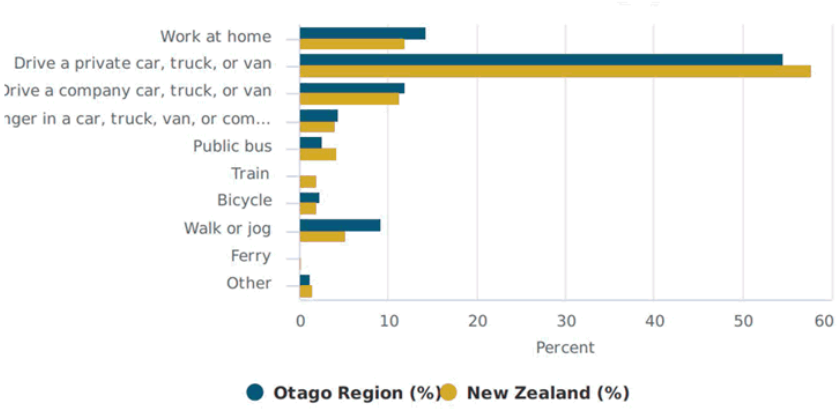
2.5.4 Reducing Network Pressure

Land use changes caused by population growth and our historical investments in road infrastructure that has supported access by car, is an on-going challenge for our public transport system. Urban growth and development is leading to more dispersed populations and greater travel distances that are difficult to serve by public transport. Trips, taken primarily by private car, are causing significant localised congestion on key corridors to the detriment of public transport.

Travelling by bus in Dunedin and Wakatipu is still often slower and less reliable than travelling by car. Congestion, combined with a lack of dedicated bus priority, is resulting in highly variable travel times for buses. This is limiting the attractiveness of services to new customers.

Otago's communities are heavily car dependent. Census data (2018) shows that around 65% of journeys to work were undertaken by private vehicle or company vehicle (see **Figure 8**). Otago's population is expected to grow by 25,000, reaching around 250,000, by 2038. If transport trends continue, the region's growth, particularly in the main urban centres of Dunedin and Queenstown, will lead to greater levels of traffic congestion and more parking pressure.

Figure 8: Main means of travel to work for people in Otago Region and New Zealand (2018 Census)



Several strategic planning documents are providing a long-term vision for land-use development and growth across the region, encapsulated in Spatial Plans. These are coupled with the new National Policy Statement on Urban Development (NPS-UD 2020), which seeks to encourage intensification and enhance planning policy particularly around public transport nodes.

There is a major shift signalled that will increasingly require alignment of public transport around these planning mechanisms. Additionally, the priorities and actions arising out of this Plan will need to be well integrated with land use planning.

2.5.5 Affordability and Funding

Transport affordability is an important issue we are facing, particularly for people on limited incomes or who do not have access to a car and who depend on public transport to live their daily lives. Public transport fares should provide value for money and consider the economic impacts felt by communities. However, the service must remain financially sustainable for customers, ratepayers and funding partners. New services and infrastructure need to be cost effective, with the right investment made at the right time.

The funding of the SuperGold free travel scheme has been capped, and the public have increasing expectations for what a public transport system must deliver. Add to this the growing cost imposed on bus services because of congestion and the ability to deliver quality public transport services becomes heavily constrained by the ability and willingness for ratepayers to fund these services.

With a desire to move more people in Otago via public transport, we are likely to see increasing operational costs associated with the provision of our network and, without aspirations to expand the network over the coming years, we will need to consider other funding mechanisms that can possibly play a role.

Residential and visitor growth in Wakatipu is expected to lead to a growth in peak day population. This additional transport demand is projected to lead to increasing operational costs. The Government Policy Statement 2021 has signalled significant increases in the overall level of capital investment available for public transport. Conversations with government are being signalled and additional funding may emerge which could help us achieve our vision more quickly.

2.6 Our Opportunities

2.6.1 Regional

2.6.1.1 Preparing for Future Growth

Otago has ambitious growth plans over the coming decades, with a growth in population, employment and tourist visitors to the region predicted over the next thirty years. Growth will lead to many more trips being taken on our land transport system. Under current travel behaviours this will result in greater levels of congestion on our most important corridors, ultimately hindering liveability of our towns, and consequently our economic prosperity. Preventing this outcome will require a greater number of people taking public transport (and other modes).

Through greater integration between our land use and planning decisions and our public and active transport networks, we will be better placed to increase the share of trips taken by bus, improving transport choice, and providing a a viable alternative to private vehicle use.

Several strategic planning documents are providing a long-term vision for land-use development and growth across our region, encapsulated in several Spatial and Master Plans. In the Wakatipu, investigations are underway to explore the likely changes to where people will live and work over the next 40 years. Coupled with the new National Policy Statement on Urban Development (NPS-UD 2020), which seeks to encourage intensification and enhance planning policy particularly around public transport nodes, there is a major shift signalled that will mean we will increasingly need to align our public transport infrastructure around these planning mechanisms. Additionally, the priorities and actions arising out this Plan will need to be well integrated with these planning documents to ensure that growth is well integrated with the public transport network.

In Dunedin City, the main considerations are how to best align its development needs with the provision of transport infrastructure in services. Around 70% of Dunedin's population live within 800 metres of public transport service **Figure 9**. These figures demonstrate that there is significant potential for a greater number of people to take public transport. To enable greater integration, we will need to ensure that:

- New development or intensified development in areas that are subject to infrastructure constraints are avoided;
- We encourage development in areas where we have infrastructure capacity;
- We encourage easy connections between active modes and the public transport network; and
- We encourage urban consolidation so that more high-grade facilities and services can be provided centrally where most people can access them as opposed to the need to extend facilities and services to growing outlying areas.

Figure 9: Accessibility to Frequent Bus Services in Dunedin and Mosgiel

2.6.1.2 Regional Connectivity

Currently ORC does not provide bus services across its wider region. Otago's rural areas account for an overwhelming percentage of land and, when combined with the low population density in these areas, creates significant challenges in providing a practical and affordable public transport offering.

Recently, there has been demand from the community for services connecting Balclutha/ Milton with Dunedin and Cromwell/ Alexandra to Wakatipu and Wanaka. This is being stimulated by a growth in population, particularly in Central Otago and Waitaki.

Table 3 shows the population growth experienced in our districts from 2006-2013. With the additional demand being placed by this growth, we expect there to be a greater need and requirement to serve these communities to provide better connections to the economic, social, and employment activities in our urban centres.

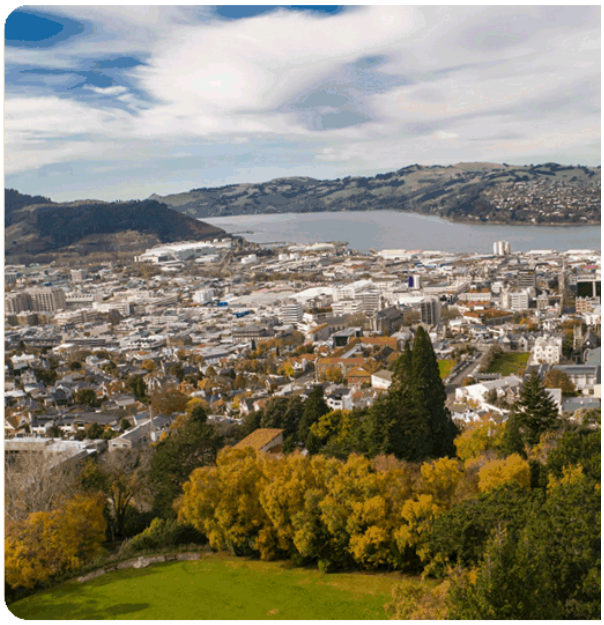


Table 3: Otago Population Growth Trends (2006-2018)

Region	Territorial Authority	Population Year			Average Annual Change 2006 - 13	Average Annual Change 2013 - 18
		2006	2013	2018		
Otago	Waitaki District	20,223	20,829	22,308	0.4%	1.4%
	Central Otago District	16,644	17,895	21,558	1%	3.8%
	Queenstown Lakes District	22,959	28,224	39,153	3%	6.8%
	Dunedin City	118,683	120,249	126,255	0.2%	1%
	Clutha District	16,839	16,890	17,667	0	0.9%

There will be a growing need for rural-based public transport services. Our focus for this Plan is to provide a comprehensive and consistent network in our urban centres of Dunedin and Wakatipu, which will be future proofed to be able to respond to additional rural demand. This should be built upon an underlying framework that will guide our approach to providing rural-based services:

- Actively involve rural communities in the planning and provision of public transport services so that we can best place resources;
- Utilise demand-responsive transport services in areas of low demand;
- Harness the use of community-based transport services, taxis, and private hire vehicles as part of our public transport network offering;
- Use integrated approaches to achieve efficiencies and lower operational costs; and,
- Better use of technology to support information provision, ticketing, and on-demand service provision.

2.6.1.2 Intra-regional Travel

With many of our areas experiencing significant population growth and visitor numbers, there is an opportunity for greater access and mobility via public transport across our region. There are currently no intra-regional public transport services in Otago; however, as our population continues to grow and we experience increasing number of tourists, we believe there will be increased demand for services that connect our smaller townships to our larger urban areas.

Key opportunities in Otago include:

- Provision of services to link Clutha District with Dunedin, from townships such as Balclutha and Milton;
- Implementation of a Wanaka urban service with early route introduction in growth areas to promote public transport-based commuting options;
- Provision of a scheduled service for commuters travelling to Wakatipu from Wanaka and Cromwell;
- Development of trial services to various rural centres, for example, Glenorchy, Makarora, Luggate, Kingston;
- Collaborative development of rideshare and community transport options to support smaller communities; and,
- Trialling specialist services to meet specific areas of demand to complement our core network, for example through the use of demand-responsive transport services (perhaps in Oamaru).

2.6.1.4 Increasing Transport Access

There remain significant areas of deprivation in many of our rural areas. Some residents do not have access to a car and therefore rely on public transport to access employment or other economic and community activities. The provision of transport access to economic, social, and community-based services is one of the key beneficial roles that our public transport network plays in society.

This Plan can play a major role improving transport access by:

- Ensuring that the way we plan and design our network and supporting infrastructure is fully accessible to different community needs and requirements;
- Increasing multi-modal access to the network so that customers can combine multiple forms of travel into their journey; and,
- Improving the design of routes to make them simpler and connect with employment and economic opportunities.

2.6.1.5 Embracing Emerging Technology

New types of technology and digital systems have already become an everyday part of our lives. Disruptive technologies have already arrived and are changing the way people travel. Ride hailing application such as Uber, electric bikes and cars, electric vehicles are changing the way people choose to travel. Global developments in technology offer huge potential to improve the reliability and performance of our transport networks, reducing operational costs and resourcing, and providing greater levels of information and integration for customers.

The launch of new types of micro mobility, such as e-scooters, is enabling people to embrace new ways to travel and combine different types of transport, often as an alternative to single occupancy vehicle travel. These changes bring about huge opportunities for integrated transport, in which public transport has a vital role, further helping to normalise a shift away from private vehicles to low emission choices.

Through this Plan, we will seek to capitalise on new technologies and innovative approaches that we believe add real value to our public transport system, the customer experience, and contribute to reducing our net impact on our environment.

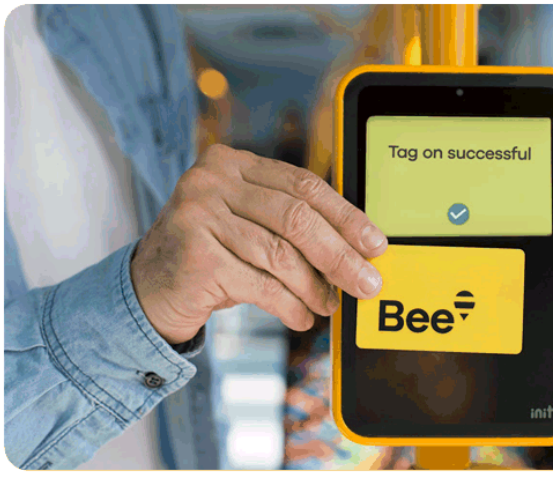
2.6.1.6 Improving Quality and Access to Information

Accessibility and quality of information we provide to our customers is a key influence on the customer experience. We need to consider customer information as a critical component in the 'service offering' we provide, just like scheduled services, bus stops, or other network infrastructure. Our customers are continuing to expect accurate and responsive information to help them plan and take their journeys. This has created new expectations, such as:

- Greater use of real-time information, which will allow customers to see in real time where and when their bus is coming;
- Travel time comparisons between different modes that can help inform a potential journey; and,
- Information on customer facilities and supporting measures, which may influence the type and choice of travel mode.

To capitalise on these opportunities, we need to focus on improving our customer information so that it meets the changing needs and expectations of our existing and potential customers. Key opportunities include:

- Providing more accurate real-time information;
- Providing a greater range of information to allow customers to make a more informed choice about their travel;
- Providing robust open-source data and information to increase the reach of public transport information; and,
- Ensuring our data and information can be easily integrated into future 'smart travel' and 'Mobility as a Service' platforms.



2.6.2 Dunedin Network

Dunedin's bus network has experienced significant recent changes through the implementation of the network review undertaken in 2014. The review led to a simpler, more legible network, running at consistent frequencies, including frequent service on weekdays on some routes. These changes provided a good platform for future service enhancements. The key opportunities and focus for this RPTP for the Dunedin network shown in **Table 4**.

Table 4: Dunedin Network Key Opportunities

Opportunity	Gaps	Strategic Response
Increasing patronage and enabling greater mode shift to public transport (with a target to increase mode share from 3.4% in 2018 to 8% by 2030);	Ease and convenience of driving leading to high private vehicle mode share.	• Ease and convenience of driving leading to high private vehicle mode share.
Better utilisation and increased efficiency of the network.	Poor journey reliability, particularly on key corridors, causing buses to compete for space and time with general traffic.	• Enhancing the network through better timetabling; • Re-enforcing the central spine of the network along George Street and Princes Street through increased frequencies and higher capacity vehicles; and; • Implementing bus priority on key corridors to improve journey time reliability.
Integrating the network with land use and development.	Most of the new housing is on the Taieri Plain in Mosgiel and Outram, while the majority of jobs are in the city centre and Tertiary Precinct in the northern part of the city centre. This land use pattern means there is likely to be a greater number of trips, largely by car, on corridors from the south/south-west of the city.	Improving levels of service that will attract new customers; Alternative approaches to serving urban centres, fulfilling an important transport access goal, whilst ensuring we can provide a simplified and legible network with high frequencies; Trialling demand-responsive services.

To support a simple and more consolidated network, several projects are being delivered focussing on both services and supporting infrastructure. **Table 5** (see next page) details the key projects intended to be implemented over the course of this RPTP.

Table 5: Dunedin Network Key Projects

Project	Description	Background/Explanation
Bus priority supporting measures	Investigate opportunities to prioritise the movement of buses ahead of private motor vehicles and maintain reliable bus operation, particularly at intersections and on main routes from south of Dunedin City.	Princes Street currently supports a high number of journeys into the city (65% of which originate from the south) and has been identified as a preferred location for bus priority. The purpose of these interventions is to remove inefficiencies and delays and provide a more efficient public transport corridor.
Level of service improvements	Investigate increasing peak frequency of services and introduction of direct/non-stop services from Mosgiel, as well as some southern suburbs, for example to every 15 minutes and/or via Southern Motorway.	The biggest increase in housing is around Mosgiel where the existing bus network is under pressure in the peak. This combined with 65% of journeys from the south terminating in the city centre, means that focusing on these areas has the biggest opportunity to achieve mode shift and convert longer distance car journeys to public transport.
Express service	Investigate feasibility of express service connecting Mosgiel and Dunedin city centre.	A large proportion of commuters to Dunedin Central city travel from Mosgiel. An overwhelming proportion of these journeys are taken by private vehicle.
Frequencies and Operating Hours	Investigate alternative frequency and operating hours to ensure that they are simple, legible, and meet customer requirements as best as possible within available funding.	Currently, there are issues in the span of service with the Dunedin network, with some services not reaching the city centre before 7am. Some routes feature inconsistent frequency times, which contributes to additional confusion for customers.
Improved interchange facilities	Improved interchange facilities Investigation of Super stops and Bus Hub upgrade to provide greater amenity, access to information, increased capacity and ability for passengers to transfer.	To improve overall journey times and customer experience, we need to improve the quality of transferring between services on our network.

Table 5: Dunedin Network Key Projects (continued)

Park-and-ride facilities	Investigate the appropriate location and feasibility of park-and-ride facilities to support greater access to the public transport network by alternative modes.	Park-and-ride facilities provide an alternative to driving into the city centre, providing direct connections to the public transport network. Most trips into the city (65%) are made by people coming from the south/ west. Currently, limited travel options are available for residents in Green Island, Mosgiel, Brighton and the Taieri. Park and Ride facilities will provide alternative means to travel to the city centre, and lead to reductions in traffic demand in the central city during and after the new Dunedin Hospital construction.
Demand-responsive services	Investigate opportunities for demand-responsive services.	Some members of the community require greater access to the public transport network but live in areas where providing a large bus to deliver the service is inefficient.

2.6.3 Wakatipu Network

Key opportunities in Wakatipu focus on enabling a step change in public transport patronage and mode share. Several future public transport network opportunities have been identified through business case work to improve the Wakatipu network and significant growth in patronage.

A step change in public transport will be supported through a high capacity, high priority public transport spine that links key development areas identified through the spatial planning process as well as important tourist destinations. Feeder networks of public transport and active modes are also provided. This needs to be supported by infrastructure and behaviour change aspects for it to be successful. Key opportunities in Wakatipu are in (see **Table 6**).

Table 6: Wakatipu Network Key Opportunities

Opportunity	Gaps	Strategic Response
Enabling more reliable and competitive bus travel times when compared to travelling by car.	• Issues of unreliability on highly congested and trafficked routes such as SH6A, which are leading to highly variable public transport journeys; • A lack of bus priority leading to severe bus delays, for example from Shotover Country to Wakatipu Town Centre;	• Implementation of bus priority lanes on SH6A and signal optimisation. • Shared right of way with extensive PT priority measures, including bus lanes and signal priority in congested areas. • Introduction of higher capacity vehicles on core and frequent routes connecting employment, economic activities with high growth areas;

Table 6: Wakatipu Network Key Opportunities (continued)

Opportunity	Gaps	Strategic Response
Increasing access to economic, social, and community activities by public transport.	• Limited direct services between high growth areas and Wakatipu town centre;	• High quality and accessible bus shelters and passenger facilities. • High quality interchange facilities at key transfer stations. • Enhanced public transport fleet, stop and depot facilities to deliver higher capacity and higher frequency BRT style services; • Ferry services that complement the scheduled bus services; • Further levels of service improvements to provide greater connector services to key residential and development areas, to support implementation of the Wakatipu Spatial Plan; • Potential park and ride facilities;
Improving the customer experience.	• Evidence of poor customer experiences at the Frankton Hub and Wakatipu Town Centre, which reduces the overall image of the network; • Lack of bus stops located around new developments and retail areas along Ladies Mile; • Poor visibility and service information at Queenstown Airport.	• Development of an improved central bus hub that will improve connectivity with regional and tourist coach services; • Improved bus shelters and waiting areas; • Improved customer information at bus stops and key interchange facilities.

3.0 Our Network and Recent Developments

Public Transport Units
Dunedin Public Transport Network
Wakatipu Public Transport Network
Fare Structure
Total Mobility
Rail and Ferry

3.0 Our Network and Recent Developments

Otago's public transport system includes the Dunedin City Bus Network, the Wakatipu Public Transport Network, and the Total Mobility Scheme which is currently provided in Dunedin, Oamaru, Wakatipu, and Wanaka.

3.1 Public Transport Units

The Otago network is currently grouped into eight public transport units, five bus units in Dunedin, two bus units and one ferry unit in Wakatipu. A 'unit'[19] is a group of routes contracted to one operator and contains all of the timetabled services applying to the route or routes within that unit. A unit must be exclusive so that the operator has full responsibility and market access on those routes 24 hours per day, on any given day.

An intention of government legislation was to grow the commerciality of public transport services. Reducing the number of units across Otago, by grouping a greater number of services together may increase the commercial viability of services.

The proposed units for the 2021 Plan are presented in Appendix B – Public Transport Services Integral to the Network.

3.2 Dunedin Public Transport Network

In Dunedin, the ORC is responsible for planning and tendering the bus services, marketing, and providing information on bus services to the public, and funding passenger transport infrastructure. Dunedin City Council is responsible for providing and maintaining the passenger transport infrastructure, such as bus stops and shelters.

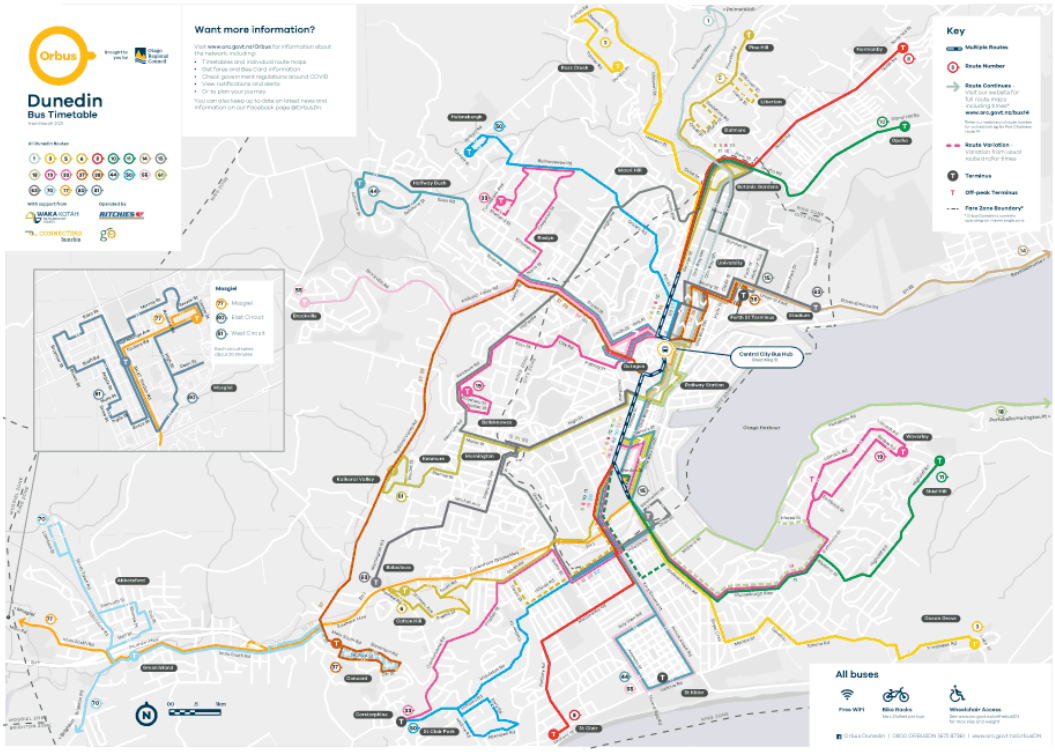
In 2014, ORC began a review of the Dunedin urban bus network to identify service, infrastructure, and network changes that could be made to increase patronage, make journey times quicker, increase customer satisfaction. As part of the review, we looked at the overall bus network design to investigate what was working well and what wasn't. The network design focused on:

- Simplifying the network design, route structure, and standardising frequencies;
- Implementing a radial pattern network design with services going to the central city Bus Hub and in some instances going on to another suburb. This means that most routes will be paired so that you can ride from one end of a route, through the central city, and out to another suburb
- Implementing improvements to network operation and reliability;
- Improving timetables to support better transfers and improve operational performance;
- Implementation of a simplified fare structure and concessions to provide a consistent customer experience; and,
- Pricing of fare products to encourage modal shift while ensuring the long-term financial viability of the network.

Currently Dunedin's bus network covers the urban area and extends to the urban fringes of Port Chalmers, Brighton, Waikouaiti and Portobello (see **Figure 10**). Routes in the network operate in a radial pattern to and/or through the central city Dunedin Bus Hub, opened in early 2019. Routes have different timetable frequencies based on demand including 'Rapid', 'Frequent' or 'Regular' services. Highest frequency routes operate every 15 minutes during the peak and lowest frequency routes typically operate every 60 minutes.

[19]under PTOM

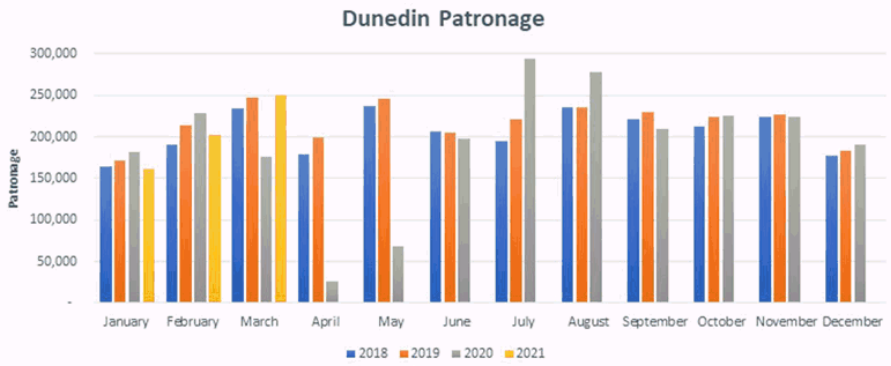
Figure 10: Dunedin Public Transport Network (2020)



In accordance with the Regional Public Transport Plan 2014, we have been progressively phasing out Regional Council operated school services. However, a small number of dedicated school services operate in Dunedin (for example, 5D Pine Hill to Logan Park High School, 6D, 6E and 40C).

The recent changes to the Orbus network in Dunedin have delivered significant increases in annual boardings. Patronage in Dunedin has shown a steady upward trend in recent years (see **Figure 11** on next page); up by 8% in the 2018/19 financial year.

Figure 11: Dunedin Public Transport Patronage (2018-21)



Other recent public transport initiatives include:

- Completion of the new $6 million Dunedin central city bus hub in 2019, providing one convenient central city service point for public transport and making it easier for customers to transfer between services;
- Implementation of the Bee Card electronic ticketing system (an electronic tag-on tag-off system). As of mid-April 2021, the region had just under 43,000 registered Bee cards.
- A trial of a $2 flat fare in response to the impacts of COVID-19 that is making our network more affordable and attractive for customers.

3.3 Wakatipu Public Transport Network (Fig 12)

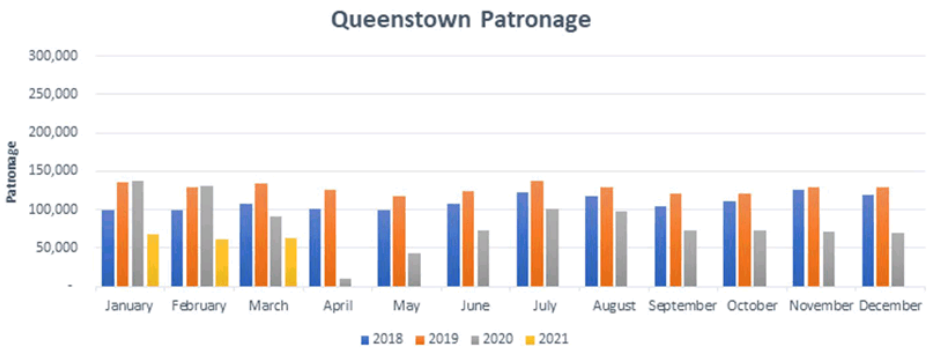
Significant changes were made to the Wakatipu network in 2015/16. The first major change was the introduction of subsidised scheduled services in 2017 under the new PTOM (Public Transport Operating Model) framework. These changes were aimed to prioritise local, everyday trips that could contribute to reducing congestion, particularly on SH6A between Queenstown Town Centre and Frankton.

Bus frequencies vary by route, with the most frequent services having buses operating every 15 minutes during the peak and the lowest frequency

Figure 12: Wakatipu Public Transport Network (2020

Wakatipu bus use has also shown a month on month upward trend compared to the previous years (**Figure 13**); up 64% for the 2018/19 financial year. Year to date patronage was tracking at 182% of calendar year 2017. This can be mainly attributed to the introduction of the Orbus service in mid-November 2017. Since early 2020, patronage has been affected by the impacts of COVID-19.

Figure 13: Wakatipu Public Transport Patronage



Other recent public transport initiatives include:

- Introduction of a flat rate of $2 bus service, providing greater affordability for customers;
- Implementation of the Bee Card electronic ticketing system, which is making it easier for people to use public transport;
- The launch of a real time bus tracking trial service (TrackAbus), which includes tracking via desktop and mobile phone, together with a text service for passengers without smart phones; and,
- Progressing with the relocation of the bus stops currently in Camp Street over to Stanley Street on State highway 6A to improve transfers and the customer experience.

3.4 Fare Structure

In Queenstown on the Wakatipu network, ORC has a flat fare structure, introduced in 2017. Queenstown Lakes District Council provides financial support for the flat fares.

During New Zealand's COVID-19 Level 4 lockdown in 2020, ORC provided for Central Government's free travel initiative on all buses on both the Dunedin and Wakatipu networks, to support community access at this difficult time. This enabled essential services to continue while ensuring social distancing and the health and safety of bus drivers and passengers.

As the network transitioned back to charging and with the introduction of the new Bee Card, an interim flat fare was set at $2.00 in Dunedin. This has supported an upward trend for bus use.

The tag-on tag-off Bee Card ticketing system was introduced in Dunedin in August and Queenstown in September in 2020. The smartcard has been implemented in nine different regions in New Zealand, including Otago. It has provided Otago with a modern and easy to use ticketing system with online capability, making it even easier for people to use public transport.

Table 7: Otago's Current Fare Structure (2021)

Payment By Bee Card	Adult	$2.00 per trip (enables a free transfer of 45 minutes)
	Youth (5-18)	$1.50 per trip (Wakatipu) $1.20 per trip (Dunedin)
	Child (under 5)	Free
Payment By Cash	Dunedin	$3.00 per trip
	Wakatipu	$4.00 per trip
	Queentown Airport	Adult $10.00 per trip Child $8.00 per trip

3.5 Total Mobility

Otago's Total Mobility scheme is available in Dunedin, Oamaru, Wakatipu and Wanaka, supporting approximately 3,700 registered users. For the period February 2020 to January 2021, the mean monthly number of Total Mobility trips was just over 8,000 per month and of those, on average, 1,000 required hoist transport.

Total Mobility can only be operated where there are suitable, trained small passenger service vehicle commercial providers. This has proven to be challenging for some areas. For example, Total Mobility used to be provided in Balclutha and Alexandra.

Total Mobility customers travel using the RideWise electronic payment card. The card provides an improved method of managing travel and can be used in most other centres in New Zealand.

The scheme also provides a subsidy to assist with the costs of purchasing and installing new and replacement hoists into vans to enable providers to carry wheelchairs and mobility scooters.

3.6 Rail and Ferry

The Government Policy Statement (GPS) on Land Transport has signalled changing priorities and a significant increase in the overall level of capital investment available for public transport. This may create opportunities for new types of public transport services in the future.

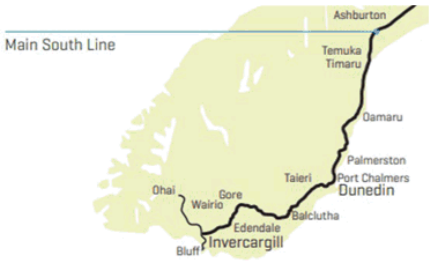
3.6.1 Rail

The Main South Line (MSL) runs from Christchurch via Oamaru, Dunedin, and Balclutha to Invercargill (**Figure 14**). The MSL is used primarily for freight and there are no commuter rail or inter-regional public transport rail services available. Scenic tourist trains sometimes operate between Dunedin and Middlemarch, and Dunedin and Palmerston.

There has been no commuter rail or inter-regional passenger rail services available in Otago (for some time). A scenic tourist train[20] has been operated by Dunedin Railways between Dunedin and Middlemarch. However, services were suspended due to COVID-19, and are currently running on a reduced timetable. The future operation of Dunedin Railways is under review.

[20]The Taieri Gorge Railway

Figure 14: Lower South Island Main South Line



3.6.2 Ferry

Queenstown's location on the shores of Lake Wakatipu, and Dunedin's historic development around Otago Harbour both create opportunities for future ferry services to be explored, taking the pressure off the road network.

To enable the provision of a public ferry service, an amendment was made to the previous Otago Regional Public Transport Plan to specify a trial Frankton Arm to Queenstown Bay water ferry as an integral service to the network and that is currently financially supported by ORC.

4.0 What We Want To Achieve

Vision
Objectives
Focus Areas
Desired Outcomes

4.0 What We Want To Achieve

This chapter sets out our vision for Otago's public transport system that will guide our network over the next ten years. It combines a regional vision statement for our network, along with our key priorities and outcomes that we are seeking to achieve over the coming decade.

4.1 Vision

Inclusive, accessible, innovative public transport that connects Otago and contributes positively to our community, environment, and economy.

4.2 Objectives

Five objectives will guide implementation of this Plan. These objectives will help achieve the vision, whilst reflecting the issues which have been identified through consultation, and wider national, regional, and local policy context. The objectives form the basis of the policies, as set out in Section five.

Objective One
Contribute to carbon reduction and improved air quality through increased public transport mode share and sustainable fleet options.

Objective Two
Deliver an integrated Otago public transport network of infrastructure, services and land use that increases choice, improves network connectivity and contributes to social and economic prosperity.

Objective Three
Develop a public transport system that is adaptable and able to effectively respond to change.

Objective Four
Establish a public transport system that is safe, accessible, provides a high-quality experience that retains existing customers, attracts new customers and achieves high levels of satisfaction.

Objective Five
Deliver fares that are affordable for both users and communities.

4.3 Focus Area

To achieve the objectives, the four key areas that the ORC will focus on are:

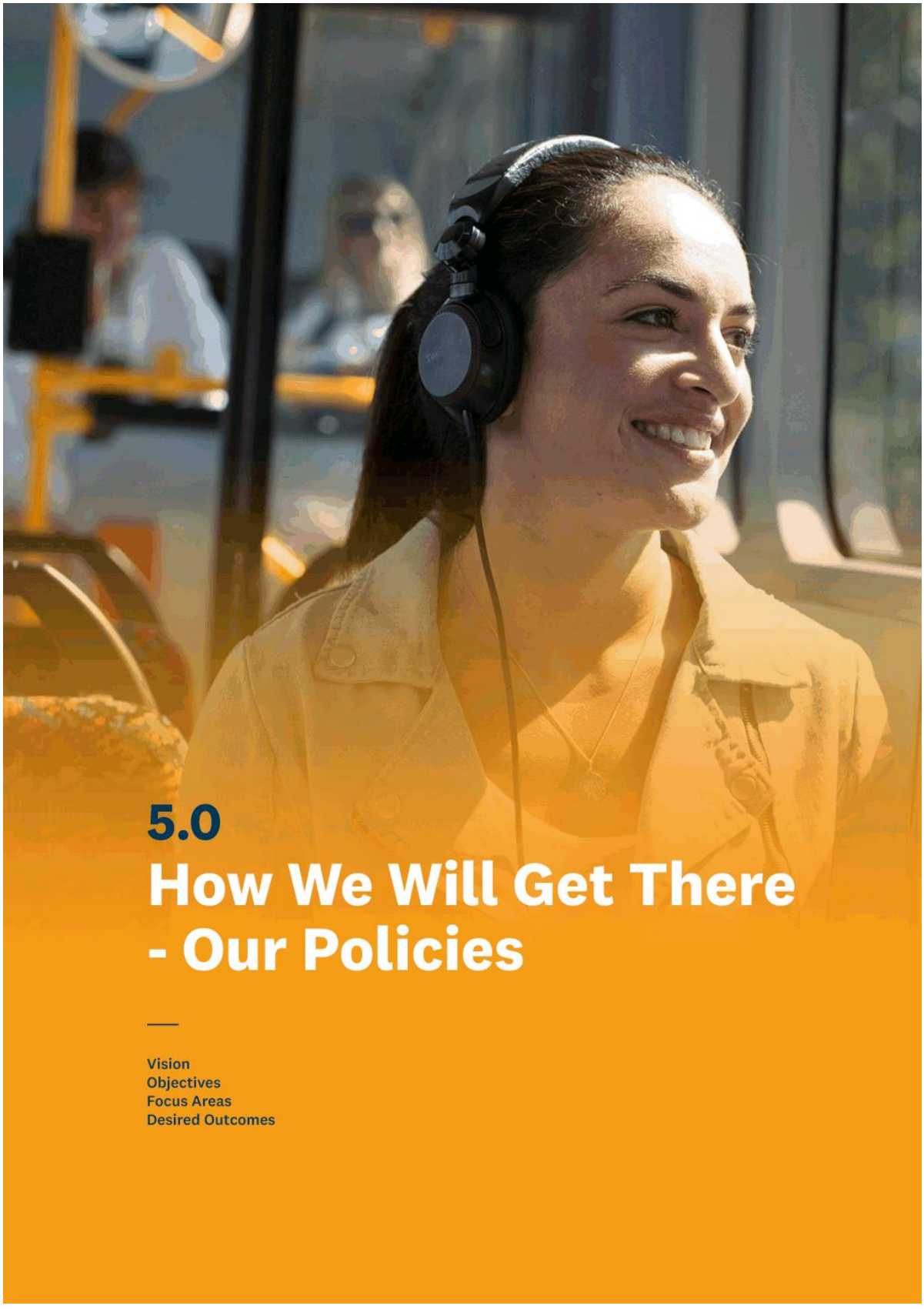
- **Improve the Customer Experience:** A key aim of this plan is to improve the public transport offering for improved customer experience, with the goal that more people choose to use public transport more often.
- **Improve Environmental Health:** This plan seeks to support the introduction of zero emission vehicles into our fleet that will reduce our net greenhouse gas emissions whilst improving our air quality.
- **Embrace Innovation:** The role of technology and innovation will be even more important in the years ahead and developing the mechanisms to improve and capitalise on emerging opportunities will be a key component of this plan.
- **Be Cost Effective:** New services and infrastructure need to be cost effective where the right investments are made at the right time for the greatest number of current and potential users.

4.4 Desired Outcomes

We need to know whether our policies and measures are getting us to where we want to be If they aren't then we will need to re-consider our goals and outcomes. We will monitor this through several Performance Measures, shown in **Table 8.**

Table 8: Performance Measures

Performance Measures	Targets			
	2021/22	2022/23	2023/24	2024-2031
Annual public transport boarding in Queenstown per capita	Increase	Increase	Increase	Increase
Annual public transport boarding in Dunedin per capita	Increase	Increase	Increase	Increase
Overall passenger satisfaction with Wakatipu Public Transport system at annual survey	97%	97%	97%	97%
Percentage of Dunedin bus-users who are satisfied with the trip overall	91%	94%	97%	97%
Percentage of scheduled services delivered (reliability)	95%	95%	95%	95%
Percentage of scheduled services ontime (punctuality - to five minutes)	95%	95%	95%	95%
Percentage of users who are satisfied with the provision of timetable and services information	Establish Baseline	Maintain or Increase	Maintain or Increase	Maintain or Increase
Percentage of users who are satisfied with the overall service of the Total Mobility Scheme	Establish Baseline	Maintain or Increase	Maintain or Increase	Maintain or Increase



5.0 How We Will Get There - Our Policies

Vision
Objectives
Focus Areas
Desired Outcomes

5.0 How We Will Get There

This chapter of the Plan sets out the policies and actions that will help us deliver our RPTP objectives and overarching vision. The policies reflect our strategic vision and direction for the public transport network.

5.1 Carbon Reduction

Objective One
Contribute to carbon reduction and improved air quality through increased public transport mode share and sustainable fleet options.

5.1.1 Vehicle Quality Standards

High quality vehicles and standards form an essential component to providing a public transport network that is attractive, attracts new customers, and ensures that we are contributing to reducing the emissions associated with the operation of our public transport system. The ORC will continue to improve the comfort, accessibility, safety, and overall standard of vehicles by requiring compliance with the national vehicle quality standards. This sets common minimum standards for the urban bus fleet and will be the basis for ensuring vehicle quality.

Policy	Ensure high vehicle quality standards on all contracted services.
Actions	• Require all operators to, at a minimum, adhere to the national standard 'Requirements for Urban Buses in New Zealand (RUB)' published by Waka Kotahi NZ Transport Agency; • Incentivise higher vehicle quality, technology and lower emissions through contract procurement; • Ensure that, for each operator of contracted public transport units, the number of buses aged 0-10 years shall be equal or greater than 50% of their fleet.

5.1.2 Zero-Emission Vehicles

Central government has announced the from 2025 no new fossil-fuelled buses can be introduced into service in New Zealand and by 2035, all fossil-fuelled buses must be replaced.

Public transport has a major impact on our local environment, communities, and health through emissions of greenhouse gases, other particulates, and noise. To reduce these negative environmental impacts, we need to ensure that the vehicle fleet that operates on our network is modern, energy efficient, and is as clean as possible. We will investigate opportunities to introduce zero-emission vehicles (electric or alternative fuelled vehicles), dependent on the level of funding and investment that can be sourced.

Policy	Transition to a lower-emission public transport network.
Actions	• Introduce electric vehicles and/or alternative fuelled vehicles into the operational fleet in a phased approach based on the re-tendering of contract Units; • Engage with operators to explore options to introduce electric vehicles and/or alternative fuelled vehicles into the operational fleet earlier than the retendering of contract Units; • Trial new technologies and platforms that improve the efficiency and operation of the public transport network; • Assess alternative funding opportunities for the delivery of the necessary infrastructure (e.g. charging stations) to support the transition to electric and/or alternative fuelled vehicles; • Ensure that the procurement of contracted services results in greater fleet and operational efficiency.

5.1.3 Sustainable Approaches to Physical Infrastructure

As noted above, public transport has a major impact on our local environment, communities, and health. To reduce these negative environmental impacts, we also need to ensure that supporting infrastructure is modern, energy efficient and is as clean as possible.

Policy	Support and advocate for sustainable approaches to the introduction of new physical and other supporting infrastructure.
Actions	• Consider long-term, sustainable approaches when planning and designing physical infrastructure provision; and, • Ensure all procurement contracts for new physical infrastructure incorporate sustainable and decarbonization best practices, such as the use of recycled materials, solar PV etc.

5.2 Integrated Network

Objective Two

Deliver an integrated Otago public transport network of infrastructure, services and land use that increases choice, improves network connectivity and contributes to social and economic prosperity.

Our second objective focuses on achieving a public transport network that is integrated with other services, between modes and partners (e.g. territorial authorities). To ensure we meet this objective, we have identified Policies that outline the basic components of the Otago public transport network. It includes policies on the type of services to be provided, where, what frequency, and when they will operate. These policies apply to all the contracted Units described in Appendix B – Public Transport Services Integral to the Network. Overall, these Policies aim to achieve an integrated public transport network, recognising the different requirements and levels of demand for public transport across our region.

5.2.1 Network Form and Function

The overall design of our public transport network will have a major bearing on the quality, types of services, and ultimately the customer experience. Over recent years, the ORC has transitioned to an integrated network approach, which aims to provide a simpler, more efficient, and easier to understand network structure. This aims to support more efficient transfer between services, that aid in quicker and more reliable journey times for passengers. To help support and embed this network approach, the ORC aims to undertake future network planning and design in a way that improves connectivity and maximises travel options.

Policy	Design the public transport network in a way that is simple, maximises choice, and is well integrated with existing and future land use.
Actions	• Design routes that maximise access and travel options to destinations such as employment, retail, shopping, and other services; • Design public transport timetables that are easy to understand and maximise headway and connectivity across the public transport network; • Ensure that the design and planning of routes is well integrated with surrounding infrastructure to support multi-modal access to the network; • Work with territorial authorities to ensure that supporting physical infrastructure supports easy and safe access to the public transport network; and, • Work with territorial authorities to ensure that proposed land use and development is well integrated with the existing public transport network.

5.2.2 Service Levels (Dunedin and Wakatipu Networks)

Customers expect to receive a basic level of service when they use the public transport network. For services on key corridors that support high levels of patronage, there is generally a higher level of service provision than services that serve more rural areas with lower levels of patronage.

Minimum service levels provide the ORC with a framework to determine the level of service for public transport services, in line with local demand and requirements:

- **Rapid services:** Provide a core, higher capacity, frequent, and all-day type service within urban areas. They operate at frequencies of at least 15 minutes during the day, and sometimes more frequently at peak periods. Faster and more reliable travel times are a focus for the Rapid routes and are often supported by dedicated bus priority measures on key arterial corridors.
- **Frequent services:** Direct services that connect residential areas with commercial, industrial, community, and other key activities. They provide frequent services throughout the day of between 20 – 40 minutes but may provide lower levels of service at off-peak times. They are sometimes supported by bus priority measures.
- **Regular Services:** Provide coverage to areas of the public transport network not well served by Rapid and Frequent services. They have more limited operational hours and run at lower service frequencies of between 30 – 120 minutes.
- **Targeted Services:** Targeted services provide services to areas or link destinations where there is not enough demand to justify a core, frequent service, or where normal services cannot meet peak demand. Targeted services include:
    - School bus services;
    - Ferry services;
    - On-demand/demand-responsive services; and,
    - Special event services.

When undertaking reviews of services, provision of new services or amending existing services, the ORC will explore opportunities to exceed these minimum standards to ensure that the outcomes of this Plan are met. As growth and additional demand occurs, the ORC will explore opportunities to increase levels of service (frequency, hours of operation) for Frequent and Regular services. These will be considered on a case-by-case basis.

Policy	Ensure that public transport levels of service improve choice, connectivity, and meet a diverse range of customer needs.
Actions	Provide public transport services in Dunedin and Wakatipu with the minimum service levels defined in Table 9.

Table 9: Proposed Public Transport Minimum Service Levels in Dunedin and Wakatipu

Service Type	Role and Function	Key Characteristics	Target Frequency	Target Hours of Operation	Supporting Measures
Rapid	• Core services that connect key activity and employment centres within urban areas • Provide fast, frequent, express services that offer travel time advantage over private vehicles. • Influence adjacent land use and development by intensifying development around frequent services	• Fast and direct routes with limited stops • High frequency • High capacity vehicles • Wide hours of operation	15-minute frequency all-day	• Weekdays 6am – 11pm • Saturday 7am – 11pm • Sunday 7am – 9pm	Bus priority measures along key corridors at peak periods
Frequent	• Provide frequent and reliable services. • Provides competitive travel times to private vehicles. • Provides network coverage to growth areas. • Supports more intensive housing development in areas served	• High frequency • Medium capacity vehicles • More direct routes that increase end-to-end journey times • Reasonable hours of operation	• 20-minute peak • 40 minute off-peak	• Weekdays 7am - 9pm • Saturday 8am - 9pm • Sunday 9am - 6pm	Targeted bus priority measures along urban arterials at peak periods
Regular	• Basic services. • Enables basic access to employment, education, and essential services • Emphasises coverage and accessibility from low-density areas	• Low frequency with service levels dependent on demand and funding • Medium/low capacity vehicles • Moderate/low hours of service subject to demand	30 –120 minute dependent on service	• Weekday 7am - 7pm • Saturday 8am - 8pm • Sunday based on demand	Little or no bus priority measure
Targeted Services	• May provide demand responsive services in areas of low demand and/or a scheduled service is considered not feasible/ practical • Connects to Rapid and Frequent services to improve network coverage	• Options to utilise various vehicle-types such as taxis, people-carriers, and regular buses • Responsive to local demand and need	Dependent on demand and funding	Personalised to meet the specific requirements of each travel requirements and to compliment the rest of the network	Little or no bus priority measures

5.2.3 Regional Connectivity

Improving access to our public transport network is a key focus for this Plan. The transport disadvantaged are more likely to face access challenges through a lack of access to private transport or because they face financial difficulties. There are also many communities who travel for work and other means to Dunedin and Wakatipu from satellite towns or other areas and do not have the option to access a public transport service to carry out daily activities.

This Policy recognises the need, over time, to improve access to our urban networks via these areas. It focuses on the need to ensure that there is community support for any regional connections, evidence that there is a demand for this service, and that there is a willingness to pay from the community itself.

Regional connections will not just involve traditional scheduled services but may also involve demand responsive transport services, which may be integrated with the traditional public transport network. We will need to work closely with territorial authorities and our other key partners to plan and deliver these types of services.

Policy	Investigate options to improve regional connectivity across Otago.

Actions	• Proactively collaborate with central government agencies, territorial authorities and local communities to identify the demand and willingness to financially support services that improve regional connectivity across the region;
	• Investigate the feasibility, costs, and potential funding options of regional connections, where there is strong community support;
	• Consider requests for new regional services from relevant territorial authorities, community boards, or resident groups when:
	  • The proposed regional connection is consistent with the objectives of this Plan, including its underlying principles and network structure;
	  • There is potential for a level of demand that would support achieving an acceptable farebox recovery rate:
	  • There is community willingness to financially support the introduction of a regional connection

5.2.4 Integration with Land Use and New Development

Our region is growing. To support the growth of our urban areas, which support the majority of our population, we need to carefully consider how new development areas complement the current public transport network. We need to ensure that the implementation of new services delivers value for money, has a good patronage base, and provides an attractive alternative to driving for these communities.

Policy	Investigate options to serve new growth areas or new areas of development by public transport services and/or new infrastructure. New services and infrastructure must not detract from the viability of the wider public transport network.

Actions	• Consider the introduction of scheduled services to new areas of development once the following criteria are met:
	  • The developments' location, size, and connections support the long-term provision and success of public transport;
	  • Supporting infrastructure is designed, planned, and implemented to complement the introduction of the service.
	• Work proactively with territorial authorities through Spatial Plans and other strategic planning documents to identify future growth and demand needs in the planning of services and infrastructure;
	• Adopt a consistent approach to assess requests to fund new services or infrastructure

5.2.5 Infrastructure and Service Delivery

The success of our public transport network relies on close integration, planning, and collaboration between the ORC, territorial authorities, and its partner agencies. A successful network relies on the provision of bus priority measures, passenger facilities, and safe access via other modes to the network. Territorial authorities are responsible for providing supporting infrastructure measures that support the services provided by the ORC. The ORC is responsible for the provision and coordination of services, service enhancements, and network management. Better coordination of these responsibilities will be required to improve our network.

Policy	Work collaboratively with territorial authorities and partner agencies to improve infrastructure and service delivery.
Actions	• Implement the provision of attractive and safe passenger facilities to enable easy access to the public transport network by all modes; • Support network optimisation through the use of available technology, such as GPS and other mechanisms; and, • Share monitoring data with territorial authorities and partner agencies to enable appropriate enhancements to the public transport network.

5.2.6 Multi-modal Access

An integrated public transport network requires good connections by other modes, particularly by walking and cycling. Designing and planning for these modes as part of our network approach is critical to achieving our ambition to create a multi-modal transport system and one that provides a viable alternative to driving a car.

Providing the necessary means for customers to access and use our public transport network, by combining walking, cycling and public transport, contributes to our transport access and carbon reduction goals. This integration of modes encourages more sustainable travel and provides opportunities for more people to use public transport. The ORC will require all new contracts for scheduled services in our Dunedin and Wakatipu networks to have the means to carry bicycles. Working with our partners, the ORC will investigate options to increase the number of bikes on buses where there is shown to be a high demand.

Policy	Work collaboratively with territorial authorities, partner agencies, stakeholders and developers to enhance multi-modal access to the public transport network.
Actions	• Work with territorial authorities to improve walking and cycling connections to public transport; • Provide cycle parking at strategic locations where there is evidence of demand to support greater access to the public transport network by alternative modes; • Identify opportunities to introduce supporting bicycle infrastructure at bus interchange facilities to support greater cycling access to the public transport network; • Explore the feasibility of dedicated park and ride facilities, to provide greater connections between other modes and the public transport network; and, • Identify the benefit of shared vehicles, demand responsive services, and other services infrastructure to increase accessibility to the public transport network.
Policy	Implement the 'accessible journey'[21] approach to public transport by providing infrastructure and information that enables all people to access public transport services.
Actions	• Work with territorial authorities, operators, and other stakeholders to implement the 'accessible journeys approach.

[21]The accessible journey means that all the steps needed for a person to get from their home to their destination and then home again are regarded as linked and of equal importance. If one link is broken or inadequate, the whole journey becomes impractical or impossible (Source: The Accessible Journey: Report of the Inquiry into Accessible Public Land Transport).

[22]Not all members of each group will be transport disadvantaged.

5.2.7 Considering the Needs of the Transport Disadvantaged

An important focus of this RPTP is to ensure that we continue to meet the needs and requirements of people who are least able to travel to live their daily lives. We term these people the transport disadvantaged. This can occur for people for a range of different factors including income, health, disability or other local factors. We need to ensure that our public transport network is accessible for these people, as they are generally groups who are most reliant on public transport.

The ORC considers the following groups as transport disadvantaged[22]:

- People with accessibility needs;
- People with mobility impairments;
- People without driver licences, including children under driving age;
- People on low incomes, including beneficiaries;
- People in households without access to private transport, such as a car.

An example of the work we do to support some transport disadvantaged is through our Total Mobility scheme. The ORC administers the Total Mobility Scheme for those eligible and who have difficulty using scheduled public transport services. In Otago, it operates in Dunedin, Oamaru, Wakatipu, and Wanaka.

The Total Mobility scheme assists eligible people with impairments to access appropriate transport to enhance their community participation. The assistance is provided in the form of a subsidy for approved door to door transport services.

Policy	Provide the Total Mobility service so that transport services are available for the mobility impaired who have difficulty with, or are unable to undertake the component parts of using public transport.

Actions	• The ORC will implement the Total Mobility scheme:
	  • With the assistance of agencies with eligible clients;
	  • By providing funding assistance for member travel and new/replacement hoists. The subsidy for scheme users is 50% of the full fare, up to a maximum subsidy of $25 (GST incl.), funded from rates and Waka Kotahi; and
	  • By considering applications from new scheme providers on community need and sustainability grounds.
	• The ORC will work with users of the scheme, disability agencies, and taxi organisations to implement:
	  • Any upgrades to the scheme that might result from new national standards;
	  • Any customer service standards that taxi companies are required to implement in order to provide Total Mobility services; and,
	  • An expanded fleet of wheelchair-accessible vehicles operating throughout Otago.

Policy	Ensure that the public transport network is accessible and safe.
Actions	• Adopt universal access design principles in the planning, design, and implementation of services and infrastructure. • Consider the needs and requirements of people with limited access and difficulties using the public transport network when service or infrastructure changes are proposed or limited. • Work with territorial authorities to ensure that all new public transport infrastructure is planned and designed in accordance with Waka Kotahi's New Zealand Public Transport Design Guidelines. • Work with disability and other key interest groups to identify specific needs, requirements, and areas of the public transport system that can be improved. • Permit service/assistance dogs at all times on scheduled services; and, • Permit pets on scheduled weekday services between 9:00 – 15:00 and after 18:30 and all day on weekends. Dogs must be muzzled and be on leashes and small pets must be transported in a carrier.

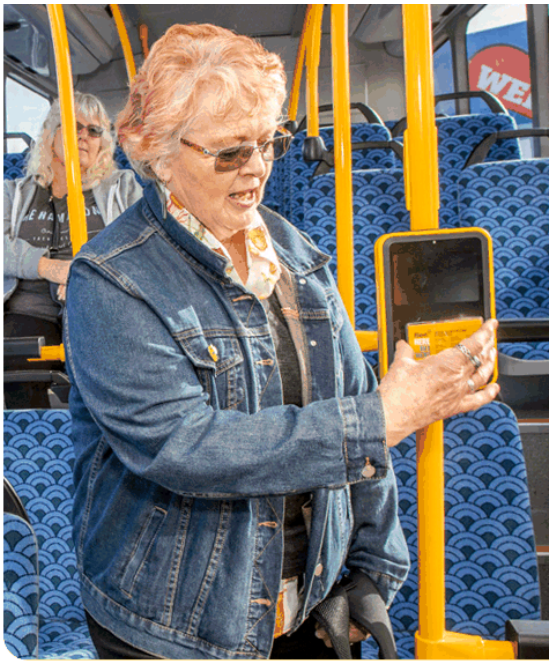
5.2.8 Park-and-Ride

Park-and-ride facilities play an important role in enabling multi-modal access to our public transport network. They also provide an effective means to encourage mode shift to public transport and reduce congestion bottlenecks on our busiest roads and key corridors, by enabling more efficient journeys than would have otherwise been made by car.

No formal Park-and-ride facilities currently operate in Otago. Recently Otago's territorial authorities, in collaboration with the ORC, have been investigating sites at strategic locations that would complement the public transport network. These facilities are most effective when they are combined with higher capacity and high frequency public transport services that provide a high quality, efficient customer experience. They will generally intercept car commuters on their journeys and be located before congestion bottlenecks on key arterial routes to facilitate mode shift.

Policy	Implement Park and Ride facilities to support mode shift and greater multi-modal access to the public transport network.

Actions	• Work with territorial authorities and Waka Kotahi to investigate, plan, design, and implement Park and Ride facilities at strategic locations on the public transport network to enable mode shift and support greater access.
	• Consider the implementation of Park and Ride facilities to support greater access to services.
	• When considering new facilities, the ORC will consider:
	  • Safe and easy access must be considered by other modes (walking, cycling) and the transport disadvantaged;
	  • Represent an efficient and cost-effective method to expand access to the public transport network;
	  • Public transport uptake by people who would otherwise travel by car; and
	  • The particular needs of the local community and area.



5.3 Adaptable and Resilient

Objective Three
Develop a public transport system that is adaptable and able to effectively respond to change.

Developing resilience will ensure that we can continue to improve the service and respond to changes to economic, social and environmental circumstances.

5.3.1 Collaborative Partnerships

This Policy acknowledges that our public transport system only works efficiently and effectively when there is a strong collaborative relationship between the ORC, central government agencies, territorial authorities and other key stakeholders and interest groups. There also needs to be the right kind of mechanism in place to support this collaborative relationship.

Policy	Develop and maintain strong partnerships so that the public transport network is able to respond quickly and efficiently to changes in the operating environment.
Actions	• Actively work with community and stakeholder groups to identify their transport needs to inform future service provision; • Collaborate with territorial authorities, operators, central government agencies and key stakeholders to support an integrated approach to network planning; • Collaborate with partners and key stakeholders to trial new technologies and platforms that make the public transport network more accessible and enable more flexible delivery of transport solutions; • Encourage the continued sharing of information and data with and between our territorial authorities, operators and partner agencies to support future planning, transport trends, changing demands, growth and technological change, amongst others.

5.3.2 Specialist and Trial Services

Specialist and trial services provide an effective way to connect communities that are unable to use scheduled services in the network or when connection to the regular public transport network is not viable. These services provide a more flexible approach than traditional contracted services. The ORC will explore opportunities to use peak-only services in areas where there is high demand for a service, but insufficient demand at other times of the day. Demand responsive services provide a flexible option to cater for this demand and operate a viable public transport solution.

Through the overall re-design of the Dunedin network in 2014 and updates in 2017, the ORC moved away from specifically providing school transport. In keeping with that approach, the ORC will in the long term, not contract bus services specifically for school children.

Policy	Provide specialist and/or trial public transport services in specific circumstances to improve community access to the public transport network.
Actions	• Explore trial services in specific circumstances to test the viability of new services. • Work with our partner agencies to explore the introduction of specialist on-demand services where there is demand.

5.3.3 Technology and Innovation

As our region continues to grow and people choose to call Otago home, we will need to explore new ways to enable people's journeys and improve the overall experience. In specific growth areas, travel demand will shift over time and may not be able to be met by the existing public transport network.

Equally, there are exciting opportunities for new technology and service platforms to play a bigger role in our service offering. Trialling new technology will allow us to gather information and assess costs and benefits, before committing to a permanent solution.

Policy	Adopt the trialling of new technology, and platforms that demonstrate the potential to improve the operation and experience of the public transport network.
Actions	• Trial new technology and new service platforms where there is the potential to improve the operation and experience of the public transport network.

5.3.4 Events

Major events are generally great for our region. They bring people to our towns and cities, helping to support local businesses and our regional economy. However, events can generate significant amounts of traffic on our road network. The ORC has an established track record of working collaboratively with event organisers and promoters to support the success of events by encouraging the use of public transport. We want to continue this relationship, ensuring that these events are safe and accessible, whilst minimising impacts to the rest of our public transport network and other road users. Events also provide an exciting opportunity to attract new users to our public transport network.

Policy	Support public transport access to events to reduce congestion and ensure the operational performance of the transport network as a whole.
Actions	• Create an annual calendar of planned major events to assist with the planning and provision of public transport; • Recover all reasonable costs of provision of additional services from the event promoter; and, • Actively support major events to help create combined event and public transport packages and ticketing.

5.4 High-quality, Accessible, and Safe

Objective Four
Establish a public transport system that is safe, accessible, provides a high-quality experience that retains existing customers, attracts new customersand achieves high levels of satisfaction.

Our ambition is to have a public transport network that is easy for passengers, including visitors and businesses, to navigate. It will benefit from a unified brand and identity, making the service clear and easy to understand for everyone.

A good and reliable journey experience will be achieved through high standards of on-board facilities, communication and transfer infrastructure. These will be well integrated with the surrounding environment, ensuring that customers can use different modes to complete their journey. The journey experience will be further enhanced through stops and interchanges that are accessible, convenient, clean, comfortable, and safe.

5.4.1 Physical Infrastructure

Safe and easy access to our public transport network is dependent on the physical infrastructure (such as the design of bus stops, waiting areas, shelters, kerbs, footpaths, and other on-street furniture). We need to ensure that the way we design and implement this infrastructure allows our customers to safely access our public transport network. This is particularly important for those with visual or physical impairments.

Policy	Ensure that supporting physical infrastructure and facilities improves safety and accessibility to the public transport network.
Actions	• Implement the Waka Kotahi NZ Transport Agency public transport infrastructure guidelines and New Zealand Crime Prevention through Environmental Design guidelines when planning and designing public transport infrastructure and facilities; • Work with territorial authorities, operators, and partner agencies to coordinate, design, and implement physical infrastructure and supporting measures such as bus stops, shelters, interchange facilities, and other supporting infrastructure; • Design and implement bus stops according to the minimum service requirements outlined in Table 10; • Ensure that all infrastructure is accessible to those with different abilities, mobility requirements, and the transport disadvantaged; • Ensure that all infrastructure is planned in consultation with the road controlling authority and the operators; and, • Ensure that all infrastructure and facilities provide for the safety of network users.

Table 10: Bus Stop Minimum Service Requirements

Service Type	Bus Stop Level of Service	Target Spacing	Thresholds
Rapid	High and Superstops	200-500 meters for High. There is no minimum requirement for Superstop spacing.	• High volume of daily passengers • High frequency/high number of services • Typical locations would include major city centre sites or at sites of regional/national significance such as an international airport.
Frequent	High	200-500 meters	• Moderate to higher daily volume of passengers • Moderate to higher frequency /four or more services • Typical locations would include sub-regional centres, suburban bus /ferry interchanges, key land-use sites such as a hospital or university
Regular	Regular	200-500 meters	• Lower daily volume of passengers • Lower frequency services • Typical locations would include residential and suburban streets often spaced 400-800 meters apart
Targeted Services	N/A	N/A	• Targeted services will often be on-demand or specific to a certain group and therefore will not require dedicated bus stops.

5.4.2 Service Reliability

To significantly improve the experience of using our public transport network and increase customer satisfaction, we need to improve the reliability of our services. A combination of bus priority measures, effective timetabling, and contractor provisions will all play a part in enabling our services to be quicker and more reliable.

Policy	Enable reliable and punctual public transport services.
Actions	• Develop effective service timetables that support reliable journey times and refine these based on network performance data; • Work with territorial authorities to implement bus priority and other supporting measures; • Ensure that measurable and enforceable reliability provisions are included in all public transport service contracts; • Implement reliability and punctuality standards as set out in Table 11 and Table 12.

Table 11: Reliability Standards

No.	Description
1	The reliability of a bus service is measured by whether the trip is completed in full within a specified tolerance. The level of tolerance will be in the range of 59 seconds before to 9 minutes and 59 seconds minutes after the departure time.
2	Operators must have contingency measures in place to ensure that, should a bus trip not run due to matters deemed to be within the operator's control, passengers are not left stranded unless weather or road conditions preclude this.

Table 12: Punctuality Standards

No.	Description
1	The punctuality of a bus service is dependent on meeting scheduled times. Scheduled bus services in an integrated network must conform, within a specified tolerance, with officially designated times set by the ORC, which may include some timing points not included in published timetables. The level of tolerance will be in the range of 59 seconds before to 4 minutes and 59 seconds minutes after the departure time.
2	No bus must depart the terminus before the specified departure time.
3	Traffic conditions and the number of passenger loadings may affect journey duration.

5.4.3 Vehicle Capacity

Consistent access to seats on our public transport network is essential to providing a comfortable and safe experience for many passengers, particularly the elderly, those with small children, and those with mobility impairments. It's essential that we support the right kind of capacity on our network, so that we offer an attractive and high-quality customer experience.

The ORC and its contracted operators monitor bus loadings on services in order to assess capacity. Under normal conditions of service, bus customers are either seated, or if standing for only short or occasional periods (e.g. during peak time). Preferably, no customers would be required to stand.

Policy	Assess and maintain sufficient vehicle capacity on public transport services to support comfortable, attractive, and safe passenger journeys.
Actions	• Ensure all fleet vehicles meet minimum vehicle capacity requirements for bus routes that are appropriate for the geography and demand; • Ensure that all operators comply and enforce vehicle cleanliness and maintenance standards; and, • Use customer service feedback to identify opportunities to improve customer experiences of using the bus and support safer journeys.

5.4.4 Customer Standards

Maintaining a high-quality customer experience across our public transport network is critical to ensuring that we retain existing customers whilst attracting new ones. To provide a high-quality customer experience, we need to ensure that all of the staff involved are well trained and provide a friendly and professional service.

Policy	Provide a high-quality and consistent customer experience across the public transport network.
Actions	• Work with contracted operators and partner agencies to implement and enforce the Customer Service Standards set out in Table 13 so that customers experience excellent customer service and safe, comfortable, and enjoyable journeys; • Provide a consistent customer experience across the public transport network; • Provide consistent fare products and other services and platforms across the public transport network;

Table 13: Customer Service Standards

Standard	Description
Performance and monitoring standard	Operators must monitor missed services and complaints in real time, acting quickly to rectify matters when required, and report back complaints and actions to the ORC.
Service providers standard	Public transport service providers must employ fit and proper staff to deal with customers and must train both management and service staff in customer service, including specialised training in assisting passengers with different access and mobility requirements, including those with disabilities, mobility aids, prams or strollers. Staff interfacing with customers must be neatly and cleanly attired, and polite and courteous.
Bus driver standards	• Anybody in a wheelchair or with a child in a pram/stroller/carrier must be given priority for use of the priority wheelchair space on a bus. • It is the bus driver's role to try and accommodate passengers. This may require the driver rearranging, when possible, passengers who are occupying seats in the designated wheelchair space. The ORC supports bus drivers arranging passengers to assist those with different access and mobility requirements to obtain suitable seating.

5.4.5 Customer Information

Accessible, accurate, and easily understood information of our public transport network plays an influential role in enabling a high-quality customer experience. We need to ensure that our customers can access this information easily, with confidence, and that it is easy to understand. A range of new technologies and methods will enable us to improve the quality of the information we provide.

Policy	Provide high quality customer information so that it is easily accessible, easily understood, and meets customer expectations.

Actions	• Ensure that customer information related to the public transport network is:
	  • Accessible and widely available;
	  • Accurate and up-to-date;
	  • Meets ORC and Orbus' branding and communication standards.
	• Explore opportunities to improve bus stop identification by customers; and,
	• Ensure that customer information is up to date and fully accessible by customers (easy to find, legible, available in formats accessible by customers with hearing and sight impairments).

5.4.6 Customer Engagement

Accessible, accurate, and easily understood information of our public transport network plays an influential role in enabling a high-quality customer experience. We need to ensure that our customers can access this information easily, with confidence, and that it is easy to understand. A range of new technologies and methods will enable us to improve the quality of the information we provide.

Policy	Proactively and regularly engage with the community to understand needs, requirements, and opportunities to improve the customer experience.
Actions	• Regularly engage with customers to understand needs and opportunities across the region; • Ensure continued use of the annual public transport Customer Satisfaction surveys;

5.4.7 Branding and Marketing

The launch of the Orbus branding in 2017, along with the launch of our Wakatipu bus services, has led to many customer benefits. Prior to the re-branding, we had no straightforward way to refer to our bus services, which can sometimes lead to confusion. By bringing the service under one unified brand we've made our network easier for people to identify the public bus service, and, importantly, to know where to go for information.

The ORC will continue to provide a consistent brand across its public transport network. All contracted operators in Otago will be required to be part of this integrated branding system. This branding will be reviewed and further developed by the ORC, with input from territorial authorities, operators, and partner agencies, to increase the quality and legibility of the brand.

Policy	Provide a consistent network brand across public transport services and infrastructure that is easily recognised and understood by our customers.
Actions	• Implement and maintain the Orbus brand so that it is consistently applied across public transport services and supporting infrastructure; • Work to improve brand recognition of Orbus; • Ensure that supporting physical infrastructure where required is branded to improve awareness of the Orbus brand and recognition of the public transport network; and, • Ensure that all advertising or other media does not negatively impact the implementation or recognition of the Orbus brand.

5.4.8 Customer Service

Bus drivers, ticketing staff, and other customer service personnel are the primary face of our public transport network and interact with our customers daily. It's critical therefore, that they are well trained in customer service as this is essential to the success of our networks.

Policy	Ensure all staff involved in public transport delivery provide high levels of customer service that meet customers' needs and expectations.
Actions	• Ensure that operators employ fit and proper staff to deal with customers; • Ensure that operators train both management and service staff in customer service, including specialised training in assisting passengers with different access and mobility requirements, including those with disabilities, mobility aids, prams, or strollers; and, • Ensure that staff interfacing with customers are to be neatly and cleanly attired, and polite and courteous. • Continually monitor customer service feedback and annual surveys to understand how customer service can be improved.

5.4.9 Ticketing System

To enable an easy to use and pleasant experience on our public transport network, we need to ensure that our ticketing system is accessible and is simple to understand. With the launch of the Bee Card on our Dunedin and Wakatipu networks, the customer experience of using the public transport network has become much easier and quicker. As well as an easy tag on tag off system, it has brought other benefits such as setting up an online profile for topping up and the ability to manage multiple cards. A key focus of this Plan is to build on this success.

The ORC will continue to maintain an integrated ticketing system on the basis of the following principles:

- Be rapid and easy for customers and bus drivers to use
- Provide a robust administrative platform for operational control of the network
- Provide a network banking system for distributing fares amongst operators
- Provide a suitable platform for further improvements to the network and any new fare arrangements that the ORC might decide from time to time
- Be capable of providing a good understanding of passenger travel patterns, to aid planning and managing the public transport network
- Support use of an integrated fare structure.

Policy	Implement and promote a simple and integrated ticketing system across the public transport network that complements and enhances the integration of the network.
Actions	• Provide a common integrated ticketing system that is simple, easy to use, and allows integrated fares; • Require all operators of services contracted or defined as integral to the public transport networks to participate in the ORC's integrated ticketing system; • Implement a 3-year transition period starting in July 2021, after which cash will not be accepted on buses.

5.5 Affordable

Objective Five
Deliver fares that are affordable for both users and communities.

We want to deliver a public transport network that provides optimal value for money for the customers who use our services, but also one that promotes fairness and sustainability for rate payers and those who contribute to funding the system. Funding for our public transport network comes from several sources: central government funding, rates, and fares. This section outlines the Policies that will allow us to deliver a public transport network that delivers value for money, retains, and attracts new customers, whilst being sustainable over the long-term.

5.5.1 Fare Structure

Since 2014, we've transitioned from a complex zonal-based fare structure to a more streamlined and simpler structure in our Dunedin and Wakatipu networks. This has enabled customers to access greater areas of our network more affordably and at a lower cost. In 2020, with the launch of the Bee Card, we trialled a flat $2 fare in Dunedin.

Going forward we want to remain open and flexible regarding the desirable fare structure we have in place across the region so that we remain adaptable to the different opportunities presented by technology and changes to customer demand. Our focus for this Plan is to move to an optimal and consistent fare structure and capping scheme to encourage greater use of the public transport network.

Policy	Provide a consistent fare structure that supports patronage growth, mode shift, and is appropriate for customer demand.
Actions	• Provide a simple and easy to understand fare structure across the regional public transport network; • Reward customers for frequent travel through fare capping; • Employ a fare structure that enables easy connections and transfers between services; • Employ a fare structure that supports the transition to cashless payment on public transport services over three years; • Monitor customer satisfaction surveys and other sources of customer feedback to improve and inform fares policy;

5.5.2 Setting and Reviewing Fares

The ORC will set fares in a way that encourages and supports long-term patronage growth and mode shift to the public transport network. Fare policies will not be used to maximise revenue but will be set to contribute to the Council's farebox recovery targets. Fare levels are not outlined in this Plan as they will continue to be reviewed and adjusted.

These reviews will help ensure a sustainable funding model that contributes to the high-quality customer experience that we are aiming for. It will also assist in helping us achieve our farebox recovery targets.

Policy	Regularly review fares to ensure they meet customer expectations and are financially viable.
Actions	• When reviewing fare levels, give regard to the desire to fund the bus network equitably, increase bus patronage, affordability, and convenience of bus travel, along with the need to fund service level improvements; • Review fares annually; • Fare pricing should be consistent with the wider objectives of this Plan, Waka Kotahi NZ Transport Agency policy and contribute to central governments transport priorities.

5.5.3 Fare Concessions

A fare concession policy ensures that we help those who do not have the financial means to access the public transport network (another means of meeting the needs of the transport disadvantaged).

As part of these Policies, the ORC will continue to support the SuperGold Card off-peak travel scheme on the basis that it continues to receive financial support from Central Government. The SuperGold card scheme is 100% funded by central government and provides free travel for senior citizens during off-peak periods. It is based on a fixed annual grant rather than being aligned to actual usage.

Policy	Provide and apply consistent fare concessions to targeted groups to improve community access to the public transport network.
Actions	• Continue to support the SuperGold card scheme providing off-peak free travel to senior citizens, subject to suitable levels of ongoing national funding; • Continue to provide funding to enable concession fares for use of the Total Mobility service; • Ensure that the maximum Total Mobility fare subsidy is $25 (including GST) and the flat fare for wheelchair-hoist trips is $10 per passenger (GST exclusive); and, • Continue to provide free travel for children up to five years. • Continue to provide a youth (5 to 18 years inclusive) concession.

5.5.4 Farebox Recovery

In previous years, the ORC was required by Waka Kotahi to set a regional target and policy for farebox recovery as a condition of funding under a National Farebox Recovery Policy. A farebox recovery of 50% has been the previous regional target included within our previous RPTPs and is within Waka Kotahi's national target. This means that approximately half the cost of operating a public transport service is funded from bus fares. The ORC has had a target of 50% fare-box recovery for the Dunedin network since 2005, and it has been achieving this target since 2010/11.

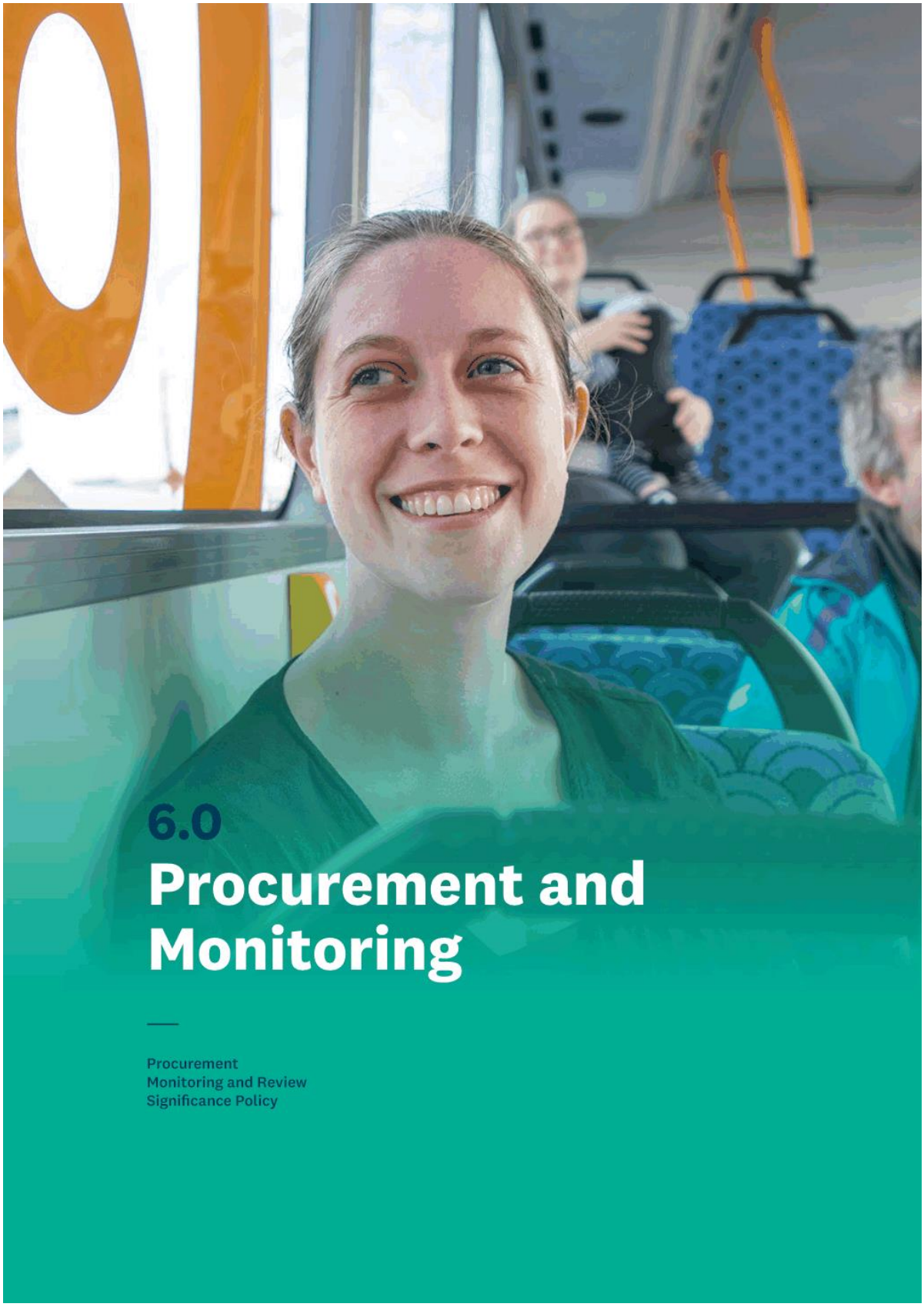
Waka Kotahi removed the 50% farebox recovery target as a condition for funding in mid-2018. The ORC therefore is no longer required to comply with a national farebox recovery target. However, the ORC considers funding up to a 50% level of farebox recovery provides for a fair sharing of the costs of operating public transport between those who benefit directly (bus users) and those who benefit indirectly. Therefore, the ORC intends to ensure that a 40 - 50% farebox recovery is met but maintain flexibility in how it applies this across its services and geography, based on context, demand, and local circumstances.

Policy	Ensure that public transport users make a fair contribution to the operation of the public transport network.
Actions	• Maintain a region-wide farebox recovery target of between 40% - 50% for scheduled services in Dunedin and Wakatipu; and, • Accept a lower recovery, if necessary, to manage special circumstances, the impacts brought by the Covid-19 pandemic, and where there is a need to increase patronage at the expense of revenue recovery;

5.5.5 Funding Opportunities

While we are aiming to attract more people to use our public transport network, there are significant funding constraints that will make it a challenge to maintain high levels of service and grow patronage. The effects of the global Covid-19 pandemic have shown us that patronage and fare revenue can drop significantly over a very small period. Our ability to maintain the high-quality public transport we want is limited by funding availability and resources. We need to actively pursue opportunities and explore different funding models. A key component of this work will be working with our territorial authorities and other key partners to understand opportunities, constraints, and areas to focus on.

Policy	Explore alternative opportunities and innovative methods to fund the operation of the public transport network.
Actions	• Work with territorial authorities, key partners, and other stakeholders to investigate alternative funding models and/or sources of revenue for the public transport network; • Investigate potential new funding and financing mechanisms (including advertising revenue) to reduce pressure on fare payers, ratepayers, and funding partners; • Advocate for a higher government contribution to the funding of public transport services and network improvements through the National Land Transport Fund.



6.0 Procurement and Monitoring

Procurement
Monitoring and Review
Significance Policy

6.0 Procurement and Monitoring

6.1 Procurement

In 2016, we transitioned to the public transport operating modem (PTOM) for all contracted services on our network. This framework seeks to build a commercially based partnering approach between procuring authorities (ORC) and public transport operators. It is also designed to provide incentives to reduce reliance on subsidies by promoting increased commerciality of bus services and providing a more transparent approach to service planning and procurement.

The procurement policies that will guide delivery of this RPTP are built on those developed for the transition to PTOM. Specifically, with the transition now complete, the focus for procurement is to ensure continued efficiency, effectiveness, and value for money under the new operating framework.

The ORC has agreed a new procurement framework with Waka Kotahi, which will be used to inform the procurement of all contracted services specified in this RPTP. Under the framework, we will procure all public transport units through performance-based contracts. This creates an environment where goals and objectives align through collaborative planning, joint investment, performance incentives and shared risks and rewards.

The procurement strategy will be used to inform:

- How we manage contracts;
- How we work with our operators to plan for service improvements and changes to the bus network; and,
- How we approve or decline applications for Exempt services.

6.2 Monitoring and Review

The ORC undertakes monitoring of Otago's public transport network in several ways:

- By monitoring operator performance to ensure that public transport operators are delivering services at the required level to meet their contractual obligations; and,
- By undertaking operational monitoring to ensure that the public transport network is contributing to the overall objectives of this Plan.

Occasionally, there will be a need to take account of changing circumstances and demands, which will often be identified through the monitoring programme. The Policies in this section establish the process for making changes to this plan, which includes the significance policy for determining the appropriate level of consultation.

6.2.1 Performance Monitoring

This section sets out the information the ORC is likely to request from operators of public transport units in Otago. The information we seek assists with public transport planning, contracting, monitoring, and benchmarking services. It also assists the NZTA to develop a national overview of public transport. This provision does not enable the ORC to require information from operators of exempt services, but it does not prevent us requesting it. These provisions for information are in accordance with section 127 of the LTMA. The ORC will require all operators of units under PTOM to provide for each unit:

- Customer inquiries and complaints;
- Patronage data;
- Reliability and punctuality;
- Revenue data;
- Safety and security incidents;
- Compliance with vehicle quality standards; and
- Carbon emissions.

As part of its ongoing performance monitoring programme, the ORC will undertake regular reporting of operational performance for all contracted units to assess operator performance and viability of the contracted service.

The following information will be used to assess performance:

- Reliability, punctuality and adherence to schedule;
- Complaints and compliments;
- Service quality and customer experience;
- Bus appearance and condition;
- Revenue protection (fares evasion);
- Patronage levels;
- Non-patronage based revenue generation; and
- Operator responsiveness.

6.2.2 Unit Monitoring

As part of its monitoring process, the ORC will undertake regular comprehensive reviews of each contracted service Unit in Otago. We will ensure that all Units comply with unit and network monitoring requirements of the Waka Kotahi NZ Transport Agency as technology allows. As part of the contracts for each unit, the ORC will include specific performance targets relevant to each unit to ensure that the services meet the overall objectives of this Plan.

6.2.3 Reviewing the RPTP

The Land Transport Management Act (2003) requires the ORC to ensure that the Plan is kept current for a period of not less than three years in advance, but not more than ten years in advance. The Plan may be reviewed or varied from time to time, but it must be reviewed, and varied if necessary, when the public transport components of the RLTP are approved or varied.

The ORC will:

- Review the RPTP in alignment with the statutory requirements outlined in the Land Transport Management Act 2003; or,
- Undertake a review when otherwise agreed by Council.

If a review of this Plan is undertaken, the ORC will:

- Work with partner organisations to undertake the review; and,
- Use the policy on significance (set out below) to determine how it will consult on any future variations to this RPTP.

6.2.4 Implementation Plan and Short-term Priorities

To address the priorities for Dunedin, Wakatipu and the wider Otago Region, a high-level implementation plan has been developed focusing on short (1-3 years) and medium to long-term (4-10 years) actions. These are shown in **Table 14.**

Table 14: Implementation Plan

Term	Action	Location
Short term (years 1-3)	Single stage public transport Business Case (SSBC) for Dunedin (required by Shaping Future Dunedin Transport) and Detailed Business Case for Queenstown (required by Queenstown Transport Business Case)	Dunedin
	Implement bus priority - Princes Street bus priority corridor and Wakatipu's SH6 corridor	Dunedin and Queenstown
	Establish level of service triggers (networks)	Dunedin and Queenstown
	Implementation of Park and Ride	Dunedin
	Have wider conversations with Otago residents and organisations (including WDC, CODC, CDC where appropriate) about community transport needs, as reported to the ORC, to understand the case for investment in services to advantage communities not currently served	Otago Wide
	Work with communities and interested parties to develop business cases to consider delivery of wider services where the communities wish to have services	Otago Wide
	Promote/market Bee Card, with a focus on attracting new users. Capitalise on hospital construction congestion in Dunedin.	Dunedin and Queenstown
	Monitor national development and technology changes.	Otago Wide
	Consider consolidating units for re-tender.	Dunedin and Queenstown
	Superstop and hub upgrades in Dunedin (dependent on SSBC).	Dunedin
	Continue to work alongside partners in Connecting Dunedin and Way to Go for integrated planning and programmes for mode shift	
	Investigate opportunities to move to low emission vehicles, or alternative fuels and technologies, for contracted services	Otago Wide
Medium to long-term (years 4-10)	To be reviewed as part of the next RPTP update, building on the actions to be undertaken in the next three years.	Otago Wide

6.3 Significance Policy

6.3.1 Assessing Significance for Consultation Purposes

This sets out the ORC's policy on significance, which is required to determine whether any proposed variations to the Plan are significant for the purpose of Section 126(4) of the LTMA. The level of significance or a variation affects the level of consultation required before we can officially make any changes to the Plan. The following policies set out how the ORC would determine whether a variation to the plan is deemed significant enough to require public consultation.

The section below specifies Council's position on significance in relation to matters raised by this RPTP.

6.3.1.1 Significant variations requiring full consultation

The following variations are significant and require full public consultation:

- Any change to this significance policy;
- Any change with a more than minor impact on the ORC's ability to:
  - Achieve its public transport goals;
  - Achieve the strategic direction and guiding principles of the Plan; and,
  - Achieve the objectives of the Plan, or the Regional Land Transport Plan.

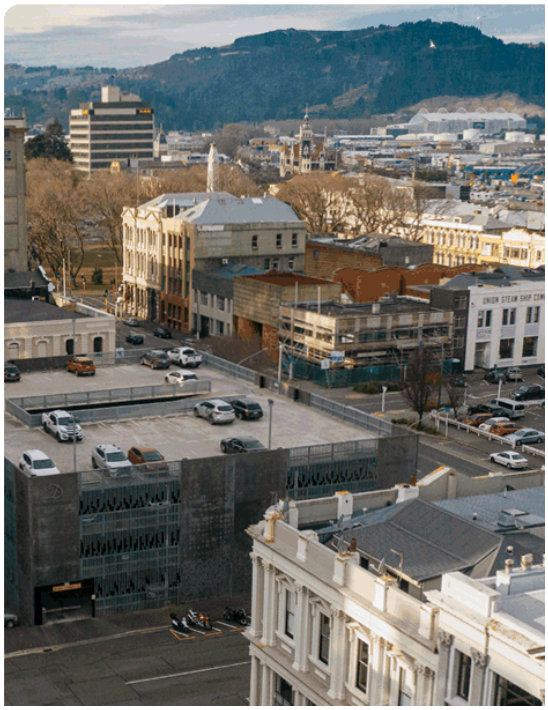
When assessing the significance of any proposed variation, the ORC will consider:

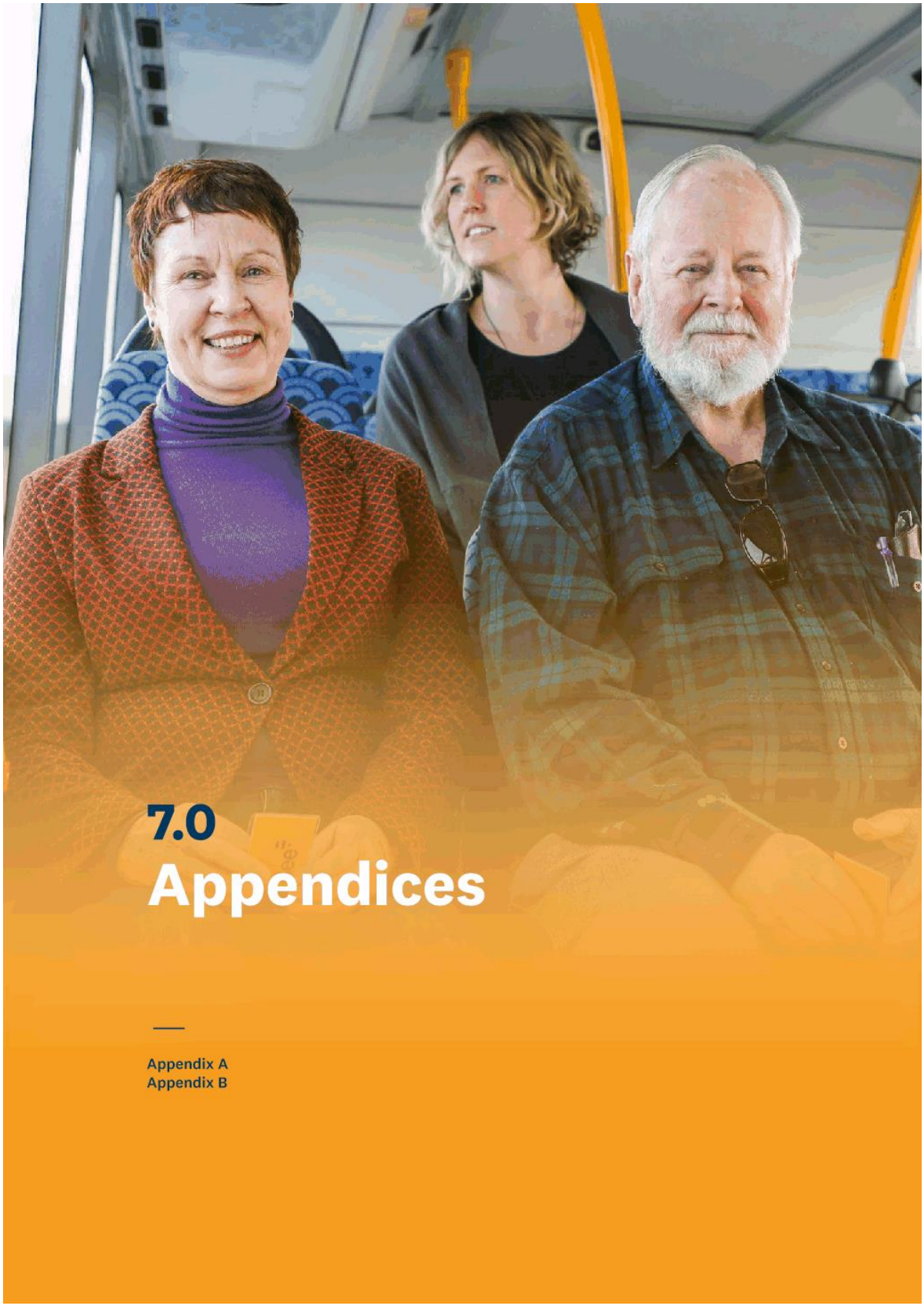
- The reasons for the variation;
- Consistency with, or effect upon, the overall strategic direction, affordability and integrity of this plan, including how the variation might affect the overall strategic direction, affordability and integrity of the RLTS, the RLTP or the ORC's LTP (whether proposed or adopted);
- Whether the matter has already been publicly consulted upon by the ORC;
- Those persons likely to be affected by the variation; and,
- Options available to the ORC, their costs and benefits.

6.3.1.2 Non-significant variations – without full public consultation

The following changes are not deemed significant and thus do not require full public consultation. They may instead involve targeted community consultation:

- Service reviews. As a service review may only affect a small portion of the region, or a city, full consultation is not required. Key stakeholders may be included in discussions and targeted public engagement is likely when preferred options are available.
- Minor changes in delivery of services. Minor changes in delivery of services to improve efficiency have only a local impact. In these cases, any engagement will be targeted to the affected community, and with operators and district/city councils involved.
- Trial services. Implementing bus services as a trial service may only affect a small portion of users. Targeted public engagement is suitable for this purpose.
- Other variations. Any proposals for changes that affect a small sector of the community or the industry (i.e. Total Mobility or a vehicle quality standard) may be worked through with those most likely to be affected and relevant stakeholders.





7.0 Appendices

Appendix A
Appendix B

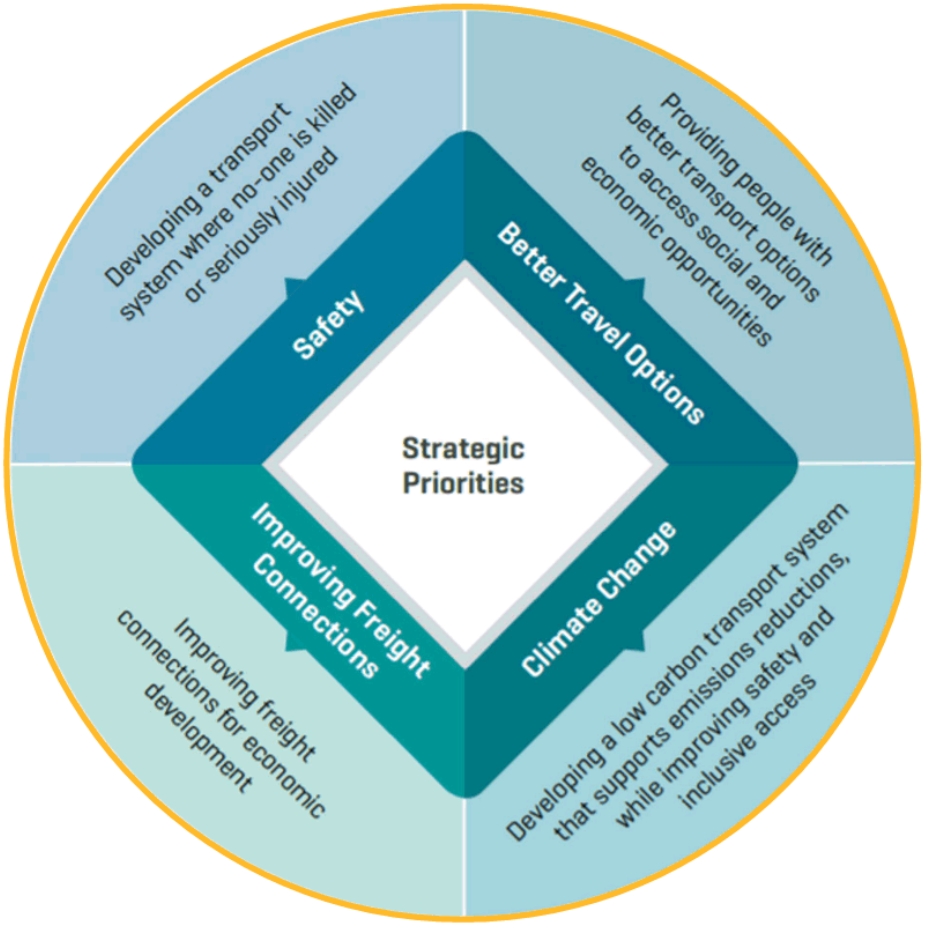
7.0 Appendices

7.1 Appendix A – Strategic Context

7.1.1 National Context

7.1.1.1 Government Policy Statement on Land Transport (GPS) 2021

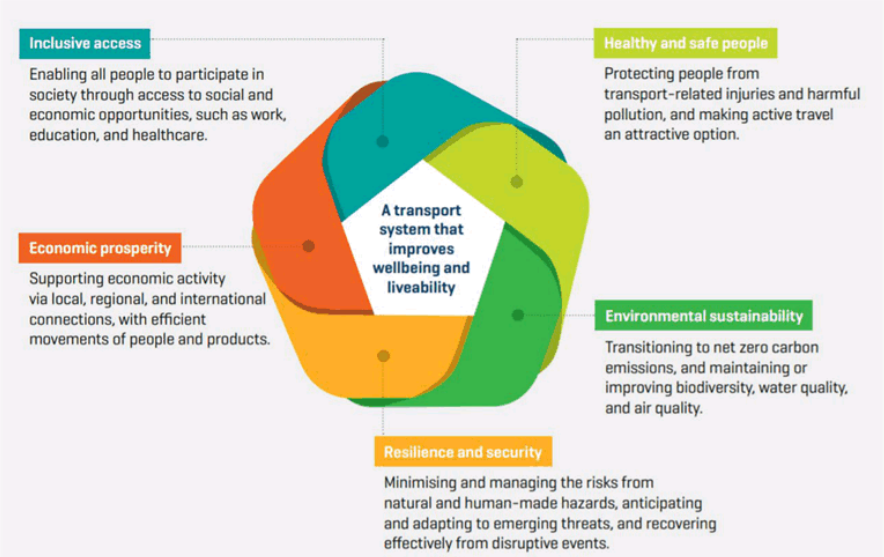
The GPS 2021 outlines the Government's priorities for land transport, providing direction and guidance to those who are planning, assessing, and making decisions on transport investment for the next 10 years. The GPS 2021 identifies four strategic priorities for investment: safety, better travel options, improving freight connections and climate change with goals of reducing harm, taking a stronger multi-modal approach, and improving community wellbeing and greater liveability outcomes.



7.1.1.2 Ministry of Transport Transport Outcomes Framework

The Ministry of Transport's Transport Outcomes Framework guides future transport planning in New Zealand. The framework emphasises that the purpose of the transport system is to improve people's wellbeing and the liveability of places, and focuses on five outcomes - inclusive access, economic prosperity, healthy and safe people, environmental sustainability, and resilience and security.

Figure 19: Transport Outcomes Framework



7.1.1.3 Arataki

Arataki presents Waka Kotahi NZ Transport Agency's (Waka Kotahi) 10-year Plan for what is needed to deliver on the government's current priorities and sets out the long-term outcomes for the land transport system. The Plan adopts a place-based approach, recognising that integrated land-use and transport planning is needed to better plan for growth and manage change to deliver a safer and more connected transport system that offers choice.

7.1.1.4 Keep Cities Moving

Keeping Cities Moving is a Waka Kotahi plan to improve travel choice and reduce car dependency. It aims to improve the quality, quantity and performance of public transport facilities and services, and walking and cycling facilities by making shared and active modes more attractive and influencing travel demand and transport choices. Wakatipu is included in this initiative.

7.1.1.5 Public Transport Operating Model

The Public Transport Operating Model (PTOM) seeks to build a commercially based partnership between regional councils and public transport operators, creating an environment of aligned goals and objectives through collaborative planning, joint investment and risk and reward sharing.

The ORC adopted the PTOM in 2016 for the planning and procurement of all new contracted units, as required by the LTMA. This framework has allowed the ORC to work with its suppliers, operators, and funding providers to develop PTOM units that implement a form of risk/reward model into its contracts. This has ensured that there is shared responsibility and ownership between the ORC and its operators.

7.1.1.6 National Farebox Recovery Policy

The National farebox recovery policy was introduced in 2010 and included a target to achieve a national farebox recovery ratio of no less than 50% over the course of the next two National Land Transport Programme (NLTP) cycles (2015-18). The remaining funding is provided though NZTA grants and local rates. As a condition of funding approval, all regional councils were required to include a farebox recovery policy in their adopted Regional Public Transport Plans. Waka Kotahi NZ Transport Agency have not introduced a new national farebox recovery target. This means the initial target has not applied since mid-2018.

7.1.1.7 New Zealand Energy Efficiency and Conservation Strategy (2017 – 2022)

The New Zealand Energy Efficiency and Conservation Strategy (2017 – 2022) sets the overarching policy direction for government support and intervention for the promotion of energy efficiency, energy conservation and the use of renewable sources of energy. Efficient and low emissions transport is one of three priority areas, with transport presenting one of the country's greatest potential mechanisms to reduce emissions.

7.1.1.8 Climate Change Response (Zero Carbon) Amendment Act (2019)

The Climate Change Response (Zero Carbon) Amendment Act (2019) provides a framework by which New Zealand can develop and implement clear and stable climate change policies and sets a new domestic greenhouse gas emissions reduction target for New Zealand to reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050.

7.1.2 Regional Policy Context

7.1.2.1 Otago Southland Regional Land Transport Plan (RLTP) 2021-2031

The Otago RLTP is the primary document guiding integrated land transport planning and investment within the combined Otago and Southland regions. It has been prepared as required by the Land Transport Management Act 2003 (LTMA). Broadly, the RLTP:

- Sets the strategic transport direction to guide transport activities in Long Term Plans (LTPs) and identifies the agreed view of regional transport priorities to inform the National Land Transport Programme (NLTP)
- Sets the long-term vision and strategic direction for the Otago land transport system
- Identifies the agreed regional transport priorities for investment in the short to medium term
- Presents the activities of approved organisations in a single coordinated three to six-year programme, as a bid for funding from the National Land Transport Fund (NLTF)
- Provides the basis for communication of Otago transport direction and priorities with stakeholders and the general public.

7.1.2.2 Otago Regional Policy Statement (RPS)

The Partially Operative Otago RPS 2019 sets the set the environmental management direction for Otago. It includes policies relating to natural hazards, climate change and energy efficient transport[23].

[23]For example, Policy 4.4.6 says:

Enable energy efficient and sustainable transport for Otago's communities, by all of the following:

a) Encouraging the development of compact and well integrated urban areas, to reduce travel needs within those areas;

b) Ensuring that transport infrastructure in urban areas has good connectivity, both within new urban areas and between new and existing urban areas, by all of the following:

i. Placing a high priority on walking, cycling, and public transport, where appropriate;

i. Maximising pedestrian and cycling networks connectivity, and integration with public transport;

iii. Having high design standards for pedestrian and cyclist safety and amenity;

c) Enabling the development or upgrade of transport infrastructure and associated facilities that both:

i. Increase freight efficiency; and

i. Foster the uptake of new technologies for more efficient energy uses, and renewable or lower emission transport fuels.

d) Fostering uptake of public transportation through provision of safe, reliable and well sheltered alternatives to private transport.

7.1 Appendix B – Public Transport Services Integral to the Network

Table 15 and **Table 16** sets out the proposed Units that are integral to the Dunedin and Wakatipu networks. **Table 17** outlines our proposed trial units.

Table 15: Proposed Dunedin Integrated Network

Route Number	Unit	Route Description	Service Type	Peak Frequency
1	1	Palmerston – City. City - Palmerston	Targeted	N/A Weekdays Only
14	1	Port Chalmers – City City - Port Chalmers	Regular	30 Minutes
18	1	Portobello (Harington Point) – City City - Portobello (Harington Point)	Regular	30 Minutes
63	1	Balaclava - City - Logan Park. Logan Park - City - Balaclava	Rapid	15 Minutes
8	2	St Clair - City – Normanby. Normanby - City - St Clair	Rapid	15 Minutes
33	2	Corstorphine - Caversham - City – Wakari. Wakari - City - Caversham - Corstorphine	Regular	30 Minutes
50	3	St Clair Park - City – Helensburgh. Helensburgh - City - St Clair Park	Regular	30 Minutes
15	3	Ridge Runner Northbound Ridge Runner Southbound	Regular	30 Minutes
3	4	Ross Creek - City - Ocean Grove. Ocean Grove - City - Ross Creek	Regular	30 Minutes
19	4	Waverley - City – Belleknowes. Belleknowes - City - Waverley	Regular	30 Minutes
44	4	St Kilda - City - Halfway Bush. Halfway Bush - City - St Kilda	Regular	30 Minutes
55	4	St Kilda - City – Brockville. Brockville - City - St Kilda	Regular	30 Minutes
61	4	City – Kenmure. Kenmure - City	Regular	30 Minutes
70	5	Brighton - Abbotsford and Green Island. Green Island - Abbotsford and Brighton	Regular	30 Minutes
77	5	Mosgiel, Fairfield, Green Island – City. City - Green Island, Fairfield, Mosgiel	Regular	30 Minutes
80	5	Mosgiel East circuit	Regular	40 minutes weekdays only
81	5	Mosgiel East circuit	Regular	40 minutes weekdays only
5	Dunedin Transitional Services	Pine Hill - City - Calton Hill	Frequent	20 Minutes
6	Dunedin Transitional Services	Calton Hill - City - Pine Hill	Frequent	20 Minutes
10	Dunedin Transitional Services	Opoho - City - Shiel Hill	Frequent	20 Minutes
11	Dunedin Transitional Services	Shiel Hill - City - Opoho	Frequent	20 Minutes
37	Transitional – will become part of 1 or 3	Concord - City - University	Regular	30 Minutes
38	Transitional – will become part of 1 or 3	University - City - Concord	Regular	30 Minutes

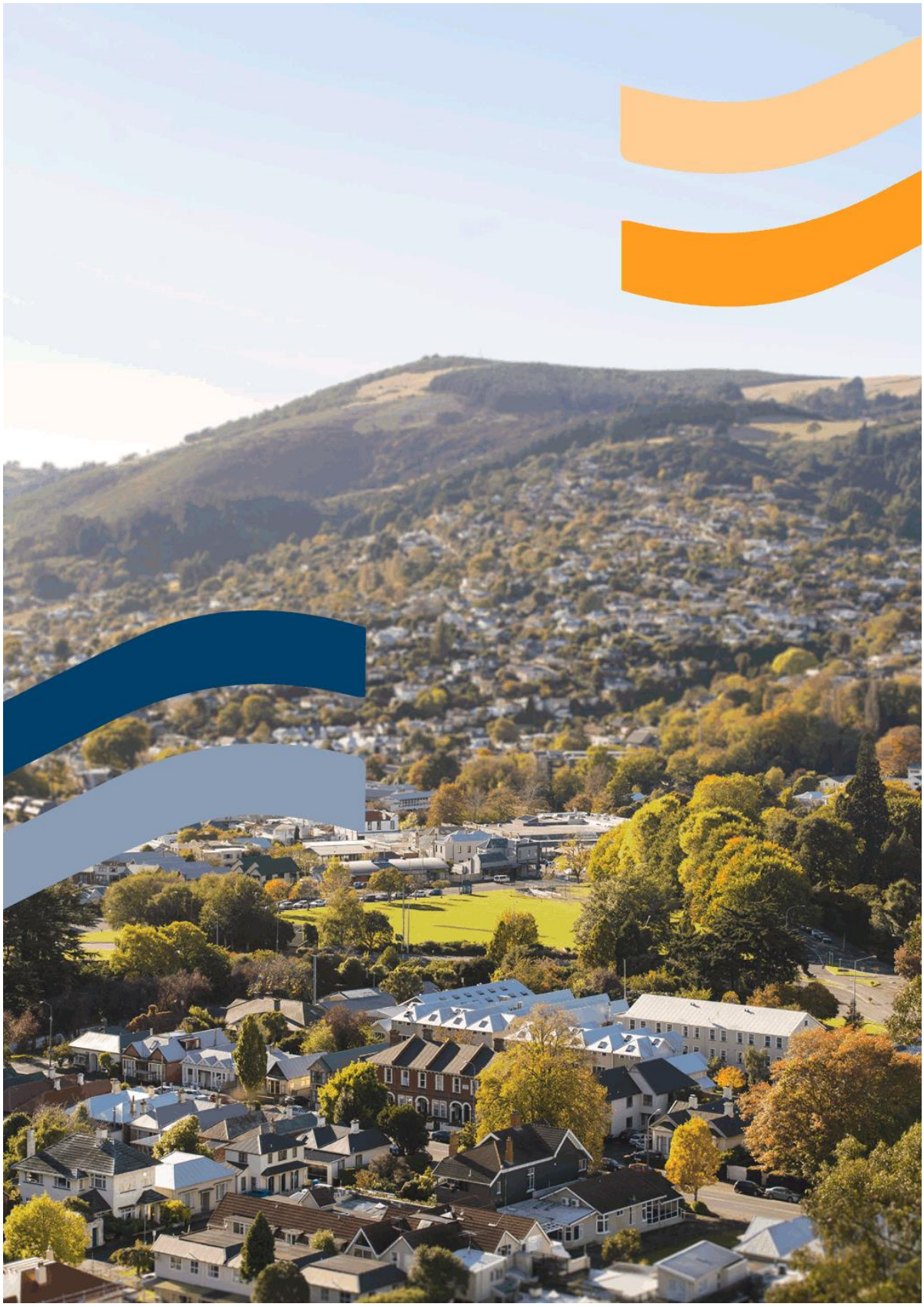
Table 16: Proposed Wakatipu Integrated Network Units

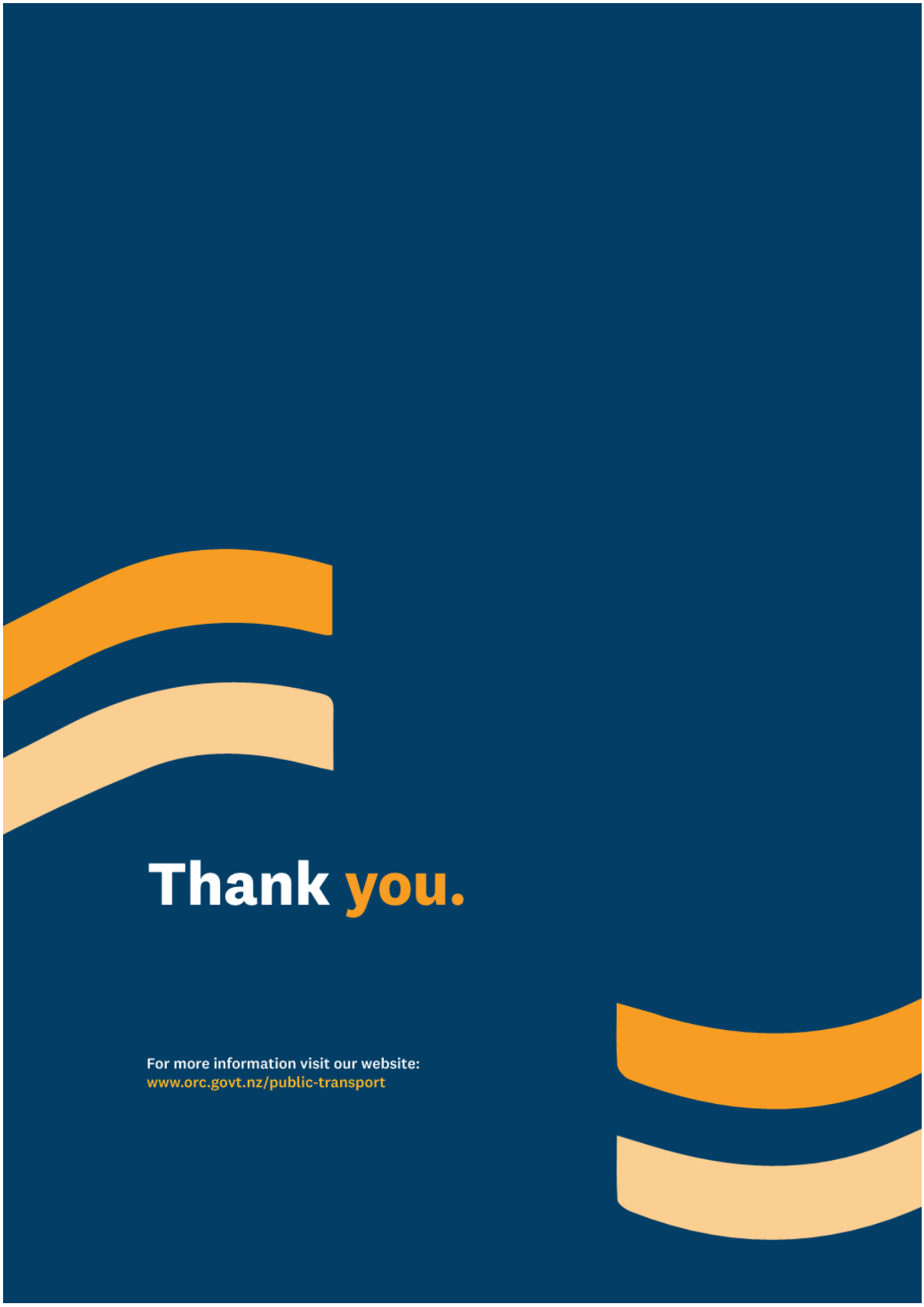
Route Number	Unit	Route Description	Service Type	Peak Frequency
1	6	Sunshine Bay to Remarkables Shops	Rapid	15 Minutes
4	6	Frankton Hub to Jacks Point	Regular	60 Minutes
5	6	Queenstown to Lakes Hayes Estate	Frequent	30 Minutes
2	7	Arthurs Point to Arrowtown	Frequent	30 Minutes
3	7	Kelvin Heights to Frankton Flats	Regular	60 Minutes
N/A	8	Trial Frankton Arm to Queenstown Bay water ferry service	To Be Defined	To Be Defined

Table 17: Proposed Trial Units[24]

Route Number	Unit	Route Description	Service Type	Peak Frequency
N/A	T1	South Otago to Dunedin	To Be Defined	To Be Defined
N/A	T2	Wanaka Township and Surrounds	To Be Defined	To Be Defined
N/A	T3	Wanaka to Queenstown	To Be Defined	To Be Defined
N/A	T4	Cromwell to Queenstown	To Be Defined	To Be Defined
N/A	T5	Wakatipu Intra-District	To Be Defined	To Be Defined
N/A	T6	Oamaru Demand-Responsive	To Be Defined	To Be Defined
N/A	T7	Dunedin Demand-Responsive	To Be Defined	To Be Defined

[24]Funding commitment for these trial units has not been confirmed and therefore remain aspirational.




Thank you.
For more information visit our website:
www.orc.govt.nz/public-transport

DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

25 May 2021

Regional Public Transport Plan consultation
Otago Regional Council
Private Bag 1954
Dunedin 9054

Tēnā koutou

SUBMISSION ON THE OTAGO REGIONAL COUNCIL'S 2021-31 DRAFT PUBLIC TRANSPORT PLAN

1. The Dunedin City Council (DCC) welcomes the opportunity to submit on the Otago Regional Council's 2021-31 draft Regional Public Transport Plan (RPTP).

Process, Roles and Responsibilities

2. Currently responsibility for providing public transport in Dunedin is shared between the ORC and DCC, with the DCC providing critical infrastructure such as bus stops. To deliver an effective public transport network that enables Dunedin residents to access social and economic opportunities, the DCC and ORC need to work together to deliver an integrated transport network.

3. The draft RPTP emphasises the importance of integrated transport planning and the need for the ORC to work collaboratively with road controlling authorities (including the DCC) on planning mechanisms such as spatial plans and infrastructure provision (e.g. to provide multi modal access at bus stops). The DCC recognises the difficulty in achieving fully integrated and collaborative outcomes and is interested in investigating new approaches.

4. The DCC seeks the transfer of Dunedin's public bus services from the ORC to the DCC to improve transport solutions and further progress Dunedin's ambition to be Zero Carbon by 2030.

5. The DCC seeks clarity of the respective roles of the ORC's partners in the implementation of the plan. Table 14 '*Implementation Plan*' on page 66 lists actions to be delivered in the short to long term but does not identify which of these will be delivered by ORC's partners. For example, the Princes Street bus priority, if approved through the 10 year plan process, will be delivered by the DCC. The DCC would like to see a clear outline of roles and responsibilities on the actions committed to by the ORC and partner organisations.

Dunedin context

6. In Section 2 (titled 'Context') of the RPTP, it states that Dunedin city makes up more than half of the Otago region's population. The DCC suggests a greater focus in this section on the

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role Dunedin plays in the Otago region and the role the public transport network plays in the city. The affordability and accessibility of public transport connections both within and from other towns to Dunedin are important as Dunedin is a major health and education hub for the region.

7. The context section also looks in depth at tourism growth and the COVID-19 impacts on tourism. However, the DCC suggests recognising other benefits that public transport can contribute to the economy. Public transport continues to have an important role enabling people to access employment, health and education services. It can also contribute to improving freight reliability on journeys to Port Otago through reducing congestion on the Dunedin road network.

Fares and Farebox recovery and Funding

8. The DCC strongly supports simple and affordable bus fares and would like to see a continuation of the $2 flat fares or lower fares beyond the current trial which ends on 30 June 2021. As part of this DCC would encourage ORC to investigate and trial $1 fares, or free fares to address the issue where short trips are now more expensive than prior to the introduction of the Bee card. Lower fares will encourage mode shift and contribute to Dunedin's goal of being net carbon zero by 2030. The DCC seeks clarity on fares from July 2021 and welcome the opportunity to work collaboratively to ensure affordable fares are maintained.

9. The DCC supports the key priority 'Improve the Customer Experience' with the goal that 'more people choose to use public transport more often' and 'Objective one - contribute to carbon reduction and improved air quality through increased public transport mode share and sustainable fleet options'. DCC sees low fares as a major contributor to achieving these goals. Evidence of this is provided by the Otago Bus Patronage – 2019 vs 2020 figures on page 19, which shows that patronage levels in Dunedin were higher in 2020 than in July and August of the previous year when buses were free. This was achieved despite the continuing effects of the COVID-19 restrictions.

10. The DCC sees the farebox recovery targets of 40% - 50% as contradictory to the key priorities and objective as stated above. Under Waka Kotahi's current guidance, fare policies should be set to achieve the desired objectives and priorities. The draft RPTP states that the purpose of a farebox recovery target is to achieve a fair sharing of costs and to deliver fares that are affordable for both users and communities (Objective five). The DCC is concerned this does not take into account the number of public transport users with low income, and the consequential cost to the Dunedin community as a whole, if mode shift and emission reduction are not achieved.

11. The DCC supports initiatives to encourage regular usage of the public transport system through fare discounts, fare caps and welcomes the ORC's desire to explore new funding opportunities. DCC encourages the ORC to be proactive in providing a funding path for bulk purchasing bus passes for major trip generators such as schools, tertiary institutions, District Health Boards, and workplaces. The DCC would welcome a collaboration with the ORC on this through its workplace travel planning programme.

Carbon Zero by 2030

12. In 2018/19, the Transport sector was assessed as the city's largest source of emissions, accounting for 39% of total gross emissions. Within the transport sector, the largest emissions category is land transport (petrol and diesel, on- and off-road), accounting for 64% of transport emissions. The DCC strongly supports policies to reduce the carbon emissions produced from the transport network to support Dunedin's goal of being net carbon zero by 2030.

13. The DCC therefore supports a shift to electric buses and/or alternative fuel buses. The DCC has actively promoted uptake of electric vehicles (EVs) in Dunedin since 2015, recognising the importance of EVs in reducing emissions. The DCC recommends a prompt conversion of the bus fleet to enable further emission reductions in the Transport sector.

14. The DCC encourages the ORC to explore commuter rail as a low carbon transport mode. Feedback on the DCC's draft 10 year plan 2021-31 showed support for commuter rail from Mosgiel to Dunedin.

Technology and Innovation

15. The DCC supports using technology and innovation to improve public transport. The DCC supports the ORC improving the quality and access to information and encourages the ORC to work with the DCC on improving the usage of data and technology. DCC urges ORC to integrate real time information into the displays at the bus hubs, and displays at future Super Stops.

16. The DCC looks forward to working with the ORC to utilise improved data about service performance and usage to improve supporting infrastructure and to review the scheduled length of services to provide reliable services for commuters.

17. The DCC is supportive of utilising technology to facilitate demand-responsive transport services in areas of low demand. DCC looks forward to working with ORC on implementing Mobility as a Service platforms to enable mode shift.

18. Alongside technology, the DCC supports the focus on multi-modal access to bus stops, carrying bikes on buses and investigating options to increase bike storage on buses.

The Dunedin Network

19. Dunedin's public transport network was last reviewed in 2014. Population growth and major projects that are likely to have an impact on the road network, such as the George Street redevelopment and the Hospital rebuild, provide a case for review.

20. Table 4 'Dunedin Network Key Opportunities' lists re-enforcement of the central spine of the network along George Street as a strategic response. This needs to take the current George Street redevelopment project, into consideration as it may result in road network changes

affecting bus routes travelling through the CBD. The DCC would like to actively work with the ORC to articulate a vision for the future of public transport in Dunedin's central city.

21. The DCC recommends a review of the bus frequencies, timetables and operating hours of all services to increase levels of services to encourage mode shift and provide for shift workers. As part of this DCC would like to see express services at peak times to areas like Mosgiel and Port Chalmers.

22. Table 5 'Dunedin Network Key Projects' on page 30 includes investigating 'alternative frequencies and operating hours to ensure they are simple, legible and meet customer requirements as best as possible within available funding'. The DCC is concerned about the wording of 'as best as possible within available funding' as it could conflict with the goals to drive mode shift and having a customer focus if funding becomes an issue.

23. DCC would like to see opportunities to trial services connecting townships such as Middlemarch and Outram identified in the RPTP.

24. The DCC recommends bus number 1 (route Palmerston-Dunedin) increase its frequency and operating hours, achieved in the form of a demand-responsive service or a regular service. Submitters on the DCC's draft 10 year plan sought improvements to the span of service and requested the introduction of weekend services.

25. The DCC recommends a free City Centre Loop Bus be trialled by ORC to improve access around the CBD. The DCC requests that the ORC includes a trial unit in the draft RPTP which could provide for a central city loop bus in Dunedin. Attached to this submission are the two feasibility studies that were jointly commissioned by ORC and DCC, which present possible route and vehicle procurement options.

26. The DCC would consider running the trial itself (subject to exemption under s134 of the Land Transport Management Act) but submit that a trial is likely to provide better information if it is conducted in a way that coordinates with the broader public transport network. The DCC welcome the opportunity to work collaboratively with ORC to achieve the potential benefits that operating a Central City Bus Loop would bring.

Impacts on lower socio-economic residents

27. The DCC seeks clarity on how the policies set out under 'considering the needs to the transport disadvantaged' will support lower socio-economic demographic groups. Policies about affordability, such as retention of low flat fares or specific concessions for these groups, are currently not included.

28. The proposed removal of cash on buses can have a disproportionate impact on some groups who are already at risk of transport disadvantage. The impact of removing cash will need to be offset by offering cash top-up facilities near bus stops across a higher number of locations than at present.

29. In section 2.6.1.4 (Increasing Transport Access) the DCC notes that deprivation is not only an issue in rural parts of the region. There are parts of Dunedin where deprivation is also an

issue. Dunedin has the lowest median income in the region, due in large part to groups within the city on low incomes.

30. In section 2.6.1.6 (Improving Quality and Access to Information) the DCC suggests the ORC consider including 'providing information in accessible formats for people with disabilities' in the key opportunities.

Other matters

31. In addition to the points raised above there are other various matters where the DCC seeks clarification or expresses support for.

- *Section 1.3: Reviewing the RPTP, bullet point 4) Assist in various projects delivered by Connecting Dunedin partnership*
  The DCC recommends making it clearer DCC, ORC and Waka Kotahi are the three partner organisations who deliver the various projects. The current wording suggests the Connecting Dunedin Partnership group itself has decision making and delivery functions, which is not the case.

- *Section 2.6.1.2: Regional Connectivity*
  The DCC seeks a correction in this section as Palmerston is a rural community and is connected to Dunedin by bus.

- *Section 2.6.1.2: Intra-regional Travel*
  The DCC supports linking Clutha District with Dunedin with consideration given to the timing of services. Many people from Clutha District travel to Dunedin to access healthcare services. Having public transport connections that help meet this demand will need to be an important consideration in service design.

- The DCC seeks clarity on what is intended by the collaborative development of rideshare and community transport options to support smaller communities and whether these will be demand responsive transport services.

- *Section 3.6.2: Ferry*
  Reference is made to Dunedin having opportunities for future ferry services to be considered. The plan should mention that there are tourism/recreational focused ferry services already operating on the Otago Harbour (e.g. the Port Chalmers to Portobello ferry).

- *Figure 9: Accessibility to Frequent Bus Services in Dunedin and Mosgiel*
  This figure is very low resolution, but there appears to be gaps in coverage in South Dunedin and Mosgiel. The DCC seeks clarity on whether this is an error, or if there are areas of poor coverage in parts of Dunedin. If there are gaps in access to services, the DCC would urge the ORC to review the network in these areas to ensure adequate coverage for these communities.

- *Section 5.4.1 Physical infrastructure*

The RPTP notes that targeted services will not require bus stops, which is concerning as bus number 1 to Palmerston is classified as a targeted service and utilises bus stops. Demand responsive services may also be classified as targeted services in the future, and these may need bus stops as well, depending on how the service will be run. The DCC suggests that the wording is changed to 'may not require bus stops' to accommodate the potential need for bus stops in targeted services.

- *Section 2.6.2 Dunedin Network*
  The Strategic Response on the first item 'ease and convenience of driving leading to high private vehicle mode share' looks to be an error. The DCC suggests that it should be changed to read 'to improve public transport, through attractive fares, longer span of services and reliable frequencies'.

- *Section 5.4.2 Service Reliability*
  The DCC supports the policy action 'Develop effective service timetables that support reliable journey times and refine these based on network performance data' and the introduction of performance monitoring. The DCC is interested in utilising the data and working with the ORC to improve the reliability and punctuality of services.

- *Section 5.4.6 Customer Engagement*
  This duplicates section 5.4.5 customer information, and therefore the DCC suggests removing this section.

- *Section 5.4.3 Vehicle Capacity*
  The DCC recommends including a policy in this section that states frequency will be increased if demand exceeds capacity over a certain period of time.

- *Section 5.3.4. Events*
  The DCC supports provision of public transport access to major events as this will help to reduce congestion, increase access and encourage mode shift.

Concluding remarks

32. Thank you for the opportunity to submit on the Otago draft 2021-31 RPTP.

33. The DCC wishes to speak to this submission.

34. If the ORC would like to clarify any of these issues raised in the submission, please do not hesitate to get in touch.

Yours faithfully,

Aaron Hawkins
MAYOR OF DUNEDIN

Inner City Bus Loop
Otago Regional Council
28-May-2020

AECOM Imagine it Delivered

Dunedin Inner City Bus Loop Feasibility study

28-May-2020
Prepared for – Otago Regional Council – ABN: N/A

Dunedin Inner City Bus Loop Feasibility study

Client: Otago Regional Council

ABN: N/A

Prepared by

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Quality Information

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Prepared by	Torin Smith and Robyn Hyde
Reviewed by	Derek Walsh

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Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
	28-Feb-2020	Stage One	Robyn Hyde Principal Transport Planner	
	17 March 2020	Stage Two		
	9 April 2020	Stages Three and Four		
	28 May 2020	Final		

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AECOM

Inner City Bus Loop
Dunedin Inner City Bus Loop Feasibility study

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Executive Summary

Otago Regional Council (ORC) and Dunedin City Council (DCC) commissioned AECOM to undertake a study to investigate the feasibility of an inner city bus loop for Dunedin. The scope for this investigation includes:

- Route development, frequency and operating hours;
- Costs, patronage requirements and revenue;
- Engagement with the NZ Transport Agency to understand funding criteria
- Transformational context
- Case studies.

The feasibility study is joint funded by DCC and ORC and the development of this study has been steered by both organisations.

Objectives

The objective of the study is to investigate a bus loop option to connect key destinations within Dunedin's central city to:

- help encourage shoppers and visitors to move around the central city and support local businesses
- improve accessibility for people with mobility issues
- provide a mitigation for restricted vehicle and reduced bus access on George Street in the future
- service the central city and encourage commuters to use public transport rather than private vehicles
- provide a park and ride option for inner city car parks.

Route development

A range of important destinations to be served by a new bus route were identified, and four route options were collaboratively developed in a workshop with DCC and ORC key staff. The route options are shown below.

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Option 1 – Figure 8 loop

Option 2 – South loop

Option 3 – North Loop

Option 4 – Maximum coverage loop

Destinations served

The key destinations served by each option are displayed in the following table.

Destination	Option 1	Option 2	Option 3	Option 4
Bus Hub	✔	✔	✔	✔
Train Station	✔	✔	✔	✔
Settlers Museum	✔	✔	✘	✔
Queens Garden	✔	✔	✘	✔
Princes Street	✔	✔	✘	✔
Speight's Brewery	✘	✘	✘	✔
Moana Pool	✘	✘	✘	✔
Art Gallery	✔	✔	✘	✔
St Paul's Cathedral	✔	✔	✘	✔
Octagon	✔	✔	✘	✔
Library	Part	✔	✘	Part
Meridian Mall	✔	✔	✔	✔

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Hospital	✔	✕	✔	✔
Otago Museum	Part	✕	Part	Part
University of Otago	✔	✕	✔	✔
Otago Polytechnic	✕	✕	✕	Part
Forsyth Barr Stadium	✕	✕	✕	✔
Emerson's Brewery	✕	✕	✕	✔
Note: Part service = Destination within 100m of route				

Performance against study objectives

Each option was assessed against the study objectives on a four-point scale. A dash indicates a negligible contribution, a tick indicates a minor contribution, two ticks indicate a moderate contribution and three ticks indicate a significant contribution. A summary of the scores for each option is displayed in the table below alongside the costs of each option (based on the operating parameters agreed at the workshop).

Objective	Option 1	Option 2	Option 3	Option 4
1 – Mitigation for restricted vehicle and reduced bus access on George Street.	✓	✓✓	✓✓	✓✓✓
2 – Encourage shoppers and visitors to move around the central city and support local businesses	✓✓✓	✓✓✓	✓	✓✓✓
3 – Improve accessibility for people with mobility issues	✓✓✓	✓✓	✓	✓✓✓
4 – Park and Ride function for inner city car parks.	✓	✓	✓	✓✓✓
5 – Service the central city and encourage commuters to use public transport	✓	✓	✓	✓✓
Cost	$910,000	$400,000	$410,000	$1,650,000

Option 1 provides a good level of coverage, serving 11 of the 18 identified important destinations, and passing close to a further two. This option, however, does not perform as well as others when assessed against the objectives as it provides less access to the retail precincts of George Street. This option also has the second longest route length and therefore higher operating costs than Options 2 and 3.

Option 2 also provides a good level of coverage, albeit not quite as extensive as Option 1, serving 10 of the 18 identified important destinations. This option performs relatively well against the objectives, providing good connectivity to key retail precincts, including George Street. Option 2 has the shortest route length of all the options and has the lowest operating costs.

Option 3 provides limited coverage of the key destinations, serving only five of them directly and passing close to a further one. Similarly, this option does not perform well against the objectives due to its poor connectivity to key retail precincts and attractions. This option has a short route length and costs less to operate than Options 1 and 4.

Option 4 provides the greatest level of coverage of all options, directly serving 15 of the 18 identified important destinations, and passing close by to the remaining three. Option 4 is also the best

performer in terms of meeting the objectives due to its extended coverage and increased potential for park and ride from edge-of-city car parks and it's potential to link some suburbs with key central city destinations. Option 4's route length is over twice the length of Options 2 and 3. The operating cost of this option is considerably greater than that of the other options.

Potential cost implications

Based on the current Dunedin fare structure, an average fare payable of $1.80 per single zone trip can be assumed[1]. High, Medium and Low patronage scenarios have been developed, based on the existing average number of passengers per trip on services serving Dunedin City (currently around 2.64 passengers per trip).

Using the medium patronage scenario and the average single zone fare of $1.80, the following table provides an indication of the funding gap (subsidy requirement) to operate the service.

Option	Cost	Potential Revenue	Potential Funding Gap
Option 1 Figure 8	$910,000	$330,000	$580,000
Option 2 North loop	$400,000	$160,000	$240,000
Option 3 South loop	$410,000	$160,000	$250,000
Option 4 Maximum Coverage	$1,650,000	$490,000	$1,160,000

For the service to operate on a fully commercial basis (based on an average fare of $1.80), it would need to attract patronage of between six and nine passengers per trip. This is highly ambitious given the current network average of 2.64 passengers per trip.

The likelihood of attracting NZ Transport Agency funding for the bus loop has been considered. A service of this nature falls short on meeting funding strategic criteria such as inducing significant mode shift, congestion relief or filling a significant network gap. It also has a low economic efficiency (BCR) so it is unlikely to be able to access government funding.

Risk

The key risks of implementing an inner city bus loop service in Dunedin and potential mitigation strategies are related to passenger demand, operational risks including service disruption due to congestion and construction-related road closures, and cost and legislative risks relating to procurement. A concise summary of these risks and potential mitigation strategies is included in the following table.

Category	Risk	Explanation	Mitigation
Demand risks	Uncertainty in demand	The service would perform a unique function and it is not possible to accurately forecast demand.	Operating the service on a trial basis during peak and quiet months.
Operational risks	Congestion	The service will be susceptible to daily peak time congestion.	Timetabling the service for every 10-12 minutes will mean passengers are unlikely to be concerned if there is a slight delay.

[1] This figure considers the existing proportional make up of fares received in Dunedin i.e. cash, Go card, Adult / Child and concession.

	Transformational context	The service is highly likely to be impacted by road closures with planned construction, potentially impacting patronage.	Well-planned communication strategies using multiple channels.
Cost and legislative risks	Cost	New regulations may significantly increase costs. Operator interest leading to uncompetitive procurement.	Market sounding exercise to determine level of interest and inform contingency funding.
	Legislative	Public Transport Operating Model preventing new services that could abstract patronage.	Undertake trial service to record any patronage abstraction. Results will determine how to progress.

Case studies

Case studies of similar inner city bus loops in Christchurch, Hamilton and Invercargill have been undertaken to identify key lessons learned. In each case, the services were successful in generating high patronage levels. Much of this success has been attributed to the services being free of charge to the user, however there has been a downside of providing the services free of charge with Hamilton experiencing some antisocial behaviour and negative perceptions from some members of the public who believe the service is being exploited by those who are not positively contributing to society. These two particular issues should be given careful consideration in post Covid-19 Dunedin where public spending will come under increased scrutiny and the current (temporary) free fares policy for public transport has led to a reported increase in homeless people using the bus for the purpose of seeking warmth / comfort / entertainment.

Each service was said to improve access for the elderly and disabled and were popular among students. The Christchurch Shuttle addressed issues of fragmentation in the city. The Hamilton Shuttle complimented a new parking building aimed at reducing cars in the central city. The Invercargill service was said to increase liveliness and visitation to facilities such as the library.

1.0 Introduction

1.1 Scope

Otago Regional Council (ORC) and Dunedin City Council (DCC) have commissioned AECOM to undertake a study to investigate the feasibility of an inner city bus loop for Dunedin. The scope for this investigation includes the following:

- route development, frequency and operating hours
- costs, patronage requirements and revenue
- engagement with the NZ Transport Agency to understand funding criteria
- transformational context
- case studies

The feasibility study is joint funded by DCC and ORC and the development of this study has been steered by both organisations.

1.2 Objectives

The objective of the study is to investigate a bus loop option to connect key destinations within Dunedin's central city to:

- help encourage shoppers and visitors to move around the central city and support local businesses
- improve accessibility for people with mobility issues
- provide a mitigation for restricted vehicle and reduced bus access on George Street in the future
- service the central city and encourage commuters to use public transport rather than private vehicles
- provide a park and ride option for inner city car parks

Options for the bus loop have been developed with these objectives in mind and the potential feasibility and/or performance of the bus loop will be assessed against these objectives.

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2.0 Stage one - Route development and operating parameters

2.1 Introduction

This section covers stage one of the scope and details the process undertaken to develop route options and define operating parameters for a Dunedin inner city bus loop.

2.2 Route development process

AECOM undertook an initial scoping exercise to identify potential destinations and patronage generators for the bus loop to serve. These included key retail precincts and visitor attractions, as well as major car parking buildings and other trip generators such as hotels; tourist and student accommodation; Otago University and Polytechnic and the existing hospital.

A map of these potential destinations initially identified is shown in Figure 1.

Figure 1 All potential destinations

Refining potential destinations

Destinations were discussed at a workshop held in Dunedin with DCC and ORC officers on Tuesday 11 February 2020. From this the key destinations of importance were determined to be:

- The Bus Hub – to integrate the loop into the public transport network;
- The Octagon, Art Gallery, Settlers Museum and Otago Museum – as key visitor attractions;
- Meridian Shopping Centre, the hospital, the university and polytechnic as key trip generators; and
- The Library – to address issues raised regarding Library accessibility following changes made to the existing public transport network to accommodate the bus hub in early 2019.

In addition, the workshop attendees identified several other potential destinations, which were then discounted as they were not considered to be of enough importance to be key parameters for route design. These included:

- University / Polytechnic student residences – As the objectives for the service focus on shoppers and visitors it was agreed that the location of student residences was of less importance than other destinations.
- Knox and First Churches, Olveston Historic Home – The attraction of these destinations were considered secondary to others.
- Hotels – It was agreed that the bus loop should focus on serving key destinations and that it would be reasonable to expect people to walk a block or two from their accommodation to access the loop service.
- Farmers Market – The farmers market is only open on Saturdays.
- Chinese Gardens – The Chinese Gardens were less of an attraction than the nearby Settlers Museum and Queens Gardens. It was agreed that by serving the latter two destinations, access would also be provided to the Chinese Gardens.

Additional destinations such as St Paul's Cathedral, Emerson's and Speights breweries, Moana Pool, Forsyth Barr Stadium and the University of Otago were retained as important destinations for the loop, but not considered to be as important as the primary destinations.

Clustering destinations

Following the removal of the less important destinations from the map, it became clear there was a cluster of important destinations near the Octagon and around the Hanover Street / Frederick Street blocks. The concentration and relative proximity of these destinations makes them a focus for the bus route. These destinations are labelled as the primary cluster in Figure 2.

Destinations such as Otago Museum, the University, Forsyth Barr Stadium, Emerson's Brewery and Moana pool were identified as being outliers from this cluster and are classed as the "secondary cluster" in Figure 2.

It was agreed that the route development process would focus on the primary cluster, with options to also serve the secondary cluster destinations.

Figure 2 Primary and secondary cluster destinations

2.3 Options development

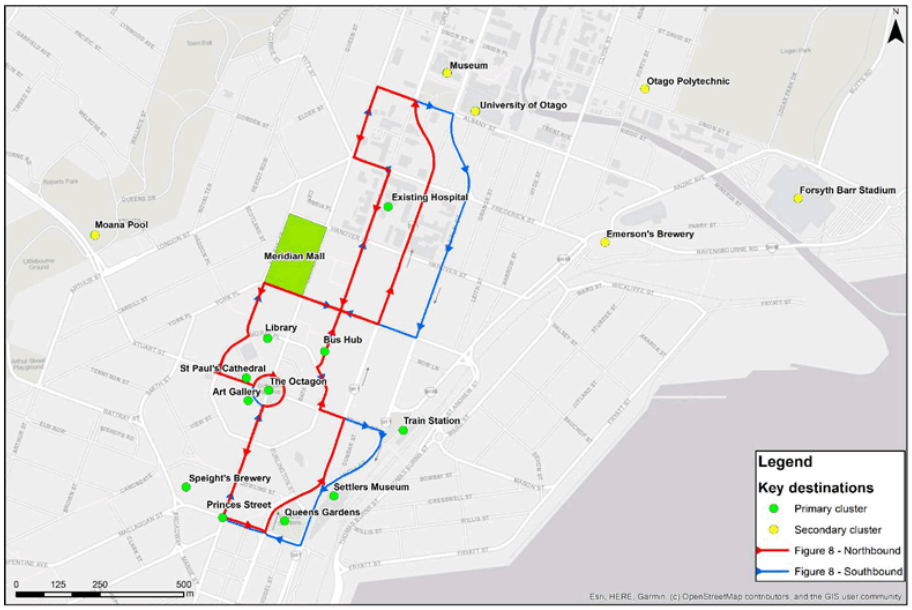
During the workshop attendees from ORC and DCC worked together to develop four potential inner city bus loop route options to assess. These route options are discussed in greater detail in the following sections.

It should be noted that, while routes have been specified to inform this study, they can be flexible in their implementation. Costs are primarily affected by journey time and trip distance. In many cases, however, a route can be moved from one block to another, for example to avoid a road closure, with a negligible effect on operating costs. As such, the options developed should be treated as indicative of what can be achieved for what cost.

2.3.1 Option 1 – Figure 8 loop

Figure 3 displays the first inner city bus loop option, a figure 8 loop. As shown, the route can operate in both directions with the red line depicting the northbound loop and the blue line representing the southbound route based around the one way street pairs.

Figure 3 Figure 8 loop



Option 1 route description and destinations served

For the northbound loop, starting from the Bus Hub, travel north up the Cumberland Street one-way system to Albany Street. Turn left and loop back south down George Street to Frederick Street. Turn left onto Frederick Street and then continue south on Great King Street. At St Andrew Street, turn right and move west to Filleul Street and then south again to Moray Place. Turn right on Moray place and then left onto Stuart Street and travel towards the Octagon. Move around the Octagon and then south to Princes Street. At Princes Street, travel north again via Queens Gardens to the Bus Hub.

The southbound loop operates in reverse, following the same route with the exception of travelling south on the Castle Street one-way system.

Table 1 provides a summary of destinations served by the northbound and southbound Figure 8 loops.

Table 1 Destinations served by Figure 8 loop

	Destinations served	
Destinations	**Northbound**	**Southbound**
Bus Hub	✔	✔
Train Station	✘	✔
Settlers Museum	✘	✔
Queens Garden	✔	✔
Princes Street	✔	✔
Speight's Brewery	✘	✘
Moana Pool	✘	✘
Art Galley	Partially	✔

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St Paul's Cathedral	✔	✔
Octagon	✔	✔
Library	Partially	Partially
Meridian Mall	✔	✔
Hospital	✔	✔
Otago Museum	Partially	Partially
University of Otago	✘	✔
Otago Polytechnic	✘	✘
Forsyth Barr Stadium	✘	✘
Emerson's Brewery	✘	✘
Note: Part service = Destination within 100m of route		

Option 1 characteristics

This is a large route option providing service to all primary destinations. This option also extends near to the University and Otago Museum, increasing the likelihood of student and visitor ridership. Moana pool and Forsyth Barr stadium are not served. It is also possible to think of the figure 8 shape of Option 1 as two separate, smaller northern and southern loops. This creates the opportunity to increase the frequency of coverage to these areas to the north and south, however this is likely to increase cost.

Option 1 additional considerations

- **Distance** – The northbound loop is 4km, the southbound loop is 4.3km – a total of 8.3km
- **Direction** – Given the Figure 8 shape, this option could be run in a single direction with an interchange at the centre. This would reduce operational costs but may not be desirable for passengers.

2.3.1.1 Option 1 performance against objectives

Table 2 displays an objectives achievement matrix, ranking the Figure 8 loop against the five objectives. For this, and the following options, rankings are based on a 4-point scale where a dash indicates a negligible impact, one tick is a mildly positive impact, two ticks is a moderately positive impact and three ticks is a significantly positive impact.

Table 2 Objectives achievement matrix for Option 1

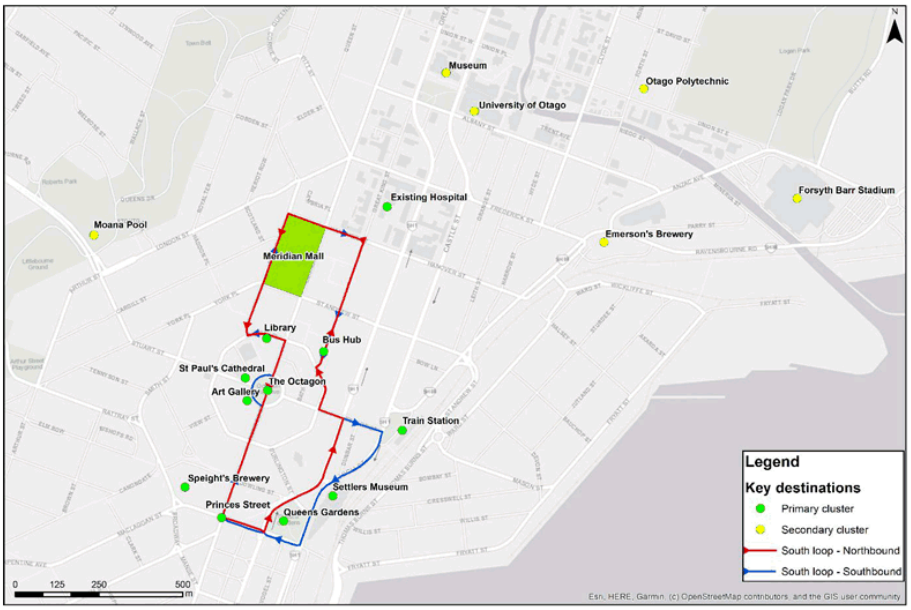
Objective	Potential Impact	Reasoning
Provide a mitigation for restricted vehicle and reduced bus access on George Street in the future.	✓	Option 1 crosses George Street at the St Andrew Street intersection and includes the "Knox" block of George Street between Frederick Street and Albany Street. The option provides good access to George Street, but not direct access to areas where bus services will be removed.
Encourage shoppers and visitors to move around the central city and support local businesses	✓✓✓	Option 1 would provide frequent access to all primary cluster destinations, including areas of the central city with significant business activity. It also brings users close to two of the secondary cluster destinations.

Improve accessibility for people with mobility issues	✓✓✓	Option 1 would provide frequent and convenient access to all primary cluster destination and covers a large enough distance to be valuable for those with mobility issues.
Provide a park and ride option for inner city car parks.	✓	Option 1 passes by the Great King Street parking building and within 100m of the Lower Moray Place car park and Meridian car park, making it potentially appealing as a park and ride option. However, given the minimal distances between these car parks and the primary cluster destinations most potential users are more likely to walk than wait for a bus.
Service the central city and encourage commuters to use public transport rather than private vehicles.	✓	Option 1 services all primary cluster and some secondary cluster destinations and improves connectivity within the central city. The increased connectivity may increase the appeal of public transport use for some suburban residents. As almost all the existing bus routes are through-routed, it is likely that most potential public transport users will already be able to travel close to their destination without having to change services therefore the additional appeal of the bus loop is likely to be very minor.

2.3.2 Option 2 – South loop

Option 2 is displayed in Figure 4 and is a smaller loop servicing an area further south and primary destinations surrounding the immediate central city. The northbound loop is depicted by the red line while the southbound is depicted by the blue.

Figure 4South loop



2.3.2.1 Option 2 route description and destinations served

For the northbound loop, beginning at the Bus Hub, travel north to Hanover Street, turn left and travel west to Filleul Street. Turn left onto Filleul Street and continue to Moray Place. At Moray Place, turn left and move east and then turn right onto George Street. Continue south down George Street, through the Octagon to Princes Street. Turn left at Rattray Street and travel back north to the Bus Hub via Queens Gardens.

The southbound loop operates in reverse, following the same route except for travelling south on the Castle Street one-way system.

A summary of destinations serviced by the northbound and southbound South loop can be found in Table 3.

Table 3 Destinations served by South loop

	Destinations served	
Destinations	**Northbound**	**Southbound**
Bus Hub	✔	✔
Train Station	✘	✔
Settlers Museum	✘	✔
Queens Garden	✔	✔
Princes Street	✔	✔
Speight's Brewery	✘	✘
Moana Pool	✘	✘
Art Galley	Partially	✔

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St Paul's Cathedral	Partially	✔
Octagon	✔	✔
Library	✔	✔
Meridian Mall	✔	✔
Hospital	✘	✘
Otago Museum	✘	✘
University of Otago	✘	✘
Otago Polytechnic	✘	✘
Forsyth Barr Stadium	✘	✘
Emerson's Brewery	✘	✘
Note: Part service = Destination within 100m of route		

2.3.2.2 Option 2 characteristics

Option 2 is a smaller route option, serving an area to the south and immediately surrounding the Octagon. Most primary destinations are located within this area, making this a cost-effective route for frequent access to a selection of important destinations within the central city.

2.3.2.3 Option 2 additional considerations

- **Distance –** The northbound loop is 2.5km, the southbound loop is 2.8km – a total of 5.3km.

2.3.2.4 Option 2 Performance against objectives

Table 4 displays an objectives achievement matrix for the South loop.

Table 4 Objectives achievement matrix for Option 2

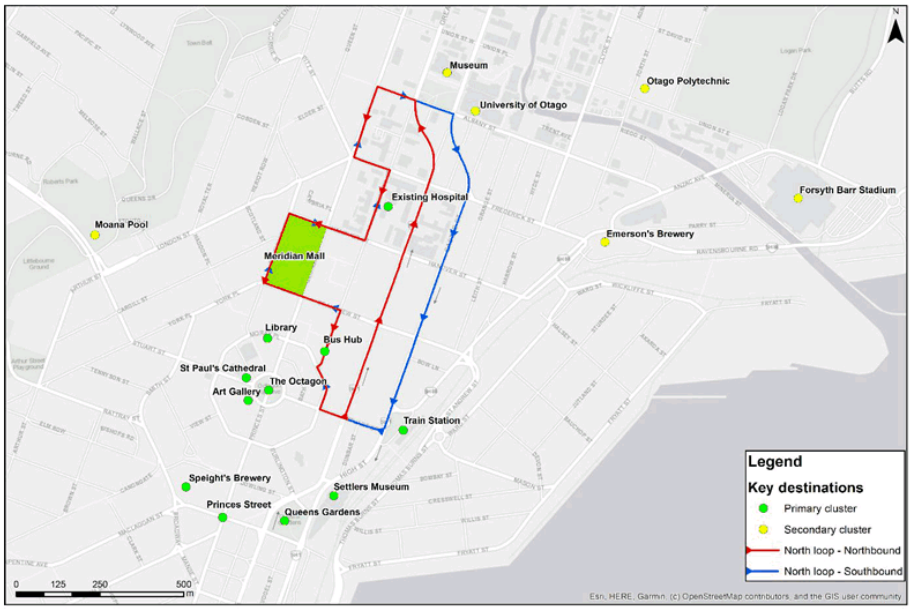
Objective	Potential Impact	Reasoning
Provide a mitigation for restricted vehicle and reduced bus access on George Street in the future.	✓✓	Option 2 crosses George Street at the Hanover Street intersection and includes the section of George Street between Moray Place and the Octagon, providing direct access to an area where bus services have been removed as part of the introduction of the Bus Hub.
Encourage shoppers and visitors to move around the central city and support local businesses	✓✓✓	Option 2 would provide frequent service to most primary cluster destinations in areas around the central city with significant business activity.
Improve accessibility for people with mobility issues.	✓✓	Option 2 would provide frequent service to most primary destinations. The comparatively small distance covered, however, results in more limited accessibility for those with mobility issues.
Provide a park and ride option for inner city car parks.	✓	Option 2 has the potential to serve the Great King Street parking building, the Meridian car park and passes within 100m of the Lower Moray Place carpark, making it potentially appealing as a park and ride option. However, given the minimal distances between these car parks and the primary cluster destinations most potential users are more likely to walk than wait for a bus.

Service the central city and encourage commuters to use public transport rather than private vehicles.	✓	Option 2 services most primary cluster destinations and improves connectivity within the central city. The increased connectivity may increase the appeal of existing public transport use for some suburban residents. As almost all the existing bus routes are through-routed, it is likely that most potential public transport users will already be able to travel close to their destination without having to change services therefore the additional appeal of the bus loop is likely to be very minor.

2.3.3 Option 3 – North loop

Option 3 is a North loop shown in Figure 5. This loop operates further north than Option 2 and services some secondary cluster destinations. The northbound direction is depicted by the red line while the southbound is blue.

Figure 5 North loop



2.3.3.1 Option 3 route description and destinations served

For the northbound loop, starting at the Bus Hub, travel south down Great King Street to Moray Place, and loop back north via Stuart Street along the Cumberland Street one-way system. Turn left into Albany Street and travel south again down George Street, along Frederick Street and down Great King Street. Turn right at Hanover Street, and continue to Filleul Street. Travel South down Filleul Street and return to the Bus Hub via St Andrew Street.

The southbound loop operates in reverse, following the same route except for travelling south on the Castle Street one-way system.

A summary of destinations served by the northbound and southbound North loop can be found in Table 5.

Table 5 Destinations served by North loop

Destinations	Destinations served	
	Northbound	Southbound
Bus Hub	✔	✔
Train Station	✘	✔
Settlers Museum	✘	✘
Queens Garden	✘	✘
Princes Street	✘	✘
Speight's Brewery	✘	✘
Moana Pool	✘	✘
Art Galley	✘	✘
St Paul's Cathedral	✘	✘
Octagon	✘	✘
Library	✘	✘
Meridian Mall	✔	✔
Hospital	✔	✔
Otago Museum	Partially	Partially
University of Otago	✘	✔
Otago Polytechnic	✘	✘
Forsyth Barr Stadium	✘	✘
Emerson's Brewery	✘	✘
Note: Part service = Destination within 100m of route		

2.3.3.2 Option 3 characteristics

This is another smaller route option serving an area to the north of the Octagon. Although only covering four primary destinations, the route extends north to the Otago Museum and University of Otago. The smaller size of this loop also allows for cost effective and frequent access from the university to the central city.

2.3.3.3 Option 3 additional considerations

- **Distance –** The northbound loop is 2.8km, the southbound loop is 3km - a total of 5.8kms.

2.3.3.4 Option 3 performance against objectives

Table 6 displays an objectives achievement matrix for the North loop.

Table 6 Objectives achievement matrix for Option 3

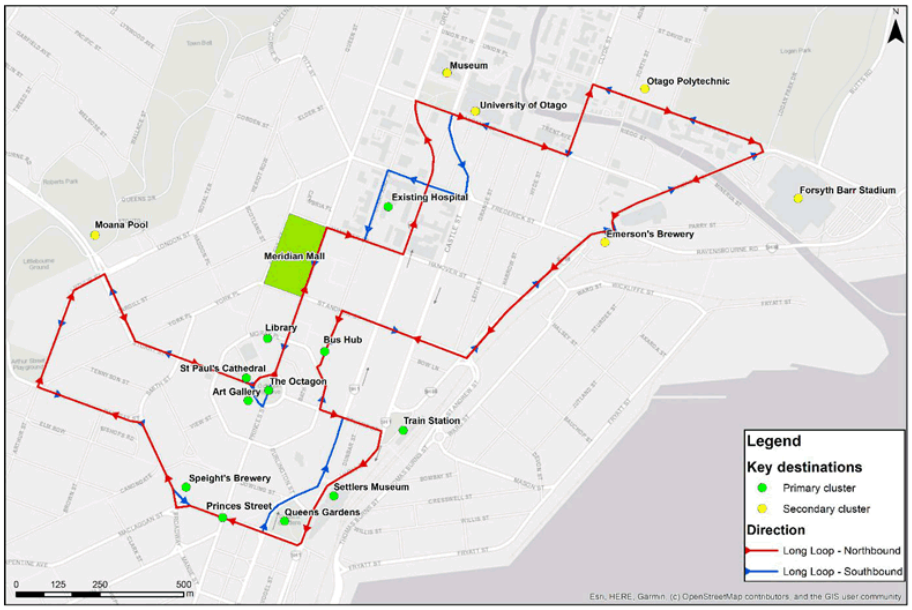
Objective	Potential Impact	Reasoning
Provide a mitigation for restricted vehicle and reduced bus access on	✓✓	Option 3 crosses George Street at the Hanover Street and St Andrew Street intersections and includes the "Knox" block of George Street between Frederick Street and

George Street in the future.		Albany Street, providing good access to George Street, but not providing direct access to areas where bus services will be removed.
Encourage shoppers and visitors to move around the central city and support local businesses	✓	Option 3 serves far fewer destinations than the other options and provides lesser access to areas of the city that would attract shoppers and visitors than the other options.
Improve accessibility for people with mobility issues.	✓	Option 3 serves far fewer destinations than other options and provides a smaller coverage resulting in limited accessibility for those with mobility issues.
Provide a park and ride option for inner city car parks.	✓	Option 3 has the potential to serve the Great King Street parking building, the Meridian car park and passes and within 100m of the Lower Moray Place carpark, making it potentially appealing as a park and ride option. However, given the minimal distances between these car parks and the primary cluster destinations the majority of potential users are more likely to walk than wait for a bus.
Service the central city and encourage commuters to use public transport rather than private vehicles.	✓	Option 3 provides service to a small number of primary and secondary cluster destinations and improves connectivity within the central city. The increased connectivity may increase the appeal of existing public transport use for some suburban residents. As almost all the existing bus routes are through-routed, it is likely that most potential public transport users will already be able to travel close to their destination without having to change services therefore the additional appeal of the bus loop is likely to be very minor.

2.3.4 Option 4 – Maximum coverage

The final inner city bus loop option is an extensive loop providing comprehensive coverage throughout the inner city, as shown in Figure 6. The northbound loop is indicated as a red line, while the southbound loop is blue.

Figure 6 Maximum coverage



2.3.4.1 Option 4 route description and destinations served

Option 4 provides significantly greater coverage than previous options, servicing all primary and secondary destinations. For the northbound loop, start at the Bus Hub and travel south to Moray Place. Turn right onto Stuart Street and travel along to the Castle Street southbound one-way system. Move down the one-way system, turn right onto Rattray Street and continue past Princes Street, to Arthur Street. Turn right onto Arthur Street and travel up to London Street. Turn right onto Stuart Street and move east to the Octagon and then turn left and travel north along George Street. Turn right on Hanover Street and then left to travel along the northbound Cumberland Street one-way system. At Albany Street, turn right and travel east to Clyde Street. Turn left onto Clyde Street and then right onto Union Street East. Continue along Union Street out to Forsyth Barr Stadium and turn right onto Anzac Avenue travelling southbound. Turn right onto St Andrew Street and complete the loop by returning to the Bus Hub.

The southbound loop operates in reverse, following the same route except for travelling south on the northern section of the Castle Street one-way system and north on the southern section of the Cumberland Street one-way system.

A summary of destinations serviced by the northbound and southbound long loop can be found in Table 7.

Table 7 Destinations served by Long loop

	Destinations served	
Destinations	Northbound	Southbound
Bus Hub	✔	✔
Train Station	✔	✘
Settlers Museum	✔	✘
Queens Garden	✔	✔

Princes Street	✔	✔
Speight's Brewery	✔	✔
Moana Pool	✔	✔
Art Galley	Partially	✔
St Paul's Cathedral	✔	✔
Octagon	✔	✔
Library	Partially	Partially
Meridian Mall	✔	✔
Hospital	✘	✔
Otago Museum	Partially	Partially
University of Otago	✔	✔
Otago Polytechnic	Partially	Partially
Forsyth Barr Stadium	✔	✔
Emerson's Brewery	✔	✔
Note: Part service = Destination within 100m of route		

2.3.4.2 Option 4 characteristics

This is the longest of the route options and covers all primary and secondary destinations, including Moana Pool and Forsyth Barr Stadium, therefore potentially appealing to the largest group of riders. The length of this loop however, does increase operating costs.

2.3.4.3 Option 4 additional considerations

- **Distance** – The northbound loop is 7.0km, the southbound loop is 6.9km – a total of 13.9kms.

2.3.4.4 Option 4 performance against objectives

Table 8 displays an objectives achievement matrix for the Maximum coverage loop.

Table 8 Objectives achievement matrix for Option 4

Objective	Potential Impact	Reasoning
Provide a mitigation for restricted vehicle and reduced bus access on George Street in the future.	✓✓✓	Option 4 traverses George Street providing direct access along its length.
Encourage shoppers and visitors to move around the central city and support local businesses	✓✓✓	Option 4 serves all primary and secondary destination, including areas of high business activity.
Improve accessibility for people with mobility issues.	✓✓✓	Option 4 serves all primary and secondary destination and provides the greatest area of coverage, offering significant accessibility improvements for those with mobility issues.

Provide a park and ride option for inner city car parks.	✓✓✓	Option 4 has the potential to serve several prominent car parking buildings within the central city alongside extensive edge of city parking facilities. The ability of this service to connect the edge of city parking facilities with the central city is likely to make it appealing as a park and ride service.
Service the central city and encourage commuters to use public transport rather than private vehicles.	✓✓	The wider coverage provided by Option 4 increases linkages between some residential areas and the central city and may encourage some commuters to use public transport rather than private vehicles, albeit the impact of this is likely to be limited as many of the residential areas are already served by existing public transport. This option also improves connectivity within the central city which may increase the appeal of existing public transport use for some suburban residents. As almost all the existing bus routes are through-routed, it is likely that most potential public transport users will already be able to travel close to their destination without having to change services therefore the additional appeal of the bus loop is likely to be very minor.

2.4 Operating parameters

ORC and DCC agreed on the following operating parameters for a new inner city bus loop:

- Buses will run eight hours per day between 09:30 and 17:30
- Routes will have buses running in both directions
  Buses will run at around a 10-minute frequency.

A 10-12 minute frequency is commonly recognised to be the threshold at which passengers deem a service to be frequent enough to arrive at a stop independent of a timetable[2]. This means passengers do not need to pre-plan their journeys and adherence to a schedule is less important. Typically, services operating at these frequencies will not be timetabled i.e. they will be advertised as "every 10 minutes" rather than have specific timing points.

The agreed parameters will be used to determine the costs of the service and allow for comparison between routes.

2.5 Bus stop requirements

Figure 7 displays a map of the inner city primary and secondary destinations along with existing bus stops in the area. Bus stops are depicted with red triangles.

[2] White, P (2017), Public Transport: Its Planning, Management and Operation.

Figure 7 Inner city bus stops

Based on Figure 7, it can be noted that several key destinations have the potential to be served by existing bus stops. There are however, evident gaps that will need to be addressed to improve service to some destinations, namely areas in and around the Octagon and George Street following planned future development.

Table 9 displays a summary of potential additional bus stops needed to serve each loop option.

Table 9 Bus stop requirements

Options	Location	Explanation
Option 1, 2, 3	Meridian Mall	Stops needed at side entrances of the Meridian Mall on St Andrew and Hanover Street.
Option 1, 2, 4	Library	One stop necessary on Moray Place to service the Library.
Option 1, 2, 4	Octagon	There are currently no stops in or around the Octagon. A stop here would allow access to the Art Gallery, St Paul's cathedral and a range of other destinations in the central city.
Option 1, 2, 4	Southbound one-way system	Stops are needed along the Castle Street southbound one-way system between Stuart Street and Queens Gardens allowing access to the Train Station, Settlers Museum and Queens Garden.
Option 4	Speight's Brewery	There are no stops for around 1km between Princes Street and Moana Pool along Rattray and Arthur Street. A stop along this stretch would break this distance and improve access to the Speight's Brewery.
Option 4	SH88/Anzac Avenue	There are no stops for around 1.8km from Forsyth Barr Stadium to the Bus Hub. Breaking up this distance with stops would align with Policy 18 of the Otago Regional

		Public Transport Plan, which states desirable spacing is between 300m and 400m and no more than 500m (ORC, 2014). Therefore, approximately three stops would be desirable.

3.0 Gaps in the existing bus network

3.1 Existing bus network

Figure 8 displays a map of the existing bus network (amended to reflect the future state with buses removed from much of George Street) within the study area, with primary and secondary cluster destinations highlighted.

Figure 8 Existing Dunedin bus network (amended to reflect the future state with buses removed from much of George Street)

3.2 Network Integration

How would a loop service integrate into the existing network?

The existing Dunedin bus network consists of 16 bus routes that serve the central city. The network is designed to link the residential suburbs to the central city and routes typically travel from outer areas, converge at the Bus Hub and then continue to outer suburbs.

Each of the loop options have been designed to serve the bus hub to maximise interchange opportunities for public transport users, allowing the bus loop to complement the existing public transport network and provide last mile connectivity to key destinations.

The ability for the bus loop to be allocated a stop within the bus hub may be dependent upon its frequency. The majority of bus routes within Dunedin operate on either 15, 30 or 60 minute frequencies which means that they have regular stopping patterners within the bus hub. If the bus loop is operated with a different stopping pattern (such as a 10 minute frequency) it will not be able to

share the same stop throughout the day as a bus on, for example, a 15 minute frequency as there will inevitably be times when both buses require to occupy the stop at the same time. A bus loop operating on a frequency of less than 15 minutes may have to be accommodated outside the bus hub, in Moray Place where additional stops would be required. This would present a physiological barrier to interchange, resulting in the service being less well integrated with the existing network.

The operating model for the loop service will also influence its integration into the network. If the service is operated as part of the existing public transport network, the use of the same ticketing system will enable passengers to transfer seamlessly between services. Consistent branding and route / timetable information sources will also be required to ensure the service is well integrated into the network.

A different operating model may result in need for a different fare and/or ticketing system, different branding and different sources for service information. This will reduce the extent to which the service is integrated into the network.

Could the same outcomes be achieved through alterations to the existing network?

As displayed in Figure 8, the existing network (amended to reflect the future state with buses removed from much of George Street) does not directly serve the following primary and secondary cluster destinations:

- The Octagon
- The Library
- The Art Gallery
- Emerson's Brewery

Existing bus routes typically pass through the city centre on a north-south or east-west axis with each individual route serving a handful of the primary or secondary cluster destinations. There are numerous opportunities to implement minor alterations to the existing routes to service these destinations, however there is no existing route which could be easily amended to provide the level of connectivity between primary and secondary cluster destinations envisaged for the loop service.

While existing routes could be amended to ensure that all the identified destinations are served, an individual is likely to have to take at least two buses to move between different destinations in the central city, such as the Settlers Museum and Meridian Mall. Transferring can be perceived as inconvenient, frustrating and time consuming; negatively impacting on attractiveness and patronage uptake.

As most existing bus routes are through-routed, it would not be possible for them to loop around the city centre without substantially increasing journey times for existing passengers travelling from one side of the city to the other. There are however several existing routes which terminate in the city centre and could potentially be used to loop through the centre, serving multiple destinations without increasing journey times for existing passengers. Of these, only service 61 (Kenmure – City) has enough layover time to make this a viable option, without increasing the number of vehicles required to deliver the service.[3] This service only operates at a half-hourly frequency and would provide a poor level of service for the bus loop.

The proposed loop service essentially performs a different function to that of the existing public transport network. The loop service would provide a frequent, fast connection between city centre destinations, rather than serving suburban areas. While existing routes could be amended to serve all identified city centre destinations, they would not provide the same level of connectivity or frequency as a potential standalone central city bus loop service.

[3] Service 1 (Palmerston – City) also has sufficient layover time, but this service only operates 3 times per day and is therefore not suited to providing the level of service envisaged for the bus loop.

4.0 Cost, patronage and fares

4.1 Operating costs

Operating cost scenarios have been developed based on the following operating parameters agreed by DCC and ORC:

- Hours of operation 8 hours a day, 7 days a week, 359 days a year
- Average travel speed in urban environment of 18 kph
- All route options will run in both directions, except for option 1 where there is an opportunity to run either a figure eight loop or two separate loops.

The in-service time, distance and peak vehicle cost values used have been developed from a recent review exercise but due to their commercially sensitive nature, cannot be stated. They are however recent and relevant and deemed appropriate for use for the relative comparison of options in this study. In practice, the costs of this service will be affected by specific contract terms and conditions and external factors such as market capacity and competition.

The estimated operating cost for the loop service options operating at a 10 minute frequency are detailed in Table 10.

Table 10 Operating parameters and costs

Option	Number of Buses Required	Estimated Annual Cost
Option 1 Figure 8 Northbound	2	$450,000
Option 1 Figure 8 Southbound	2	$460,000
Option 1 Bi directional Figure 8	4	$910,000
Option 2 South loop	2	$400,000
Option 3 North loop	2	$410,000
Option 4 Maximum coverage	6	$1,650,000

Due to the variation in route lengths, a 10 minute frequency is not cost-effective for all options. An optimisation exercise was undertaken to determine the optimal frequency for each route option to maximise vehicle efficiency. The results are shown below in Table 11.

Table 11 Optimised operating parameters and costs

Option	Service Frequency (minutes)	Number of Buses Required	Estimated Annual Cost
Option 1 Figure 8 Northbound	15	1	$200,000
Option 1 Figure 8 Southbound	15	1	$200,000
Option 1 Bi directional Figure 8	15	2	$410,000
Option 2 South loop	10	2	$400.000
Option 3 North loop	12	2	$390,000
Option 4 Maximum coverage	13	4	$1,100,000

Option 1 has an estimated journey time of approximately 13-14 minutes per loop. Operating at a 10 minute frequency would result in a six to seven minute wait per bus after completing each loop; meaning each vehicle and driver would be inactive for around a third of the time. Operating a 15 minute frequency would reduce the number of vehicles required (from four to two), increase vehicle

utilisation and therefore reduce cost. Operating a 15 minute frequency would, however, increase wait times for passengers, potentially making the service less attractive.

A 10 minute frequency is optimal for option 2 with an estimated journey time of approximately eight to nine minutes per loop. While delays may occur during peak times, these are likely to be minor and timetabling will be unnecessary due to the high frequency.

The estimated journey time of option 3 is approximately nine to ten minutes. Given the slightly increased journey time compared with option 2, delays are more likely to occur when operated at a 10 minute frequency. A 12 minute frequency is considered to be optimal to reduce delays and cut costs, however there would also be opportunity to run and advertise this service at a 10 minute frequency and acknowledge that there will be periods of the day where it may run late, but still within the level of service to run without a timetable.

Option 4 has an estimated journey time of approximately 23 minutes, creating a seven minute period of inactivity every 30 minutes if run at a 10 minute frequency. Under these conditions, each vehicle and driver would be inactive for around a quarter of the time. There is an option to decrease the frequency to 13 minutes to increase vehicle utilisation, however this would affect the legibility and attractiveness of the service and is therefore not recommended.

If option 4 is to be pursued in greater detail, the cost effectiveness of the operation could be improved by reducing coverage to avoid servicing either Moana Pool or the Stadium. This would reduce journey time and the number of vehicles required to operate at a high frequency.

4.1.1 Key assumptions

Costs estimates have been developed through the application of cost values per in-service kilometre, in-service driver hour and peak bus requirement. These values have been derived from a review of recent relevant contracts. Cost estimates may be affected by external factors such as recent house price increases which can affect the ability of operators to recruit drivers. There is a risk that tender costs could be greater than the estimates provided within this report.

Costs are based on the use of a standard single-deck diesel bus. The costs for more specialist vehicles such as electric buses are likely to be greater, albeit there may be limited cost savings associated with the use of smaller vehicles.

The estimated costs do not include any additional costs associated with recent changes to the Employment Amendment Act 2018 (ERAA). The changes to the Act are likely to impact on driver rest breaks requirements and may increase bus operating costs. Details around compliance with the Act are being negotiated between employers and trade unions and the full impact of the changes in the Otago region are not yet certain.

Further details and a range of cost options are included in Appendix A.

4.2 Fares and patronage

4.2.1 Fares

The current Dunedin bus fare structure uses a range of passenger fare categories as published on ORC's website and shown below in Figure 9.

Figure 9 Current bus fares[4]

	GoCard		
Zones travelled	**Adult**	**Child**	**Tertiary student / other concessions**
1	$1.92	$1.15	$1.72
2	$2.53	$1.52	$2.28
3	$4.44	$2.66	$4.00
4	$7.58	$4.55	$6.82
5	$11.41	$6.85	$10.27

	Cash	
Zones travelled	**Adult**	**Child**
1	$2.60	$1.60
2	$3.40	$2.10
3	$6.00	$3.60
4	$10.20	$6.10
5	$15.30	$9.20

Table 12 details the current breakdown of single zone fares paid on the existing Dunedin network. Based on the existing fare structure and the existing breakdown of fare types, it was determined that the current average fare paid per passenger is $1.80. Note, this value would be further reduced if passengers accessed the service using the existing free-transfer mechanism.

Table 12 Current fare type distribution

Fare type	Fare	Portion of total fare types
Adult Go Card	$1.92	44%
Child Go Card	$1.15	18%
Concession Go Card	$1.72	25%
Adult Cash	$2.60	11%
Child Cash	$1.60	2%

Using average passengers per trip at the average fare gives an indication of likely fare revenue scenarios to be considered as part of this study.

4.2.2 Patronage

In order to think about realistic patronage scenarios for a central city bus loop, a summary of average passengers per trip across existing services was obtained from ORC. This data shows that across all services (except those procured under unit 5) the number of passengers per trip ranges from 1.5 to 3.45 passengers per trip. On existing services, the average number of passengers per trip is greater

[4] https://www.orc.govt.nz/public-transport/dunedin-buses/fares-and-gocard

on weekdays than at the weekend. The current Monday to Sunday average passengers per trip is 2.64.

Based on this data, three patronage scenarios were tested to understand likely fare revenue scenarios and funding gaps.

The current average is considered a medium patronage scenario, with values plus and minus 30% considered low and high patronage scenarios. Table 13 summarises fare revenue (based on an average fare of $1.80) under low, medium and high patronage scenarios, along with the funding gap which is expressed as the gap between the operational cost of each option and the fare revenue.

Table 13 Fare revenue, cost recover and service funding gaps

Passengers per trip	Low patronage 1.85 passengers per trip	Medium patronage 2.64 passengers per trip	High patronage 3.44 passengers per trip
Option 1 – Figure 8 Northbound			
Revenue	$114,963	$164,233	$213, 503
Cost recovery	26%	37%	48%
Funding gap	$333,725	$284,455	$235,185
Option 1 – Figure 8 Southbound			
Revenue	$114,963	$164,233	$213, 503
Cost recovery	25%	36%	47%
Funding gap	$344,064	$294,794	$245,524
Option 1 – Figure 8 Bi directional			
Revenue	$229,926	$328,466	$427,006
Cost recovery	25%	36%	47%
Funding gap	$677,789	$579,249	$480,709
Option 2 – South loop			
Revenue	$114,963	$164,233	$213, 503
Cost recovery	29%	41%	53%
Funding gap	$287,198	$237,929	$188,659
Option 3 – North loop			
Revenue	$114,963	$164,233	$213,503
Cost recovery	28%	40%	52%
Funding gap	$295,814	$246,545	$197,275
Option 4 – Maximum coverage			
Revenue	$344,889	$482,699	$640,509
Cost recovery	21%	30%	39%
Funding gap	$1,306,181	$1,158,371	$1,010,562

For a service to be fully commercial, all operating costs of the service must be covered by the fare revenue collected. The cost recovery figures in Table 13 show the percentage of total cost recovered under the different scenarios, and also the value of the funding gap.

Under a low patronage scenario (average number of passengers per trip of 1.85), around 20-29% of operational costs will be covered by fare-paying passengers.

Under a medium patronage scenario (average number of passengers per trip of 2.64), around 30-41% of operational costs will be covered by fare-paying passengers.

Under a high patronage scenario (average number of passengers per trip of 3.44), around 39-53% of operational costs will be covered by fare-paying passengers.

The number of passengers per trip required to run a fully commercial service has been determined for each option in Table 14. Based on an average fare of $1.80 and costs outlined in Section 4.1, the total annual patronage, and number of passengers per trip required to recover the operating costs of each option, is between six and nine passengers per trip.

Table 14 Annual patronage and passengers per trip required

Option	Operating costs	Annual patronage required	Passengers per trip required
Option 1 Figure 8 Northbound	$448,688	248,931	7
Option 1 Figure 8 Southbound	$459,027	254,667	7
Option 1 Bi directional Figure 8	$907,715	503,598	7
Option 2 South loop	$402,162	223,118	6
Option 3 North loop	$410,778	227,898	7
Option 4 Maximum coverage	$1,651,070	916,009	9

4.3 Fare scenarios

Whilst the likely fare structure for this loop service is out of scope for this study, Table 15 outlines the level of fare required to provide 100% cost recovery. Funding partners will need to consider the level of cost recovery that is palatable, but in the absence of this information, full cost recovery has been chosen to be tested as a worst-case scenario.

Table 15 Fare required to achieve 100% cost recovery

	Fare required (100% cost recovery)		
	Low patronage 1.85 passengers per trip	**Medium patronage** 2.64 passengers per trip	**High patronage** 3.44 passengers per trip
Option 1 Figure 8 Northbound	$7.03	$4.92	$3.79
Option 1 Figure 8 Southbound	$7.20	$5.04	$3.88
Option 1 Bi directional Figure 8	$7.12	$4.98	$3.83
Option 2 South loop	$6.31	$4.41	$3.40
Option 3 North loop	$6.44	$4.51	$3.47
Option 4 Maximum coverage	$8.63	$6.04	$4.65

As can be seen in Table 15 the average fare required ranges from $3.40 to $8.63. These figures are high for the distances covered by the bus loop, and well above the fares currently charged for Dunedin bus services.

Public transport services that meet NZ Transport Agency funding criteria and are jointly funded by the agency are traditionally required to achieve 50% farebox recovery[5].

4.4 Waka Kotahi NZ Transport Agency Economic Assessment

To obtain funding from the Waka Kotahi NZ Transport Agency, an economic appraisal in accordance with the Economic Evaluation Manual is usually required. NZ Transport Agency Simplified procedures (SP9) provide a simplified method of appraising the economic efficiency of any new public transport services and associated capital infrastructure that seek National Land Transport Fund (NLTF) funding.

The procedures assume:

- The new service will serve a geographical area that is not currently served by public transport.
- Services will be provided in the peak period, so that commuters change modes from private vehicles to public transport. A peak public transport service is one that passengers can board during the morning and evening commuter peak periods.
- Benefits accrue to public transport and road users. Road user benefits result from road traffic reduction and include travel time savings (including congestion reduction), vehicle operating cost savings, crash cost savings, and environmental benefits (including CO2 reduction). The road traffic reduction benefit values assume that the road corridor has at least one point that operates at greater than 80% capacity during the peak period.
- Most traffic removed from the road network will be light vehicles and will not generate road maintenance, renewal or improvement cost savings.

The proposed central city bus loop would struggle to meet these assumptions as the central city is generally covered by existing services (as shown in Figure 8), and commuters are unlikely to shift from private vehicles to this service in any significant numbers due to the nature of the service which does not support typical commuting patterns i.e. home to work.

It would be difficult to build a strong case that a central city loop would deliver road user benefits from the reduction of road traffic, travel time savings or crash cost savings. It is also considered unlikely that any points on the likely loop route options would exceed 80% capacity across the peak period.

Road reduction benefits are generally limited to peak periods and are critical to the outcome of the evaluation. Without strong road reduction benefits the case for investment and funding from the Transport Agency is weak.

In addition to the road user benefits, transport service user benefits accrue for people using the service. These benefits for users of a new service can be based on the difference between the proposed and the maximum user charge (at which no one would use the service).

In order to test the likelihood of obtaining funding for a central city bus loop, the SP9 template has been populated and a BCR calculated. Where a valid case for claiming road reduction benefits exists, it is calculated based on the average length of the vehicle trip replaced by the public transport service. In the following example of SP9 for the bi-directional figure 8 loop (Option 1), we have assumed the average trip to be half the full length of the loop, indicative of average trips being a return journey.

Public transport user benefits have been calculated based on the proposed user charge being $1.80 (the existing average fare). The maximum amount users are willing to pay for the service is assumed to be $2.60 (the current adult zone 1 cash fare). Annual patronage in year two has been calculated to be 182,232 based on a medium scenario of 2.64 passengers per trip, and a patronage growth rate of 3%pa is assumed.

The procedures use a 6% discount factor, an evaluation period of 40 years, and a 12% service provider rate of return.

Using the described parameters, the bi-direction figure 8 loop (Option 1) has a BCR of 0.27 as shown in Figure 10. The full workings behind this are attached in Appendix B.

[5] The farebox recovery ratio is currently under review and revised guidance is awaited.

Typically, a BCR of 1 or above is required to justify government funding.

The key variables to test in terms of sensitivity of the BCR outcome are patronage and fares. A quick analysis was undertaken to see what patronage would be required to get a fundable BCR. Holding all the other parameters constant, the bi-directional figure 8 loop would have a BCR of 1.10 if annual patronage of 750,000 was achieved. This is equivalent to 11 passengers per trip per day for 359 days of the year.

In conclusion, a central city bus loop service generally does not meet the pre-conditions to access government funding, as the primary objective is not to reduce private vehicle trips or provide significant congestion relief. Even if an alternative strategic case could be pitched to NZ Transport Agency, the exceptionally high levels of patronage required to generate a positive BCR seem unrealistic, and therefore funding from alternative sources will be required.

Figure 10 SP9 summary for Option 1 Bi-directional loop

2	Activity/package details						
	Approved organisation name	Dunedin City Council					
	Activity/package name	Inner City Bus Loop					
	Your reference						
	Activity description						
	Describe the issues to be addressed						
3	Location						
	Brief description of location						
4	Alternatives and options						
	Summarise the options assessed						
5	Timing						
	Time zero (assumed construction start date)	1 July	2020				
	Expected duration of construction (months)						
	Period of analysis		15				
6	Economic efficiency						
	Date economic evaluation completed (mm/yyyy)		Mar-20				
	Base date for costs and benefits	1 July	2020				
	Road length affected by use of passenger transport	8.3	kilometres				
	Peak period traffic flow		vehicles/hour				
	Estimated traffic growth	1.00	percentage/annum				
7	PV of funding assistance					$ 0	A
8	PV of service provider costs					$ 7770042	B
9	PV of passenger transport user benefits	695818	C x update factor	1.03	= $	695818	X
10	PV of passenger transport road traffic reduction benefit	1377213	D x update factor	1.03	= $	1377213	Y
11	BCR_N = PV net benefits / PV economic costs = X + Y / B =					0.27	
12	BCR_G = PV net benefits / PV costs to government = X + Y / A =					0.00	

4.5 Waka Kotahi NZ Transport Agency Engagement

In addition to the discussion on Waka Kotahi's funding criteria and economic efficiency above in section 4.4, direct engagement has been made with Waka Kotahi's local investment advisor Chad Barker to understand Waka Kotahi's position on funding contribution to a service of this nature, and make sure all Waka Kotahi funding opportunities have been explored.

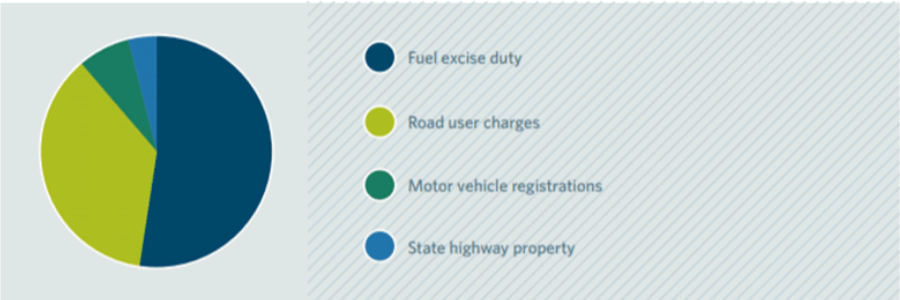
From a Waka Kotahi perspective, (and consistent with the conclusion in section 4.4) a service of this nature would not attract Waka Kotahi funding support as a standalone improvement project. Based on the new draft prioritisation criteria this service has poor alignment with Government priorities of:

- significant mode share shift
- offer material advantages in terms of access to destinations within a certain timeframe
- changes in frequency from the existing level of service.

The project is also not critical to public transport service changes in Dunedin. For example, increasing service from Mosgiel/South is a higher priority for funding support. Additionally, this project has low interdependency with other projects, and is not critical to enabling the benefits realisation of other projects. The economic efficiency is also likely to be less than one.

In the current Covid-19 environment, central government is facing new challenges in prioritising spending of the National Land Transport Fund (NLTF). Largely funded by fuel exercise duty and road user charges (as shown in Figure 11); revenues for Waka Kotahi have been reduced significantly in the short to medium term, and there is a high level of uncertainty on the impact of future revenue streams.

Figure 11 National Land Transport Fund inputs



Revenue going into the NLTF can vary from year to year depending on the economy, petrol prices, and government decisions on transport related levies and charges. The multitude of changes as a result of Covid-19 will affect what is invested, particularly in new and improved state highway infrastructure.

Waka Kotahi are also now funding the lost fare revenue nationally to allow public transport to be free.

Under a normal environment a service of this nature would be unlikely to attract Waka Kotahi funding priority. In the current environment there are a number of compounding variables that would make it even more unlikely for this project to attract funding.

Waka Kotahi have suggested the most favourable avenue for this project would be to have it considered as part of the Shaping Future Transport Programme Business Case that is currently in progress in Dunedin, or alternatively through changing of existing services and unit procurement.

5.0 Risks

This section provides a summary of the key risks and potential mitigation strategies in relation to the bus loop service. In addition to these, a risk register is included in Appendix C.

The key risks associated with the bus loop can be divided into the following categories:

- Demand for the service;
- Operational risks; and
- Cost and legislative risks.

Demand risks

The proposed bus loop would be a unique service for Dunedin and would perform a very specific last mile function to support shoppers and visitors accessing key attractions within the city. It is not possible to accurately forecast the demand for this type of service. For example, it could be overwhelmed with cruise ship passengers (assuming that cruise ships return to Port Chalmers in future) during the summer months and could be almost unused outside of this period. The uncertainties around potential demand present a key risk if ticketing revenue is to be an important funding stream for this service.

While certainty of demand for the service itself cannot be mitigated, operating the service as a trial for a period which encompasses part of the peak months and quieter months in the city would provide a good indication of the level of demand that could be realised in the longer term.

Operational risks

Operational risks relate to service reliability and ultimately to knock-on impacts on patronage. The proposed service will be highly susceptible to reliability issues for the foreseeable future due to the following reasons:

Congestion

The bus loop operates entirely on city centre streets and will be highly susceptible to peak time congestion on a daily basis. This will be particularly acute during the summer months when the network is busiest, however existing (pre-Covid-19) congestion levels in the city centre should not cause major delays.

Part of the mitigation for day-to-day congestion impacts will be in the operating model for the service. Assuming the service is operated on a frequent basis (<12 minutes), it should not be timetabled as such, but simply advertised as operating every 10-12 minutes. This being the case, passengers are unlikely to be concerned when, during peak times, it takes a few minutes longer to complete each loop and effectively operates at a slightly reduced frequency than advertised.

Transformational context

Significant disruption to the city centre network is anticipated for the foreseeable future as construction works for the Retail Quarter upgrade project and new hospital take place. These activities will result in multiple road and intersection closures in the city centre, which will disrupt traffic patterns and may result in significant congestion on some sections of the network. These closures are highly likely to disrupt the service. Bus services are inherently flexible and minor diversions are inevitable in urban areas from time to time, however the concentration of closures likely to affect this service over the next few years is very high and frequent diversions and service changes are likely to take their toll on legibility and ultimately patronage.

While there is limited research on the impacts of road closures and route diversions on public transport patronage, numerous studies have been undertaken to determine factors that improve a transit service and increase patronage. Levinger and McGehee (2008) recommended optimising ease, effectiveness, comfort and aesthetic of a transit service to attract new riders. Similarly, Pratt (1999) found that a 1% increase in transit service frequency, mileage, or operating hours will result in a 0.5% increase in ridership. While it is acknowledged that these relationships may not directly translate to the same decrease in patronage if the service was impacted by road closures. It is possible to assume any

negative impact on ease, effectiveness, comfort or aesthetic of the service as a result of future construction work will cause a patronage downturn.

A more direct example of the negative impact route changes and road works can have on patronage is the case of the Hamilton Orbiter service (see section 6.2). A sharp decline in Orbiter patronage from around 920,000 passengers per year in 2014 to less than 800,000 passengers per year in 2016 corresponded with the completion of a major roading project. The project forced an Orbiter route change resulting in the service doubling back on itself and contributing to the perception that travelling by car was the more efficient transport mode.

Mitigation for these events will revolve around extensive and well-planned communication strategies utilising multiple channels including physical notices at stops, on board vehicles, proactive and reactive social media, web-based information provision and also potentially advertising in local publications. The staff time required to co-ordinate these activities will be significant.

Increased journey times resulting from significant diversions and / or congestion can be mitigated by the provision of additional vehicles to service the loop. However, given the compact nature of the city centre, there is a high risk that passengers will abandon the service in favour of walking if journey times are too long.

Cost and legislative risks

These risks are related to potential cost escalation through the procurement process and legislative limitations regarding procurement options and operational models.

Cost risks

The public transport industry is in the process of understanding the implications of the Employment Relations Amendment Act (2018) which introduced new requirements related to driver hours, break times and provisions. Depending on compliance agreements reached between unions, operators and Regional Councils, these regulations may significantly increase the costs of operating public transport services. In addition to this risk, there is a potential risk that operators may not be interested in providing the requested service, which could lead to an uncompetitive procurement environment and higher out-turn costs.

A market sounding exercise could be undertaken to determine operator interest and ultimately inform the level of contingency funding required to mitigate this risk.

Legislative risks

Current Public Transport Operating Model (PTOM) legislation protects operators of existing services under PTOM contracts by preventing the imposition of a new public transport service which could abstract patronage from the existing service. Existing PTOM contracts are gross contracts (ORC receive all revenue) but include financial rewards for operators where patronage / revenue increases over time. As a result, an operator of an existing contract may be worse off financially if a new service abstracts patronage from their existing services.

The city centre loop service would replicate sections of almost all of Dunedin's existing bus services and existing operators are likely to be concerned that it would abstract patronage, therefore the service provision could be subject to legal challenge.

There are several potential mitigation strategies to avoid this:

- Undertake a trial service, with extensive monitoring. A fixed term trial service is likely to be acceptable to operators where monitoring will record any abstraction of patronage which can be used as a negotiation tool.
    a. If the trial identifies patronage abstraction from other services, negotiations can commence with the operators to take abstracted patronage into account when calculating performance incentive payments. This will effectively transfer costs from existing contracts to the bus loop service.
    b. If the trial identifies that the service does not abstract patronage, the service would be eligible for registration as an exempt service under PTOM regulations. This would mean that the service could be operated outside PTOM legislation by an authorised

body. This approach could be highly beneficial as it should allow more flexible procurement and operation of the service and is likely to result in lower costs.

- An alternative option would be to approach the two existing Dunedin bus operators to see if they are willing to operate the service together. In this case the financial gain from operating a new service may offset any anticipated loss in performance payments for existing services. This approach is not recommended as it would result in uncompetitive procurement, driving up costs and would be contractually onerous.

6.0 Case studies

The following section discusses case studies of other inner city bus services in New Zealand. Examples were chosen from Christchurch, Hamilton and Invercargill, all of which are operating or have previously operated inner city bus services with varying levels of success. The case studies aim to provide background context for each service, outline the operating parameters, comment on the success of each service, draw comparisons with the Dunedin context and highlight lessons learned that my help with the decision making.

6.1 Christchurch Central City Shuttle

The following case study discusses the Christchurch Central City Shuttle Bus, a free shuttle service that became iconic in Christchurch prior to the 2011 earthquakes. In recent years, the Greater Christchurch Public Transport Joint Committee, comprising representatives from Environment Canterbury, Christchurch City Council (CCC), Selwyn District Council, Waimakariri District Council and Waka Kotahi, have expressed interest in reinstating the Shuttle with the goal of supporting economic vitality and contributing to the post-quake regeneration process. Since 2016, several reports have been developed in order to assess potential shuttle options and determine its feasibility, although to date a final decision has not been made and operations have not commenced.

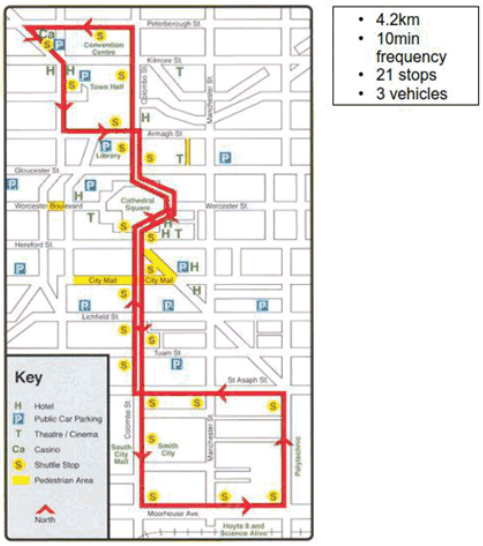
6.1.1 Background

Operation of the Christchurch Central City Shuttle began in 1998 and continued until the February 22 earthquake in 2011. The shuttle was free and used by a variety of passengers; particularly students, the elderly and mobility impaired who used the service to get to parts of the city they were otherwise unable to access[6]. The shuttle also facilitated movement outside the central city by allowing for transfers at the bus exchange.

During its tenure the shuttle operated around 28,800 trips per year and carried around 11 million passengers. The shuttle ran a continuous loop (as shown in Figure 12) at a 10 to 15 minute frequency and passed within walking distance of the Science Alive/Hoyts Cinema complex, CPIT, Casino and other key shopping areas and destinations in the inner city. The service was free and funded by CCC to avoid the legislative restriction of local government collecting revenue from a public transport service.

[6] Greater Christchurch Public Joint Committee. *Agenda and Meeting Papers*. 15 February 2017.

Figure 12 Christchurch shuttle route map



Aside from providing improvements to movement throughout the central city, the shuttle became an icon for Christchurch due to its unique design (Figure 13) and at the time, advanced electric vehicle technology. The shuttle was a well-known symbol, contributing the Christchurch's international image as well as highlighting the city's commitment to the environment and a sustainable transport network.

Figure 13 Image of the old Christchurch Shuttle

6.1.2 Christchurch CBD land use

The Christchurch central city is generally considered to be bound by the "four avenues": Bealey Avenue to the north, Moorhouse Avenue to the south, Deans Avenue to the west and Fitzgerald Avenue to the east. Compared to Dunedin, although topographically flat, the Christchurch central city

is significantly larger, causing historical issues of fragmentation and accessibility. Where an individual may be able to walk between destinations in Dunedin, an alternative mode of transport may be required in Christchurch.

The Christchurch Central Recovery Plan attempts to consolidate this dispersed area, by defining distinct precincts. Each precinct is intended to fulfil a specific purpose, with land use activities to match. A map of the precincts can be found in Figure 14 with relevant descriptions in Table 16[7].

Figure 14 Christchurch central city precincts

Table 16 Christchurch central city precincts

Precinct	Description
Avon River Precinct	An area of enhanced amenity and green space surrounding the Avon River, with priority given to pedestrians and cyclists. A number of design features reflect the river's cultural heritage and importance of Tangata whenua.
Retail Precinct	A compact vibrant area offering destination shopping with planning provisions to support commercial activity and pedestrian-friendly streets.
Convention Centre Precinct	The area surrounding the planned convention centre.

[7] Christchurch Central Recovery Plan (2013). *An Accessible City*.

Health Precinct	A compact area anchored by the existing hospital with planned private research, educational and medi-hotel facilities to be located within walking distance of each other.
Justice and Emergency Services Precinct	An area with the Ministry of Justice, New Zealand Police, Department of Corrections and the judiciary co-located and collaborating in the same area.
Innovation Precinct	A technology-based industry and research precinct, aimed at attracting new business and employment opportunities in high-value industry sectors.
Performing Arts Precinct	An area offering facilities for music and the performing arts.

Other key central city destinations, which are currently at varying levels of completion include: the Central City Frame, the Central Library, the Metro Sports Facility and the Stadium.

6.1.3 Reinstating the Christchurch Shuttle

In 2016, the Greater Christchurch Public Transport Joint Committee formally committed to investigate reinstating a new central city shuttle service, claiming the service would improve central city public transport, resulting in better connectivity, increased economic vitality, and improved accessibility. The committee were particularly concerned with improving connectivity and the revitalisation of the CBD, noting the post-quake CBD was not only dispersed, but also fragmented, making movement difficult and unpleasant. A shuttle service was considered one of several ways to address these issues[6].

Several Christchurch plans and strategies offer a strategic justification for the reinstatement of a Central City Shuttle. The idea of a new shuttle service is specifically mentioned in the transport chapter of the Christchurch Central Recovery Plan and more recently, the 2018 Canterbury Regional Public Transport Plan.

The Central City Recovery Plan States:

Further opportunities to connect key destinations will be investigated to ensure the best possible coverage is offered in the medium- to long-term as the rebuild progresses. Initiatives could include reintroducing shuttle services or enhancing the Metro system. Any inner-city public transport service will be integrated with the city-wide public transport system. Energy-efficient and environmentally friendly options will be considered.[7]

The Regional Public Transport Plan States:

A key feature in this Plan is the inclusion of a trial central city shuttle service, as a specialist service. A central city shuttle would link together key origins and destinations, enhancing the attraction and trip generating capacity of the public transport network.[8]

Mention of the shuttle in these two key planning documents along with the Regional Public Transport Plan's objectives to achieve a "high patronage public transport system" and "maximise user access to the network across as much of the city as possible", creates a strategic case for the reinstatement of the Christchurch shuttle service.

6.1.4 Options report

The Central City options report presented seven options (as shown in Table 17) to address the following identified issues and opportunities:

1. The rebuilding central city is fragmented and dispersed, making it unpleasant and difficult for people to move between key points of interest
2. Current coverage and frequency of the existing public transport service within the central city does not make it a viable travel choice for some users
3. A shuttle service could provide the "ride" component of possible park and ride facilities on the periphery of the CBD[6]

[8] Connect Canterbury Public Transport (2018). *Canterbury Regional Public Transport Plan.*

Table 17 Christchruch Central City Shuttle options

Option	Description
Option 1 – Do nothing	Prepare a formal business case Continue investigate park and ride opportunities and bus service adequacy Consider a bike share scheme to address issues and priorities
Option 2a – Reinstate shuttle bus (diesel)	Diesel buses running short inner city loop Continue investigate park and ride opportunities and bus service adequacy
Option 2b – Reinstate shuttle bus (electric)	Electric buses running short inner city loop Continue investigate park and ride opportunities and bus service adequacy
Option 3a – Reinstate Shuttle bus (diesel) + park and ride	Diesel buses running short inner city loop Integrated park and ride loop absorbing CDHB service
Option 3b – Reinstate shuttle bus (electric) + park and ride	Electric buses running short inner city loop Integrated park and ride loop absorbing CDHB service
Option 4 – Metro adjustment	Increase frequency/coverage of metro network Strong focus on central city
Option 5 – Metro adjustment	Increase frequency/coverage of metro network Strong focus on central city Free travel within the central city

A range of financial and legal implications were discussed based on whether a decision is made to reinstate the shuttle or adjust the existing Metro network. Implications are summarised below:

Shuttle reinstated

- **Operating costs** -operating costs for three diesel buses running on a basic inner city loop were expected to be around $500K. Electric buses may cost $700K and an integrated park and ride loop may bring costs up to $1.3M
- **Infrastructure costs** – Additional infrastructure costs may be necessary to provide stops for a new bus loop. Costs would vary depending on the number and quality of stops.
- **Cost of service** – It was considered likely a new shuttle service would need to be free (or a very low fare) to be considered convenient by locals. The service would therefore require subsidising.
- **Operation responsibility** – The city council is legally precluded from operating a passenger transport service. This may be overcome if the passenger service is free. Alternatively, ECan would be responsible for procurement and integration into the Metro network.
- **Contract tender** – There is a legal precedent for not tendering the shuttle contract due to limited interest by operators in operating hybrid buses.

Metro service adjusted

- **Cost** – Costs are difficult to predict without more detailed information on what lines are to be changed. Possible costs ranged from $5K to over $1M
- **Infrastructure costs** – It is possible more bus stops will be necessary if existing lines are changed.[6]

Based on the options report presented the joint committee recommended a business case be developed to further assess the feasibility of reinstating the shuttle, while continuing to explore a bike share scheme for Christchurch. In June 2017, findings were presented from the business case and the committee agreed that, although a new shuttle service would offer some positive benefits for central city access and regeneration, the existing budget did not allow for it and the potential for third party funding was unlikely. It was also noted that the city was in a dynamic state of regeneration and it would be a risk to implement the shuttle without a proper understanding of demand and connectivity issues[9].

Despite the lack of funding, the committee was generally in favour of reinstating the central city shuttle. It was therefore decided that shuttle funding should be considered as part of the next public transport review along with the possibility of implementing the shuttle on a trial basis[2]. This has since been written into the 2018 Regional Public Transport Plan, although to date, this trial has not progressed.

6.1.5 Lessons learnt

Several comparisons and lessons can be drawn from the Christchurch Shuttle example that may be relevant for the establishment of a similar bus loop in Dunedin. First is the immense popularity of the Christchurch shuttle during its operation. The options report stated the shuttle made 28,800 trips per year and carried a total of around 11 million passengers[6]. This is roughly equal to 29 passengers per trip.

The shuttle addressed connectivity and access issues in Christchurch and linked key attractions and shopping destinations throughout the central city. The service was therefore particularly popular with the elderly, students and mobility impaired who were able to access areas in the city they were otherwise unable to[6]. It can be noted, however, that Christchurch's central city is larger than Dunedin's and a similar service in Dunedin may be covering a more walkable area.

Operating as a free and frequent service, the Shuttle was popular due to its convenience and affordability. It also meant CCC could run the service, overcoming legislative requirements for regional government to operate public transport. This may be something to consider when determining the operational model for Dunedin.

The exceptional design of the Christchurch Shuttle may also have contributed to its popularity. As previously discussed, the unique design and modern electric vehicle technology contributed to the shuttle becoming a nationally and internationally recognised icon, which was regularly used in marketing material to showcase Christchurch's environmentally friendly and sustainable transport network[6]. Similar modern or unique design features may be beneficial to consider in a Dunedin example to set the loop apart as a new and convenient transport option.

Finally, recent efforts to reinstate the Christchurch Shuttle exemplify the importance of timing when establishing a new bus service. As discussed above, although Public Transport Committee members were generally in favour of bringing back the shuttle and there was agreement the shuttle would provide benefits for the city, the funding was simply not available at the time, particularly as it was found to be unlikely to receive Waka Kotahi funding[6]. The decision to re-establish the shuttle was pushed back to a wider public transport review and has since not gone ahead, although plans may progress soon. If Dunedin were to establish a similar bus loop, it is important early provisions are made and plans are put in place for how the service may be funded.

[9] Greater Christchurch Public Joint Committee. *Agenda and Meeting Papers*. 17 October 2017.

6.2 Hamilton CBD Shuttle

The following case study discusses the Hamilton CBD Shuttle, a free bus loop that has been operating in Hamilton central city for over a decade. Recent years have seen a downturn in patronage and a shift in public sentiment towards the shuttle, resulting in plans to phase out the service.

6.2.1 Background

The Hamilton CBD Shuttle was launched in April 2006 as part of the "Access Hamilton" transport strategy. The transport strategy put forward a range of objectives addressing issues of traffic congestion, supporting transport alternatives and improving accessibility of Hamilton's CBD[10]. The shuttle service was launched in conjunction with opening of the Knox Street commuter car park, a key infrastructure project aimed at improving parking provision and easing traffic congestions in the CBD. The carpark and shuttle were intended to be complimentary services to encourage people to leave their cars on the edge of the CBD and take public transport in the inner-city[11]. In July of the same year, the Hamilton Orbiter service was also launched as part of the same transport strategy, providing a loop service extending out to the wider Hamilton suburbs and operating on a roughly 15 minute frequency. The Orbiter and CBD shuttle share a transfer point and are intended to create a more attractive, integrated and efficient transport system[11].

In 2008, improvements were made to the CBD Shuttle as part of an Accessible Journeys trial. The project involved collaboration with the Hamilton City Council (HCC), Waikato Regional Council (WRC), Land Transport New Zealand (now Waka Kotahi) and various disability advocacy groups to remove barriers to bus use for mobility, vision and hearing impaired and improve bus accessibility. Areas of focus included aisle width, seating arrangement, ramp incline, audio-visual equipment and kerb height at bus stops[12]. A review of the trial in 2009 found these changes were well received by the public and improved access for the elderly, disabled, those with children and tourists[13].

The Hamilton Shuttle continues to operate to this day, although has recently experienced a downturn in patronage and public sentiment for reasons explained further in this case study.

6.2.2 Hamilton CBD land use

The Hamilton central city is the heart of Waikato and the region's cultural and recreational hub. The central city size is comparable to Dunedin and is also topographically flat, making both cities easily walkable. There are, however, some key differences. Notably, the University of Waikato and Waikato hospital are located away from the central city, potentially reducing visitor numbers to the CBD.

The Hamilton District Plan recognises that Hamilton is growing and the previous planning framework has resulted in the unplanned dispersal of retail and office development to the detriment of function, amenity and vitality. The Council's vision, however, is for the central city to be at the core of future growth. The plan breaks the central city into three key precincts: Downtown, City Living and Ferrybank. The Downtown Precinct is planned to provide for the region's commercial growth with support for retail, dining and entertainment uses at street-level and higher density office and residential uses above ground. City Living Precincts are located to the north and south of the Downtown Precinct and supports more mixed-use development with residential and small to medium scale office and commercial activities. The Ferrybank Precinct is also located to the south of the downtown precinct and is planned to grow as the civic, cultural, community and tourism centre of Hamilton[14]. A map of central city precincts can be found in Figure 15.

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[10] Waikato Regional Council. (2006). *Council count down to shuttle launch.* Available from: https://www.waikatoregion.govt.nz/community/whats-happening/news/media-releases-archived/councils-count-down-to-shuttle-launch/

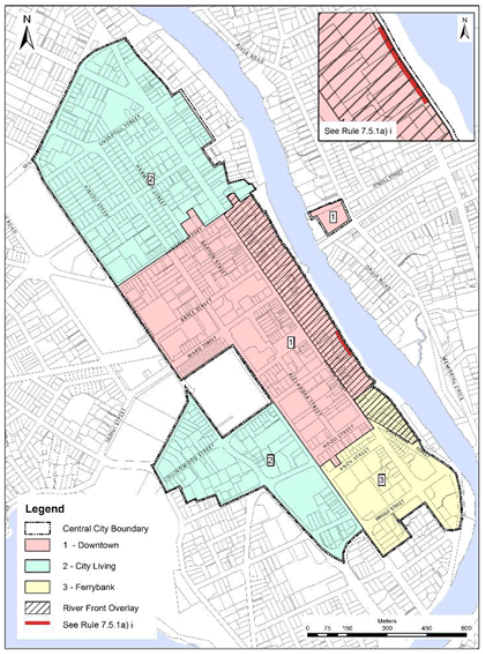
[11] Hamilton City Council. (2006). *A Vision for Our City – Annual Report Summary 2005/06.*

[12] Waikato Regional Council (2008). *Trial to improve bus accessibility in Hamilton.* Available from: https://www.waikatoregion.govt.nz/community/whats-happening/news/media-releases-archived/trial-to-improve-bus-accessibility-in-hamilton/

[13] Kristensen K. (2009). *The Hamilton City Accessible Journey Trial – An evaluation.*

[14] Hamilton City Council (2017). *Operative District Plan.*

Figure 15 Hamilton central city precinct map

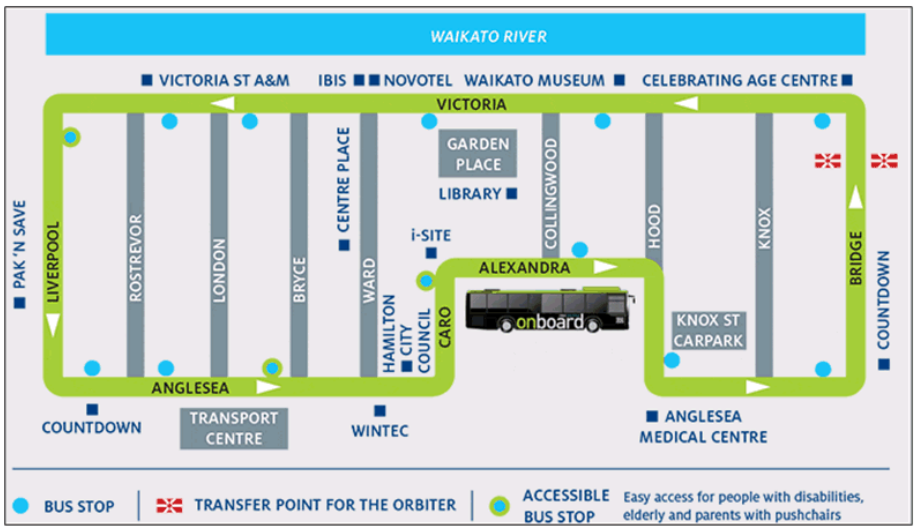


When considering potential destinations within the Hamilton central city, the downtown area is predominantly comprised of commercial and retail activity, including shopping centres, banks, hotels, a Hoyts cinema facility, a SkyCity Casino, as well as the council buildings. To the north are more shopping areas, including Countdown and Pak'nSave supermarkets. To the south is the Hamilton District and High Court, an aged care centre and tourist destinations such as the Waikato Museum, visitor centre and St Peter's Cathedral. Importantly, while there are two smaller medical centres in the central city, the main hospital lies further out. The University of Waikato is also located away from the central city.

6.2.3 Operation

The Hamilton CBD Shuttle is a free service running Monday to Friday from 7am to 6pm. The shuttle runs a continuous anticlockwise loop of around 4.2km, with two buses operating at a 10-minute frequency. The route runs past several of Hamilton's key destinations including the Waikato Museum, council buildings, two medical practices, the library and import retail and accommodation centres. Figure 16 displays a map of the CBD Shuttle route

Figure 16 Hamilton Shuttle route map



6.2.4 Patronage

In 2014 and 2015 the Hamilton CBD Shuttle served between 28,000 and 30,000 passengers per month. From 2015 onwards a downward trend was exhibited, and numbers dropped to around 26,000 per month by the end of 2016. More recent patronage figures show that in February 2020, the shuttle served around 12,000 passengers, around 6 passengers per trip.

A passenger survey conducted in 2015 revealed several insights into the behaviour and characteristics of CBD Shuttle users. The service was evidently popular and frequently used by passengers. Of those surveyed:

- 40% of passengers used the service 5+ days a week.
- 37% of passengers used the service 2-4 days a week
- Only 8% used the service 1-2 days a month or less

When asked the purpose of their trip:

- 34% of passengers used the service for shopping, of which 29% used it at off-peak times
- 22% of passengers used the service for work, split between peak and off-peak times
- 22% of passengers used the service for education, also split between peak and off-peak times

7% of respondents reported they were mobility impaired

Although the shuttle is integrated into the wider public transport network, 63% of survey respondents indicated their trip did not involve a transfer from another bus. This could indicate that many passengers used the service as a park and ride option and view the shuttle as a more convenient method of navigating the central city.

6.2.5 Fares, costs and funding

The Hamilton CBD shuttle is a free service. The 2015 passenger survey indicated that the fact the service was free significantly contributed to its popularity. When passengers were asked about their willingness to pay a fare, the number of people that would no longer use the service dramatically increased with the price of the potential fare. With a $0.50 fare, arounds 26% of respondents would no longer use the service. With a $2.00 fare, 78% of passengers would no longer use the service. This

pattern was the same regardless of whether respondents had their driver's licence or their own private vehicle.

An HCC council report from 2007 indicates the operational cost of the CBD shuttle at the time was around $222,000 per year[15]. A later application for NZTA funding in 2009 estimated a cost of $349,000[16].

HCC was initially responsible for the operation and funding of the CBD shuttle, which at the time was funded through the "Access Hamilton" transport strategy. In later years, the service was integrated into the wider public transport network and WRC took over responsibility of the service[6].

In 2009, an application for funding from NZ Transport Agency was approved. The Transport Agency approved an initial funding assistance rate of 50% ($174,500) for 2008/2009 and agreed to fund 35.5% of the gross cost of the service in future years. The remainder of the cost is met through targeted rates. Funding was approved on the basis that the shuttle assisted economic vitality by supporting the town centre, addressed traffic congestion issues, improved safety and security and improved access and mobility for bus users[7].

6.2.6 Future of the CBD Shuttle

Recent years have seen a shift in public perception towards the CBD Shuttle. Reports of antisocial behaviour have been mentioned in the media along with general negative sentiment towards those that do not contribute to society using the service for a free ride. These people were perceived as threatening, giving other passengers the feeling of being unsafe[17]. Several CBD businesses have consequently called for changes in the provision of the shuttle service. An option exists to create a high-frequency "central corridor" from the Waikato Hospital, through the CBD and out to the Base shopping centre[18]. A more likely immediate option being considered is replacing the shuttle with $1 CBD fare zone for all bus services.

A prominent downward trend in CBD shuttle patronage has continued in recent years. In the 12 months leading up to April 2017, a decline of 93,480 passengers was observed on the Orbiter and CBD Shuttle services, about equal to the total decline on all other routes in Hamilton combined. More recent data shows at the beginning of 2020, the shuttle was serving around 12,000 passengers per month, a decrease of over 15,000 compared with 2015. One suggested catalyst for the decreasing popularity of public transport in Hamilton is changes to the Orbiter service creating the perception that travelling by private vehicle is more efficient[19]. It is, however, noted that most shuttle users do not take other buses, suggesting other factors are also at play.

6.2.7 Lessons learnt

Several key comparisons and learnings can be drawn from Hamilton that may be applicable when considering a similar service for Dunedin. The Hamilton CBD Shuttle was initially very popular, with patronage of the service steadily increasing to a peak around 2014. Passengers were particularly supportive of the shuttle being free and this appears to have significantly influenced their choice to use the service.

The Hamilton service was initially launched in conjunction with the opening of new parking building near the CBD and was intended to act as a complimentary park and ride option to alleviate congestion and demand for parking in the inner city. A 2015 passenger survey indicated the shuttle was effectively serving this purpose with 63% of respondents indicating their journey had not involved a bus transfer. This suggests a similar Dunedin loop may be successful as a park and ride option if adequate off-street parking is available.

One of the reasons why the success of the Hamilton Shuttle could have been constrained is the land use within the CBD. It is noted in the district plan that the previous planning framework has resulted in

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[15] Hamilton City Council. *Transport Committee Agenda*. 8 May 2007.
[16] NZ Transport Agency (2009). *Bus operations – Waikato CBD shuttle service – implementation funding*. Available from: https://www.nzta.govt.nz/planning-and-investment/funding-and-investing/investment-decisions/board-decisions/bus-operations-waikato-cbd-shuttle-service-implementation-funding/
[17] NZ Herald. (2014). *Concerns raised over bus service*. Available from: https://www.nzherald.co.nz/hamilton-news/news/article.cfm?c_id=1503366&objectid=11340100
[18] Waikato Regional Council. *Hamilton Public Transport Joint Committee OPEN MINUTES*. 16 February 2018.
[19] Waikato Regional Council. *Hamilton Public Transport Joint Committee Agenda*. 2 June 2017.

a dispersed central city to the detriment of function, amenity and vitality. Importantly, both the University of Waikato and Waikato Hospital, two key destinations for visitation and employment, are situated away from the Hamilton central city. This may be reason to believe a similar Dunedin Shuttle could be more successful with key employment and visitation destinations concentrated in a single area.

The Hamilton study also highlights the importance of an effectively functioning wider network to ensure the continued success of an inner city bus loop. In the case of Hamilton, while there were no significant changes to the operation of the CBD Shuttle, changes to the Orbiter service resulted in flow-on effects to patronage and a significant decline in patronage in the following years.

Finally, while the free fares policy on the Hamilton Shuttle appeared to contribute to its popularity, it may have also resulted in other issues. Antisocial behaviour has been reported along with people perceived as threatening using the service for a free ride. This has also generated some negative sentiment that ratepayer money is being spent to provide a free service for those that are not contributing to society.[i]

6.3 Invercargill Freebie Service

This case study discusses the Invercargill "Freebie" bus, an inner city bus loop service and one of several free, off-peak services operating in Invercargill in the early 2000s. The free fare scheme proved remarkably successful in boosting public transport patronage at the time, although the scheme was phased out around 2012 to be replaced with the existing Invercargill bus network. Note, this case study is dated, but can still provide some general context and understanding of how a central city loop service operated and was received by the public.

6.3.1 Background

In 1989, with the passing of the Transport Services Licensing Act, responsibility for managing passenger transport services shifted to regional authorities. Prior to this, public transport services were generally owned, planned and funded by local government. In the years following this shift in responsibility, negative sentiment towards the management of public transport in Invercargill grew. Ratepayers were frustrated their money was going to a regionally operated service with no obvious improvements to quality or patronage. For this reason, in the late 90s, the Invercargill City Council was delegated responsibility to operate their own public transport network.

During this time, Invercargill was experiencing difficulties encouraging public transport patronage. The size and layout of the city resulted in short travel times by private vehicle. There was limited congestion during peak hours and abundant CBD parking, contributing to the perception that travelling by car was the easier and more efficient way to navigate the city.

Around the same time, funding for public transport services in New Zealand could be collected through the New Zealand Transport Agency patronage funding scheme. The scheme paid councils dollar credits for every additional passenger carried above an established yearly patronage count, thereby encouraging the implementation of strategies to boost public transport use without the need to meet a specific farebox recovery.

In an effort to increase the appeal of public transport, a decision was made by Invercargill City Council to run free services during off-peak hours on several existing bus routes. This included the Freebie service, a continuous loop running through the inner city and connecting suburbs to the north and south.

6.3.2 Invercargill CBD land use

The Invercargill CBD is the key zone for commercial, retail and entertainment activities in the city. Like Dunedin, Invercargill's inner city is small, flat and walkable, although with fewer potential visitor destinations.

The District Plan recognises the area is under threat from the slow pace of development, new development located outside of the central city and deferred maintenance and structural issues associated with older buildings[20]. There are, however, several destinations that would attract visitors to the central city including shopping hubs, a medical centre, Civic Theatre and Southern Institute of Technology. Topography of the city is flat, making movement throughout relatively easy by all transport modes. Movement around the central city by private vehicle is particularly efficient due to wide streets, limited congestion during peak hours and abundant parking, making it challenging to encourage the use of public transport.

6.3.3 Operation

The Freebie bus operated a loop service in the inner city and was free during off-peak hours, from 9:00am to 2:30pm during weekdays and 9:00am to 3:00pm on Saturdays. Two buses would run in the north and south and cross over in the city centre. The service aimed to support access to all areas of the inner city and could be flagged down at any point along the route, eliminating the need for bus stops.

The Freebie bus was complimented by other services with the same off-peak free fare scheme, including the "Purple Circle", another loop service connecting the outer suburbs of Invercargill.

[20] Invercargill City Council (2019). *Invercargill City District Plan.*

6.3.4 Outcomes

The initial aim of boosting public transport patronage in Invercargill through free off-peak fares was a success. Patronage doubled under this system, resulting in additional funding collected through the Transport Agency patronage scheme.

The success of the Freebie bus prompted further upgrades to improve accessibility for people with disabilities. It was reported that the service was particularly popular among the elderly, as well as students, who were able to save a significant amount of money on a student budget[21].

The Freebie service also meaningfully contributed to stimulating the town centre. The library was used more frequently and there was a greater sense of liveliness to the city.

The end of the off-peak free fare system came as the Transport Agency changed its patronage-based funding scheme to cut back its share of the passenger transport budget. The new scheme required a 50% farebox recovery to qualify for Transport Agency funding. At this point, bus fare revenue covered only 8% of the contract to run the service and was considered uneconomical to continue[1]. An intermediate solution saw fare increases outside of free hours and the Freebie service was eventually replaced with existing services in 2012.

6.3.5 Lessons learnt

The Invercargill Freebie bus service was made possible by a Transport Agency funding scheme which no longer exists. As a result, it may not be as directly relevant as other previously discussed case studies. Another unique aspect of this example is the fact the Invercargill City Council is responsible for the management and operation of their own public transport network. There are, however, some important lessons that could be applied to a Dunedin example. The first is the success of the Freebie service. Interviewees reported a doubling in bus patronage when the free fare scheme was put in place, resulting in notable improvement to the vitality of the inner city. When the free fare scheme was taken away, patronage sharply dropped once again, indicating fare price is a determining factor influencing people's choice to take public transport.

Another key lesson from this case study is the funding implications of a free fare scheme. Providing free services in Invercargill worked well at the time when the strategic priority was to boost patronage. When this priority shifted to a farebox-based funding system, it was no longer economically viable to run the Freebie service as fare revenue only covered 8% of operating costs. It is therefore important to have a clear plan for how a similar service will be funded to ensure the sustainability of the operation.

[21] Stuff. (2010). *Invercargill's bus 'freebies' may be axed*. Available from: http://www.stuff.co.nz/national/3305372/Invercargills-bus-freebies-may-be-axed

7.0 Summary

This study is the result of collaborative work between ORC and DCC. Four inner city route options were developed with special consideration given to key destinations within the Dunedin central city. These options range in distance and price with the least expensive South loop estimated to cost around $400,000 and the most expensive Maximum coverage loop estimated to cost around $1,650,000.

Patronage scenarios for each option were developed based on the average vehicle occupancy per trip along with the average fare price for existing services. Under a medium patronage scenario, the cost recovery for each option is likely to be between 36 and 41%, meaning over half of operational costs will have to be funded from other sources. Using an average fare price of $1.80, between six and nine passengers per trip would be required to achieve a maximum farebox recovery.

Further economic assessment and engagement with a Waka Kotahi representative revealed that the bus loop is unlikely to meet the preconditions for government funding as the primary objective is not to reduce private vehicle trips or provide significant congestion relief. The service also does not align with Government priorities of facilitating a significant mode share shift, offering material advantages for access to destinations within a certain timeframe, or supporting changes in frequency from the existing level of service. Funding for a new inner city bus loop will therefore likely need to be obtained from other sources.

Three case studies in Christchurch, Hamilton and Invercargill were examined to draw learning lessons for Dunedin. At their peak, each service supported significant patronage levels. A consistent theme was that their popularity was largely attributed to the fact each service was free of charge to the user. Several positive impacts were also reported. The Christchurch service addressed connectivity issues in the central city, the Hamilton service worked as a park and ride option, while the Invercargill service contributed to an increased sense of liveliness in the central city. All examples were particularly popular among students, the elderly and mobility impaired. Each case study has experienced financial constraints leading to the phasing out of the service in Invercargill, the likely future phasing out in Hamilton and difficulties reinstating the service in Christchurch. Negative perceptions have also been reported in Hamilton with cases of antisocial behaviour and some believing the service is being exploited for a free ride.

8.0 Appendix A

8.1 Alternative cost scenarios

The following tables outline a range of cost scenarios for a new inner city bus loop when key operating parameters are amended. In each table, the altered parameter is highlighted, with the change in cost shown in the final column.

Operating costs for bus loop options with the discussed operating parameters in this report are shown in the following table.

Option	Frequency (minutes)	Number of Buses Required	Hours per day	Days per week	Estimated Annual Cost
Option 1 Figure 8	10	4	8	7	$910,000
Option 2 South loop	10	2	8	7	$400,000
Option 3 North loop	10	2	8	7	$410,000
Option 4 Maximum coverage	10	6	8	7	$1,650,000

Operating costs for bus loop options running 6 hours a day are displayed in the following table.

Option	Frequency (minutes)	Number of Buses Required	Hours per day	Days per week	Estimated Annual Cost
Option 1 Figure 8	10	4	6	7	$760,000
Option 2 South loop	10	2	6	7	$340,000
Option 3 North loop	10	2	6	7	$350,000
Option 4 Maximum coverage	10	6	6	7	$1,350,000

Operating costs for bus loop options running 10 hours a day are displayed in the following table.

Option	Frequency (minutes)	Number of Buses Required	Hours per day	Days per week	Estimated Annual Cost
Option 1 Figure 8	10	4	10	7	$1,060,000
Option 2 South loop	10	2	10	7	$470,000

Option	Frequency (minutes)	Number of Buses Required	Hours per day	Days per week	Estimated Annual Cost
Option 3 North loop	10	2	10	7	$480,000
Option 4 Maximum coverage	10	6	10	7	$1,950,000

Operating costs for bus loop options running at a 15 minute frequency are displayed in the following table.

Option	Frequency (minutes)	Number of Buses Required	Hours per day	Days per week	Estimated Annual Cost
Option 1 Figure 8	15	2	8	7	$470,000
Option 2 South loop	15	2	8	7	$430,000
Option 3 North loop	15	2	8	7	$430,000
Option 4 Maximum coverage	15	4	8	7	$1,100,000

Operating costs for bus loop options running at a 30 minute frequency are displayed in the following table.

Option	Frequency (minutes)	Number of Buses Required	Hours per day	Days per week	Estimated Annual Cost
Option 1 Figure 8	30	2	8	7	$410,000
Option 2 South loop	30	2	8	7	$390,000
Option 3 North loop	30	2	8	7	$390,000
Option 4 Maximum coverage	30	2	8	7	$450,000

Operating costs for bus loop options running 5 days per week are displayed in the following table.

Option	Frequency (minutes)	Number of Buses Required	Hours per day	Days per week	Estimated Annual Cost
Option 1 Figure 8	10	4	8	5	$720,000
Option 2 South loop	10	2	8	5	$320,000
Option 3 North loop	10	2	8	5	$330,000
Option 4 Maximum coverage	10	6	8	5	$1,280,000

8.2 Cost breakdown

Indicative breakdown of the cost components of each option. The PVR cost (Peak Vehicle Requirement) has been based on the use of standard single deck diesel buses. Use of the equivalent size electric vehicles would likely increase the PVR cost by 60-100%.

Option	Total cost	Cost Components		
		Distance	Hours	PVR
Option 1 Figure 8	$910,000	32%	35%	33%
Option 2 South loop	$400,000	23%	40%	37%
Option 3 North loop	$410,000	24%	39%	37%
Option 4 Maximum coverage	$1,650,000	44%	29%	27%

9.0 Appendix B

9.1 Simplified procedures workings

Spreadsheet v 1.01 (14-May-10)

SP9 New passenger transport services continued

Worksheet 1 - Evaluation summary

1	Evaluator(s)						
	Reviewer(s)						
2	Activity/package details						
	Approved organisation name	Dunedin City Council					
	Activity/package name	Inner City Bus Loop					
	Your reference						
	Activity description						
	Describe the issues to be addressed						
3	Location						
	Brief description of location						
4	Alternatives and options						
	Summarise the options assessed						
5	Timing						
	Time zone (assumed construction start date)	1 July	2020				
	Expected duration of construction (months)						
	Period of analysis		15				
6	Economic efficiency						
	Date economic evaluation completed (mm/yyyy)		Mar-20				
	Base date for costs and benefits	1 July	2020				
	Road length affected by use of passenger transport	8.3	kilometres				
	Peak period traffic flow		vehicles/hour				
	Estimated traffic growth	1.00	percentage/annum				
7	PV of funding assistance					$ 0	A
8	PV of service provider costs					$ 7770042	B
9	PV of passenger transport user benefits	695818	C x update factor	1.03	= $	695818	X
10	PV of passenger transport road traffic reduction benefit	1377213	D x update factor	1.03	= $	1377213	Y
11	$BCR_N = \frac{\text{PV net benefits}}{\text{PV economic costs}} = \frac{X + Y}{B} =$					0.27	
12	$BCR_G = \frac{\text{PV net benefits}}{\text{PV costs to government}} = \frac{X + Y}{A} =$					0.00	

SP9 New passenger transport services continued

Worksheet 2 - Service provider costs

Year	Capital cost (1)	O&M cost (2)	SPPWF (3)	PV of costs (4) = [(1)+ (2)] x (3)
1	0	$907,715	0.93	844175
2		$907,715	0.86	780635
3		$907,715	0.79	717095
4		$907,715	0.74	671709
5		$907,715	0.68	617246
6		$907,715	0.63	571861
7		$907,715	0.58	526475
8		$907,715	0.54	490166
9		$907,715	0.5	453858
10		$907,715	0.46	417549
11		$907,715	0.43	390318
12		$907,715	0.4	363086
13		$907,715	0.37	335855
14		$907,715	0.34	308623
15		$907,715	0.31	281392

5	PV of the service provider costs	7770042	**B**

Transfer the PV of service provider costs **B**, to **B** in worksheet 1.

SP9 New passenger transport services continued

Worksheet 3 - Funding gap analysis

1	Service provider rate of return per annum	12%
2	Proposed user charge ($/boarding)	1.8
3	New passenger transport users in year 2	182,232
4	Estimated patronage growth rate (percent/annum)	3.00%

Year	Capital cost (5)	O & M cost (6)	Additional revenue from other sources	Revenue (7)	Funding gap (8)	Annual total (9) = [(7)+(8)] - [(5)+(6)]	SPPWF (10)	NET PV (11) = (9) x (10)	PV funding gap (12) = (8)x(10)
1	0	907715.2		328018	4004086	3424388	0.89	3057490	3575077
2	0	907715.2		337858		-569857	0.80	-454287	0
3	0	907715.2		347994		-559721	0.71	-398399	0
4	0	907715.2		358434		-549282	0.64	-349078	0
5	0	907715.2		369187		-538529	0.57	-305576	0
6	0	907715.2		380262		-527453	0.51	-267224	0
7	0	907715.2		391670		-516045	0.45	-233433	0
8	0	907715.2		403420		-504295	0.40	-203676	0
9	0	907715.2		415523		-492192	0.36	-177489	0
10	0	907715.2		427989		-479727	0.32	-154459	0
11	0	907715.2		440828		-466887	0.29	-134219	0
12	0	907715.2		454053		-453662	0.26	-116444	0
13	0	907715.2		467675		-440041	0.23	-100846	0
14	0	907715.2		481705		-426010	0.20	-87170	0
15	0	907715.2		496156		-411559	0.18	-75190	0

13	Sum of net PV	= sum of column **(11)** = $	0
14	Total funding gap	= sum of column **(8)** = $	4004086
15	PV funding gap	= sum of column **(12)** = $	3575077

Funding assistance

Year	Subsidy (16)	SPPWF (17)	PV subsidy (18) = (17) x (17)
1		0.93	0
2		0.86	0
3		0.79	0
4		0.74	0
5		0.68	0
6-15		4.75	0

19	PV of funding assistance	= $	0	**A**

Transfer the PV of the funding assistance **A**, to **A** in worksheet 1.

The NZ Transport Agency's Economic evaluation manual (volume 1)
First edition, Amendment 0
Effective from Jan 2010

SP9 New passenger transport services continued

Worksheet 4 - Passenger transport user benefits

1	Passenger transport user benefits		
	New passenger transport users in year 2	182,232	**(a)**
	Estimated growth rate (per annum)	3.00%	**(b)**
	Proposed user charge (per boarding)	1.8	**(c)**
	Maximum amount users (user charge) are willing to pay for new service	2.6	**(d)**
	Passenger transport user benefit for new service (per boarding) = **(d)** - **(c)**	0.8	**(e)**
	Net passenger transport user benefit in year 2 = **(a)** x **(e)** x 0.5	72892.8	**(f)**
2	Present value PT user benefits		
	This calculation is based on a 15-year analysis period and assumes that the service is operating from years 2 to 15. If a different period is used, refer to chapter 7.		
	PV = **(f)** x DF (table 1) = $	695818	**C**
	Transfer the PV of passenger transport user benefits **C**, to **C** in worksheet 1.		

SP9 New passenger transport services continued

Worksheet 5 - Road traffic reduction benefits

1	Calculating road user benefits			
	Urban area		Christchurch/other	
	Method 1 (using values from table 3 above)			
	New passengers on passenger transport service in year 2	=	182,232	**(a)**
	Average length of vehicle trip replaced by passenger transport service (km)	=	4.15	**(b)**
	Road traffic reduction benefits = **(a)** × diversion rate × **(b)** × benefit/vehicle km (per year)	= $	173562.3126	**(c)**
	Method 2 (using a recognised transport model)			
	Total vehicle-km removed from road corridor affected by passenger transport service in year 2			**(d)**
	Road traffic reduction benefits = **(d)** × benefit/vehicle km (from table 1)		0.00	**(e)**
2	PV of road traffic reduction benefits			
	Traffic growth rate in road corridor		0.00%	
	PV = **(c)** or **(e)** x DF (table 2) =	$	1377213	**D**
	Transfer the present value of road traffic reduction benefits **D**, to **D** in worksheet 1.			

SP9 New passenger transport services continued

Worksheet 6 - BCR and incremental analysis

Time zero	1 July	
Base date	1 July	

BCR calculations	Do-minimum	Option	Option	Option	Option
Benefits					
PV passenger transport user benefits **(X)**					
PV road traffic reduction benefits **(Y)**					
PV total net benefits **(X + Y)**	0	0	0	0	0
Total cost to government					
PV of funding assistance (options) **(A)**					
BCR_G = (X + Y)/A	0	0	0	0	0

Base option for comparison			Next higher cost option			Incremental analysis		
Option	Total costs **(1)**	Total benefits **(2)**	Option	Total costs **(3)**	Total Benefits **(4)**	Incremental costs **(5)=(3)-(1)**	Incremental benefits **(6)=(4)-(2)**	Incremental BCR_N **(7)=(6)/(5)**
						0	0	0.00
						0	0	0.00
						0	0	0.00
						0	0	0.00

10.0 Appendix C

10.1 Risk register

Risk	Description	Likelihood	Impact	Impact type	Mitigation
Patronage	The quantity and type of fare-paying passengers directly impacts the fare revenue for the service, and therefore the level of investment required to operate such a service.	Possible	Major	Financial	Operation of a fixed term trial service will lead to a better understanding of patronage. Contingency funding should be reserved for use in the event that patronage levels are lower than anticipated.
Operational	Risks related to the reliability of the service, particularly regarding congestion and disruption due to road closures etc.	Almost certain	Moderate	Patronage – Financial implications	Operation of a non-timetabled service i.e. every xx minutes. Reactive and proactive communication strategy to enable users to understand route changes.
Cost	Cost escalation due to lack of interest from operators and / or new employment legislation.	Possible	Major	Financial	Undertake market sounding exercise to determine market interest. Identify and reserve contingency funding to cover potential cost escalation.
Legislation	PTOM legislation regarding services which could abstract patronage from existing services.	Certain	Major	Service feasibility	Trail service to understand any abstraction of patronage. Engagement with existing operators to determine likely objections to the service /

					wiliness to work together to operate the service.
Funding	Inability to obtain NZTA funding for the service.	Almost certain	Moderate	Financial	Early engagement with NZTA to understand likelihood of funding. Exploration of alternative funding sources
Procurement	There is uncertainty as to who will procure the service and whether competitive procurement will possible	Possible	Moderate	Financial	See legislation risk. Legal advice may be required for the procuring body. Undertake market sounding exercise to understand operator interest.
Road closures	The bus loop may be impacted by road closures with planned closures on George Street for Retail quarter upgrade, and new Hospital.	Almost certain	Low	Patronage – Financial implications	The bus loop can be rerouted when necessary to avoid road closures.
Public perception	The service will be highly visible. If it has low patronage or does not generate sufficient revenue to cover costs, public perception may be negative.	Possible	Moderate	Reputational	Clear communications strategy required to set out the purpose of the service. A fixed term trail will help to generate an understanding of likely patronage.
Pandemic	The ongoing response to Covid-19 may reduce the capacity of public transport services due to physical distancing. Concerns regarding transmission on public transport may reduce demand for the service.	Almost certain	Moderate	Patronage – Financial implications	Cleaning / disinfecting in line with MoH guidelines Support physical distancing by limiting the maximum capacity of a vehicle and marking out acceptable seating arrangements.

AECOM Imagine it Delivered

Inner City Bus Loop
Dunedin City Council
29-Oct-2020

Dunedin Inner City Bus Loop

Study two - George Street Variations

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Revision 1 – 29-Oct-2020
Prepared for – Dunedin City Council – ABN: N/A

Dunedin Inner City Bus Loop

Study two - George Street Variations

Client: Dunedin City Council

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Quality Information

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Reviewed by Nick Bristed

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Rev	Revision Date	Details	Authorised	
			Name/Position	Signature

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Prepared for – Dunedin City Council – ABN: N/A

Executive Summary

AECOM has been commissioned by Dunedin City Council (DCC) to undertake a study investigating the feasibility of a new inner-city bus service operating in central Dunedin. This study is in addition to the project (Study one) jointly funded by Otago Regional Council (ORC) and DCC completed in May 2020.

The purpose of this study is to stimulate discussion among members of the DCC surrounding the desired operation of a new inner-city loop as well as inform decision makers of the likely considerations needed for investment in a service of this nature.

The scope of this investigation includes:

- Development and evaluation of four new route options
- Indicative operating costs (aligned to Study one)
- Investment considerations

Aspirations

The ideas and aspirations conveyed by DCC councillors for the new inner-city bus loop service include:

- A high frequency, free service
- Small, quiet, low emission vehicles
- Appealing to largest possible user group
- Service key destinations throughout the city
- Compliment the bus hub and interface with existing bus routes
- Work with future urban design aspects of George Street
- Hop-on/off and possibly flag down along Princes and George Street without requiring a bus stop
- Potential to operate on a trial bases to understand demand for the service.

Route options developed in this study are broadly discussed in relation to these aspirations.

Route development

Four route options (shown below) were collaboratively developed in a workshop with key DCC staff and two councillors and adjusted in the following weeks. A primary focus of the new route options was the ability to traverse the length of George Street. The routes have been mapped in relation to the primary and secondary destinations determined in Study one, providing an indication of service and access to likely popular patronage generators.

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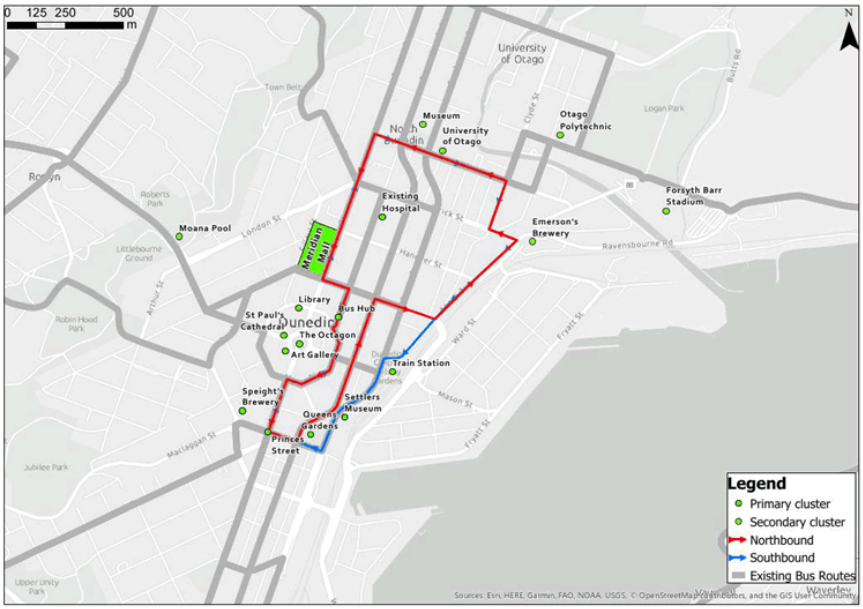
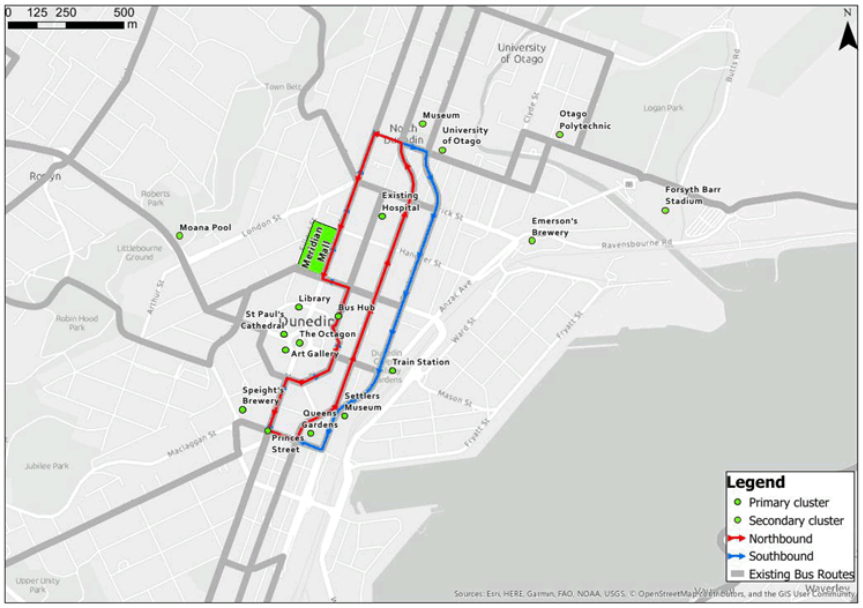
Option 5 – Wide loop



Option 6 – Narrow loop



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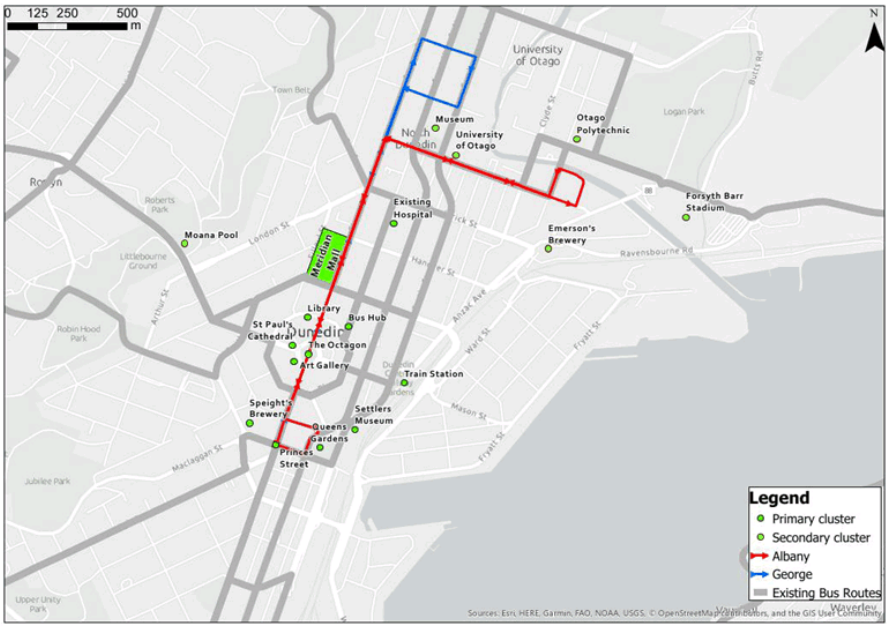
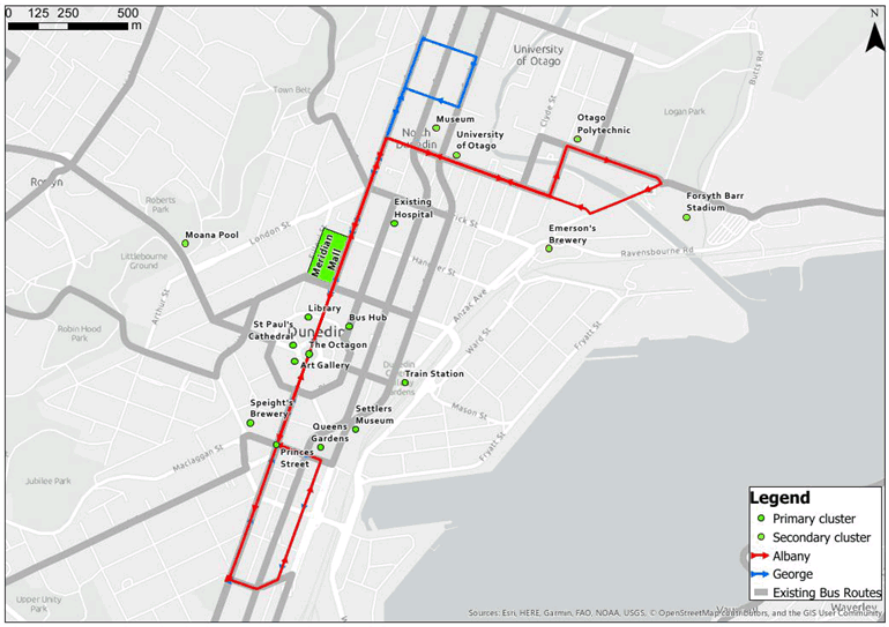
Revision 1 – 29-Oct-2020
Prepared for – Dunedin City Council – ABN: N/A

Option 7 – George and Albany Street shuttle



Option 8 – Extended George and Albany Street shuttle



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Prepared for – Dunedin City Council – ABN: N/A

Performance against Study one objectives

Each option was assessed against the objectives determined in Study one. Rankings are based on a four-point scale, where a dash indicates a negligible impact, one tick is a mildly positive impact, two ticks is a moderately positive impact and three ticks is a significantly positive impact. A summary of the scores for each option is displayed in the table below alongside the annual operational costs of each option, based on the operating parameters and assumptions from Study one and available information on electric vehicles. Note, cost information is indicative at this point given the uncertainty in exact operating costs of electric vehicles.

Objective	Option 5	Option 6	Option 7	Option 8
1 – Mitigation for restricted vehicle and reduced bus access on George Street.	✓✓✓	✓✓✓	✓✓✓	✓✓✓
2 – Encourage shoppers and visitors to move around the central city and support local businesses	✓✓	✓✓	✓✓	✓✓✓
3 – Improve accessibility for people with mobility issues	✓✓✓	✓✓	✓✓	✓✓
4 – Provide a park and ride option for inner city car parks	✓	✓	✓	✓
5 – Service the central city and encourage commuters to use public transport	✓✓	✓✓	✓	✓
Annual operating cost	$850,000	$800,000	$880,000	$1,235,000
Number of buses required	4	4	4	5

Option five, the wide loop covers the largest area of the new options, supporting greater accessibility to more parts of the city, including areas and businesses to the east. It is also the only option that extends to Emerson's Brewery, the train station, Settlers Museum and the site of the Otago Farmers Market. The wide loop is likely to have good student appeal as it passes several popular student residential streets including Hyde, Leith and Clyde Street. This option passes through the bus hub facilitating access to the existing wider public transport network. However, due to the larger coverage, the wider loop is more expensive, and may take longer to get between some locations.

The narrow loop, Option six is the shortest and cheapest of the new route options. It integrates with the bus hub facilitating access to the existing wider public transport network and is the only new option that passes near the hospital. The shorter loop means it will be quicker to get between some locations. The narrow loop serves the fewest key destinations of the three new route options. Although the route covers several key central city destinations, the route bypasses the Octagon and provides the least extensive coverage to popular student areas. This may limit the appeal of the service to the student demographic.

Option seven, the George and Albany Street shuttle passes directly through the Octagon, providing access to several key central city destinations including the Art Gallery, Library and St Paul's Cathedral. The directness of the runs along George and Albany Streets offer efficiency and together with the overlap of the two runs will essentially double the service frequency along George Street between Rattray and Albany Street at no added cost. This may however create some congestion along George Street, particularly given the uncertainty in future design and provision of stopping infrastructure. The George and Albany Street shuttle also offers extensive coverage of areas popular among students, and serves key western access points to the University of Otago campus, while the Albany Street run serves the entire southern end of campus and loops back near popular student residential areas to the east. This option does not pass through the bus hub though. The George and Albany Street runs combined are a longer route options and therefore more expensive.

Option eight, an extended George and Albany shuttle travels largely the same route as option seven and serves all the same key destinations. In this option, however, the routes extend further south, providing service to the Warehouse Precinct. The Albany shuttle also travels past Otago Polytechnic, Forsyth Barr Stadium and through residential areas heavily populated by students. The routes combined cover the largest distance of the new options and therefore the annual operating costs are the most expensive.

Alternative vehicles

This study starts to explore other vehicle options that align with DCC's aspirations to see the central city loop service using vehicles that are modern, low emissions / electric, compact and of a unique / aesthetically pleasing design. Rapidly changing technology however present difficulties in developing cost estimates, as pricing for EVs is changing rapidly and there is a lack of information publicly available for the New Zealand context. Indicatively, the marginal cost of electric buses compared to diesel buses of the same size is around double, with the estimated cost of an eight-metre-long electric bus being around $700,000 -$800,000. Operating costs of an electric bus are estimated to be around 10% cheaper than diesel[1].

An electric bus has a battery life of around 10 years and a range of approximately 250 kilometres[2]. Battery capacity reduces after five years. The initial cost for charging infrastructure is approximately $65,000 to $80,000 for a 150KW charger and will need to be replaced every two to three years at half the cost of the original purchase.

Operating model.

Further Investigation is required to determine how this service will be operated and funded. If a service of this nature is deemed integral to the public transport network, it could be written into the Regional Public Transport Plan and potentially contracted by ORC. This would require discussion and coordination with ORC to fulfil process and contractual requirements. Alternatively, the service would need to be operated (and funded) outside the existing public transport network as an exempt service. Operating as an exempt service outside of the public transport network, with no access to the National Land Transport Fund, the DCC will be responsible for raising the capital and operational expenditure required to run the central city bus service. In addition to Council funds through rates or user pays (fares) there may be additional funding opportunities that could be explored including grants and private investment.

Trial

DCC have indicated the possibility of initially running the inner-city bus loop on a trial basis. Trials are a good way to test projects in a low risk low cost environment, however for this initiative there would be a high cost and high risk to carry out a trial. A trial would allow a preferred route to be tested, determine potential primary users, and create an opportunity to gauge the likely success of the service (and impact on the wider public transport network). However, there is a sizeable financial risk involved in setting up the service operation to trial, including investing in new vehicles. Additional risks include the uncertainty of the final George Street operational configuration, and possible interruption of a trial to allow for construction.

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[1] Cost estimations in this study are based on the use of standard single decker diesel buses (consistent with study one).

[2] The route options tested would require a single bus to run between 160 and 235kms per day, so it has been assumed that the range would be sufficient for this service.

1.0 Introduction

1.1 Scope

AECOM has been commissioned by Dunedin City Council (DCC) to undertake a study investigating the feasibility of a new inner-city bus service operating in central Dunedin. This study is in addition to the project (Study one) jointly funded by Otago Regional Council (ORC) and DCC completed in May 2020. Study two continues investigations as DCC have expressed interest in pursuing an inner-city bus loop to consider route options that would service George Street directly as well additional information on small electric vehicles.

In addition, possible route options devised in Study one assumed the future redesign of George Street would significantly reduce access to public transport. Consequently, these options largely avoided traversing areas planned for development. For this investigation, however, Dunedin councillors have suggested the design of George Street may allow for the accommodation of smaller public transport vehicles. It has therefore been requested that new route options be developed that service the full length of George Street. These new options are assessed in detail throughout this report.

The purpose of this study is to stimulate discussion among members of the DCC surrounding the desired operation of a new inner-city loop as well as inform decision makers of the likely considerations needed for investment in a service of this nature. The report presents four new route options, discusses strengths and weaknesses and provides indicative costs for each.

The scope of this investigation includes:

- Route development
- Indicative operating costs (aligned to Study one)
- Investment considerations

1.2 Aspirations for a new bus loop

At commencement of this additional study, a workshop was held with two DCC transport representatives and two Dunedin councillors (Cr O'Malley and Cr Benson-Pope). The purpose of this workshop was to devise a series of new potential routes for the inner-city bus loop. In addition, the workshop offered the opportunity to further understand councillor expectations and aspirations for the service.

The ideas and aspirations for the new inner-city bus loop service included:

- A high frequency, free service
- Small, quiet, low emission vehicles
- Appealing to largest possible user group
- Service key destinations throughout the city
- Compliment the bus hub and interface with existing bus routes
- Work with future urban design aspects of George Street
- Hop-on/off and possibly flag down along Princes and George Street without requiring a bus stop
- Potential to operate on a trial bases to understand demand for the service.

Route options developed in this study will be broadly discussed in relation to these aspirations.

2.0 Study one – Context

This section briefly describes the previous work carried out during the options development phase of Study one providing context to the route development process and presenting some key destinations within the Dunedin central city that may be valuable to be served by a new bus loop. Routes from Study one were developed with a series of objectives in mind and were tested against each objective in order to understand the likelihood of achieving DCC and ORC aspirations. Objectives included:

1. Provide a mitigation for restricted vehicle and reduced bus access on George Street in the future
2. Encourage shoppers and visitors to move around the central city and support local businesses
3. Improve accessibility for people with mobility issues
4. Provide a park and ride option for inner city car parks
5. Service the central city and encourage commuters to use public transport rather than private vehicles

2.1 Key destinations and patronage generators

At the start of the route development process, AECOM undertook an initial scoping exercise to identify potential destinations and patronage generators that could be served by a new central city bus loop. Destinations included key retail precincts and visitor attractions, major car parking buildings, hotels; tourist and student accommodation; Otago University, Otago Polytechnic and the existing hospital.

Destinations were refined to a set of key destinations considered particularly desirable to service. These were further broken into primary and secondary clusters. The primary cluster consisted of destinations in the immediate central city, while the secondary cluster destinations were located further afield yet were still considered favourable for bus loop service. The primary and secondary destinations determined as part of Study one are shown below in Figure 1.

Figure 1: Primary and secondary cluster destinations

With these destinations in mind, four route options were developed of varying distances and levels of service to patronage generators. Routes were tested against objectives discussed above and analysed to understand the likely costs and patronage requirements for each option.

2.2 Operating parameters

The following operating parameters were agreed by DCC and ORC during Study one:

- Buses will run eight hours per day between 09:30 and 17:30
- Routes will have buses running in both directions
- Buses will operate at around a 10-minute frequency

A 10-12 minute frequency is commonly recognised as the threshold at which passengers deem a service to be frequent enough to arrive at a stop independent of a timetable[3]. This means passengers do not need to pre-plan their journeys and adherence to a schedule is less important.

These parameters were used to inform the cost analysis of each new option and are at this stage indicative. Specific parameters will be explored further as DCC agree on the desired level of investment and aspirations for the central city service.

3.0 Study two - New options development

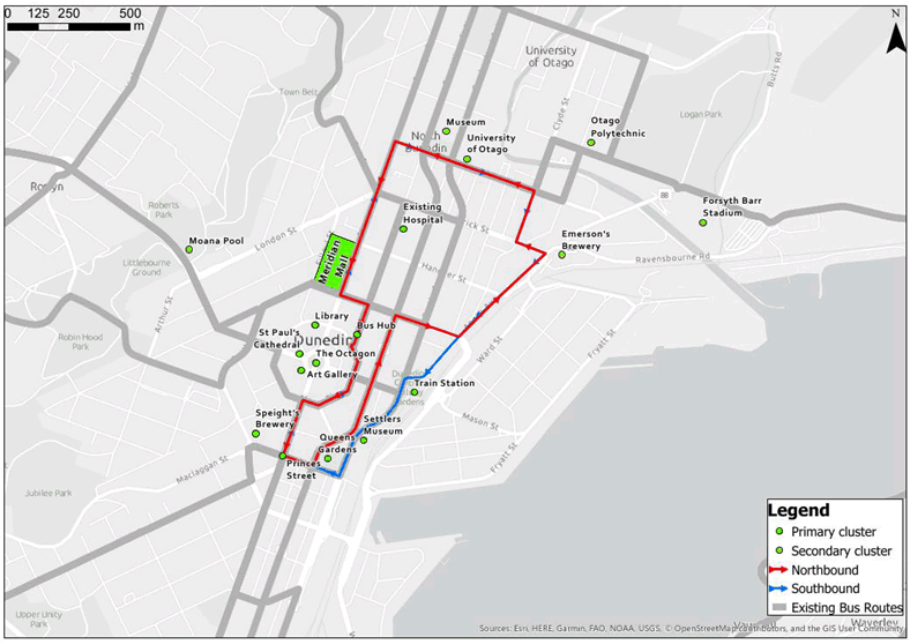
As previously mentioned, a workshop was held in September 2020 to discuss ideas and aspirations for a new inner-city bus loop as well as develop new route options that would traverse the length of George Street. New options are presented in this section and include a wide loop, narrow loop, a George and Albany Street shuttle and an extended George and Albany Street shuttle. Although favourable destinations for bus loop service were not discussed in this workshop, routes have been mapped in relation to the primary and secondary destinations determined in Study one, therefore providing an indication of service to popular patronage generators.

3.1 Option five – Wide loop

Figure 2 displays the first of four new bus loop options, a Wide loop. As shown, the route is bidirectional, with the red line indicating the northbound loop and the blue showing southbound, based on the one-way street pairs south of St Andrew Street.

[3] White, P (2017), Public Transport: Its Planning, Management and Operation.

Figure 2: Option five - Wide loop



3.1.1 Route description and destinations served

For the northbound (anti-clockwise) loop, starting at the bus hub, travel south around Moray place and down Princes Street to Rattray Street. Turn left onto Rattray Street and then left again onto the northbound one-way system. Continue north to St Andrew Street. Turn right onto St Andrew Street and travel east to Anzac Ave. Turn left at Anzac Ave and travel north to Frederick Street. Turn left onto Frederick Street and then right onto Clyde Street. Continue north along Clyde Street and turn left at Albany Street. Travel west along Albany Street and turn left at George Street. Travel South down George Street and return to the bus hub via St Andrew Street.

The southbound (clockwise) loop operates in reverse, largely following the same route except for traversing the full length on Anzac Ave and continuing on the southbound one-way system to Queens Gardens and Rattray Street.

Table 1 provides a summary of key destination served by the north and southbound wide loops.

Table 1: Destinations served by the Wide loop

	Destinations served	
Destinations	**Northbound**	**Southbound**
Bus Hub	✔	✔
Train Station	✘	✔
Settlers Museum	✘	✔
Queens Garden	✔	✔
Princes Street	✔	✔
Speight's Brewery	✘	✘

Moana Pool	✗	✗
Art Galley	✗	✗
St Paul's Cathedral	✗	✗
Octagon	✗	✗
Library	✗	✗
Meridian Mall	✓	✓
Hospital	✗	✗
Otago Museum	Partially	Partially
University of Otago	✓	✓
Otago Polytechnic	✗	✗
Forsyth Barr Stadium	✗	✗
Emerson's Brewery	✓	✓
Note: Part service = Destination within 100m of route		

3.1.2 Wide loop characteristics

As indicated by the name, the wide loop covers a larger area than the other new options, travelling as far east as Anzac Ave and Emerson's Brewery, a popular hospitality and dining venue. The route provides service to several key primary and secondary destinations, including the bus hub, Meridian Mall, Otago Museum and University of Otago. It does not, however, pass through the Octagon, meaning several popular tourist destinations and hospitality venues are not served.

3.1.3 Distance

The northbound loop is 4.2km, the southbound loop is 4.1km – a total of 8.3km

3.1.4 Performance against Study one objectives

Table 2 displays an objectives achievement matrix, ranking the wide loop option against the objectives from Study one. Rankings are based on a four-point scale, where a dash indicates a negligible impact, one tick is a mildly positive impact, two ticks is a moderately positive impact and three ticks is a significantly positive impact.

Table 2: Wide loop performance against Study one objectives

Objective	Potential Impact	Reasoning
Mitigation for restricted vehicle and bus access on George Street	✓✓✓	The option travels along George Street serving areas planned for development.
Encourage movement around the central city and support local businesses	✓✓	The option serves several primary and secondary destinations including areas of high retail activity along George Street. The Octagon is not served.
Improve accessibility for people with mobility issues	✓✓✓	Frequent service to several key destinations. Larger area covered likely appealing for those with mobility issues.
Provide a park and ride option for inner city car		The route passes prominent inner city car parks on Moray Place and George Street making it potentially appealing

parks	✓	as a park and ride option. The close proximity of these car parks to key destinations would likely result in users walking rather than waiting for the bus.
Service the central city and encourage commuters to use public transport	✓✓	Free central city service stopping at the bus hub likely to support integration with existing public transport network. Potential for additional uptake in public transport for some user groups. Unlikely to attract new commuters as almost all the existing bus routes are through-routed, and users will already be able to travel close to their destination without having to change services therefore the additional appeal of the bus loop is likely to be very minor.

3.1.5 Strengths and weaknesses

The following strengths and weaknesses have been identified in relation to the wide loop option.

Strengths

- **Area** – The wide loop covers the largest area of the new options, supporting greater accessibility to more parts of the city, including areas and businesses to the east.
- **Destinations served** – The wide loop is the only new route option that extends to Emerson's Brewery, a popular dining and hospitality venue. The route also traverses the full length of Anzac Ave, passing by the train station, Settlers Museum and the site of the Otago Farmers Market, held every Saturday morning.
- **Student appeal** – The wide loop traverses the majority of Albany Street, passing several popular student residential streets including Hyde, Leith and Clyde Street. This may increase the appeal of the service for students.
- **Bus Hub integration** – Facilitates access to the existing wider public transport. Potential for additional uptake in public transport for some user groups.

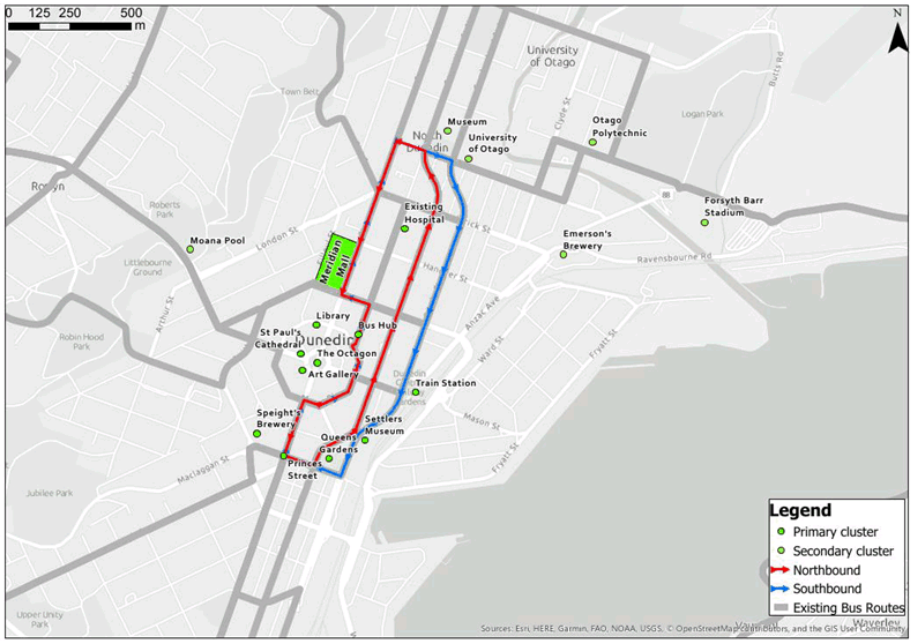
Weaknesses

- **Cost** – the larger area covered by the wide loop will drive up operating costs
- **Distance** – the longer distance means it will take longer to get between some locations
- **Destinations not served** – The wide loop bypasses the Octagon, meaning several key central city destinations are not served. These include the Library, Art Gallery, St Paul's Cathedral. The existing hospital is also missed

3.2 Option six – Narrow loop

The second new option is a narrow loop, as displayed in Figure 3. The route travels in a tighter path where instead of extending to Anzac Ave, the north and southbound loops traverse the one-way systems between Albany and Rattray Street.

Figure 3: Option six - Narrow loop



3.2.1 Route description and destinations served

For the northbound (anti-clockwise) loop, beginning at the bus hub, travel south around Moray place and down Princes Street to Rattray Street. Turn left onto Rattray Street and then left again onto the northbound one-way system. Continue north to Albany Street then turn left and left again onto George Street. Travel south down George Street and return to the bus hub via St Andrew Street.

The southbound (clockwise) loop operates in reverse, following the same route except for travelling south on the Castle Street one-way system.

A summary of destinations served by the north and southbound Narrow loop can be found in Table 3,

Table 3: Destinations served by the Narrow loop

	Destinations served	
Destinations	**Northbound**	**Southbound**
Bus Hub	✔	✔
Train Station	✘	✔
Settlers Museum	✘	✔
Queens Garden	✔	✔
Princes Street	✔	✔
Speight's Brewery	✘	✘
Moana Pool	✘	✘
Art Galley	✘	✘

St Paul's Cathedral	✗	✗
Octagon	✗	✗
Library	✗	✗
Meridian Mall	✔	✔
Hospital	✗	✗
Otago Museum	Partially	Partially
University of Otago	✗	✔
Otago Polytechnic	✗	✗
Forsyth Barr Stadium	✗	✗
Emerson's Brewery	✗	✗
Note: Part service = Destination within 100m of route		

3.2.2 Narrow loop characteristics

The narrow loop is the shortest route option, yet largely covers the same destinations as the wide loop (option five). This brings down operating costs, but also reduces accessibility for areas to the east of the central city such as Anzac Ave and Emerson's Brewery. Again, the route does not travel directly through the Octagon, limiting service to some key tourist and hospitality destinations. Several other primary and secondary destinations are still covered, including the bus hub, Meridian Mall, Otago Museum and University of Otago.

3.2.3 Distance

The northbound loop is 3.3km, the southbound loop is 3.5km – a total of 6.8km

3.2.4 Performance against Study one objectives

Table 4 displays an objectives achievement matrix for the narrow loop.

Table 4: Narrow loop performance against Study one objectives

Objective	Potential Impact	Reasoning
Mitigation for restricted vehicle and bus access on George Street	✓✓✓	The option travels along George Street serving areas planned for development.
Encourage movement around the central city and support local businesses	✓✓	The option serves several primary and secondary destinations including areas of high retail activity along George Street. The Octagon is not served.
Improve accessibility for people with mobility issues	✓✓	Frequent service to several key destinations Smaller area covered likely less appealing for those with mobility issues.
Provide a park and ride option for inner city car parks	✓	The route passes prominent inner city car parks on Moray Place and George Street making it potentially appealing as a park and ride option. The close proximity of these car parks to key destinations would likely result in users walking rather than waiting for the bus.

Service the central city and encourage commuters to use public transport	✓✓	Free central city service stopping at the bus hub likely to support integration with existing public transport network. Potential for additional uptake in public transport for some user groups. Unlikely to attract new commuters as almost all the existing bus routes are through-routed, and users will already be able to travel close to their destination without having to change services therefore the additional appeal of the bus loop is likely to be very minor.

3.2.5 Strengths and weaknesses

The following strengths and weaknesses have been identified in relation to the narrow loop.

Strengths

- **Cost** – The narrow loop is the shortest of the three new route options, making it the least costly. This does however come at the expense of service, offering service to fewer key destinations, potentially reducing appeal to the public.
- **Bus Hub integration** – Facilitates access to the existing wider public transport. Potential for additional uptake in public transport for some user groups.
- **Hospital access** – The Narrow loop is the only new option that passes near the hospital, although not the main entrance on Great King Street.
- **Distance** – the shorter distance means it will be quicker to get between some locations.

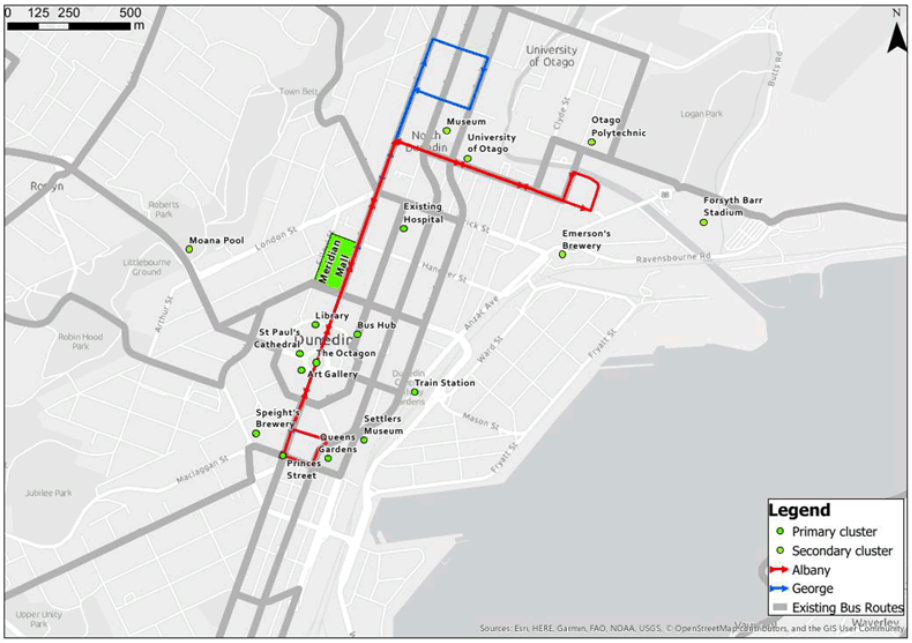
Weaknesses

- **Destinations not served** – The narrow loop serves the fewest key destinations of the three new route options. Although the route covers several key central city destinations, areas to the east are not served. The route also bypasses the Octagon.
- **Student appeal** – Of the new options, the narrow loop also provides the least extensive coverage to popular student areas. This may limit the appeal of the service to the student demographic.

3.3 Option seven – George and Albany Street shuttle

Figure 4 displays the third new route option; the George and Albany Street shuttle. This option shifts away from a loop focus and instead consists of two runs up and down George and Albany Street. The George Street run depicted by the blue line travels in shuttles up and down George Street. The Albany Street run, shown in red, travels in an 'L' shape along George and Albany Street.

Figure 4: Option seven - George and Albany Street shuttle



3.3.1 Route description and destinations served

The George Street run operates continuous laps up and down George Street with turning loops at either end. At the northern end of George Street, turn right onto St David Street, right again onto Cumberland Street and loop back to George Street via Union Street West. At the southern end of George Street, turn left on Rattray Street, left again at Queens Gardens and loop back to George Street via Dowling Street.

For the Albany Street run, travels in an L shape with travel north on George Street, turn right and continue east on Albany Street. At the eastern end of Albany Street, the vehicle turning will include turning left onto Riego Street to loop back to Albany via Forth Street to return to George Street. At the southern end of George Street, the turning circle with use Rattray, Queens Gardens and Dowling Street to loop back in the same way as the George Street run.

A summary of destinations served by George and Albany Street shuttle can be found in Table 5.

Table 5: Destinations served by the George and Albany Street shuttle

	Destinations served	
Destinations	**George Street run**	**Albany Street run**
Bus Hub	✗	✗
Train Station	✗	✗
Settlers Museum	✗	✗
Queens Garden	✓	✓
Princes Street	✓	✓
Speight's Brewery	✗	✗

Moana Pool	✗	✗
Art Galley	✓	✓
St Paul's Cathedral	Partially	Partially
Octagon	✓	✓
Library	Partially	Partially
Meridian Mall	✓	✓
Hospital	✗	✗
Otago Museum	Partially	Partially
University of Otago	✗	✓
Otago Polytechnic	✗	✗
Forsyth Barr Stadium	✗	✗
Emerson's Brewery	✗	✗
Note: Part service = Destination within 100m of route		

3.3.2 George and Albany Street shuttle characteristics

The combined George and Albany shuttle runs are a longer route option. It shifts away from the idea of a looped service, as tested with all other route options so far. Instead, this option involves buses travelling continuously back and forth on two simple and direct routes along George and Albany Street. In contrast to other new options, both the George and Albany Street runs travel through the Octagon, providing service to key central city destinations such as the Art Gallery and St Paul's Cathedral as well as several popular hospitality venues. They do not, however, pass through the Bus Hub, limiting integration with the wider public transport network. There is a possibility to slightly adjust these routes so the Bus Hub is served, although this may detract from the simplicity and directness of this shuttle run service.

3.3.3 Additional considerations

- **Distance** – The George run is 4.4km, the Albany run is 4.9km – a total of 9.3km
- **Frequency** – Given both runs involve return journeys up and down George Street, on the sections where routes overlap, frequency will essentially be doubled. This increased frequency may be appealing to passengers and improve patronage. The increased number of buses, however, may cause congestion issues, particularly given the uncertainty of capacity in the future design of George Street to accommodate large bus style vehicles.

3.3.4 Performance against Study one objectives

Table 6 displays an objectives achievement matrix for the George and Albany shuttle.

Table 6: George and Albany shuttle performance against Study one objectives

Objective	Potential Impact	Reasoning
Mitigation for restricted vehicle and bus access on George Street	✓✓✓	The option travels along George Street serving areas planned for development.
Encourage movement around the central city and support local businesses	✓✓	The option serves several primary and secondary destinations including the Octagon and areas of high retail activity along George Street. No access to destinations outside of George and Albany

		Street.
Improve accessibility for people with mobility issues	✓✓	Limited access to areas other than along George and Albany Street.
Provide a park and ride option for inner city car parks	✓	The route passes prominent inner city car parks on George Street making it potentially appealing as a park and ride option. The close proximity of these car parks to key destinations would likely result in users walking rather than waiting for the bus.
Service the central city and encourage commuters to use public transport	✓	The option does not serve the Bus Hub, limiting integration with the wider public transport network. Unlikely to attract new commuters to use public transport.

3.3.5 Strengths and weaknesses

The following strengths and weaknesses have been identified in relation to the George and Albany Street shuttle.

Strengths

- **Destinations served** – The George and Albany Street shuttle passes directly through the Octagon, providing access to several key central city destinations including the Art Gallery, Library and St Paul's Cathedral.
- **Directness** – The directness of the runs along George and Albany Streets with limited detours may be perceived as efficient and therefore more appealing to some users.
- **Student appeal** – The George and Albany Street shuttle offers extensive coverage of areas popular among students, potentially increasing the appeal among student groups. The George Street run serves key western access points to the University of Otago campus, while the Albany Street run serves the entire southern end of campus and loops back near popular student residential areas to the east.
- **Frequency** – The overlap of the two runs will essentially double the service frequency along George Street between Rattray and Albany Street at no added cost.

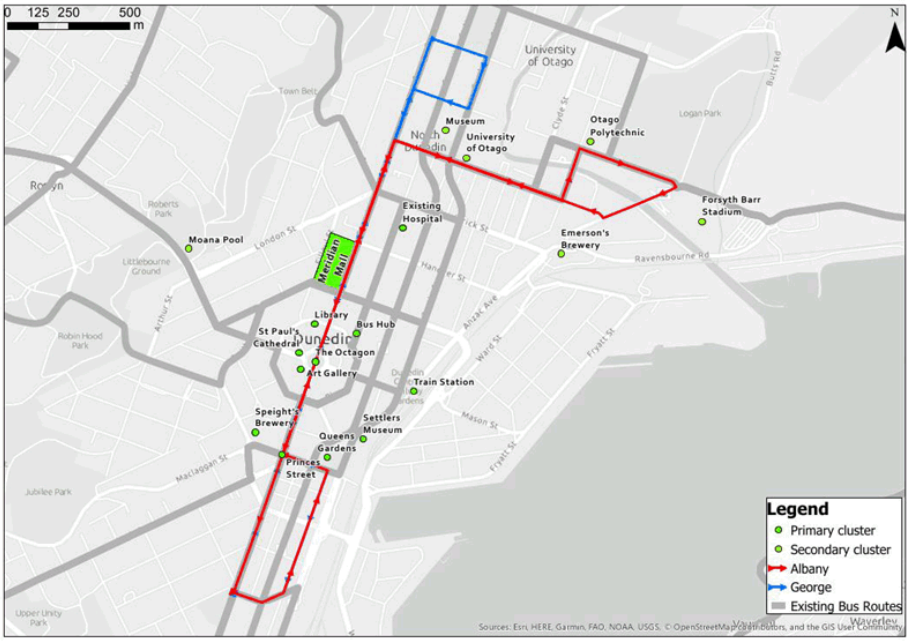
Weaknesses

- **Cost** – The George and Albany Street runs combined are a longer rout option and therefore more costly. The cost difference from options five and six is, however, minimal.
- **Area covered** – The directness of the two runs limits the area able to be covered by this route option, potentially reducing the appeal of the service in terms of access throughout the central city.
- **Congestion** – The overlap of the two runs may cause congestion along George Street, particularly given the uncertainty in future design and provision of stopping infrastructure.
- **Bus Hub integration** – The George and Albany Street runs do not pass through the bus hub and are therefore less likely to encourage an uptake in public transport on the wider network.

3.4 Option eight – Extended George and Albany Street shuttle

Figure 5 displays the final new route option, a variation of the George and Albany Street shuttles with each route stretching further south to Jervois Street and the Albany shuttle extended to service Otago Polytechnic and Forsyth Barr Stadium. As with Figure 4, the George Street Shuttle is depicted by the blue line, while the Albany Street shuttle is shown in red.

Figure 5: Extended George and Albany Street shuttle



3.4.1 Route description and destinations served

For the George Street shuttle, starting at the intersection of Princes and Jervois Street, travel north along the full length of Princes and George Street. Turn right onto St David Street and return to George Street via Cumberland and Union Street. Travel south along the same route to Rattray Street. Turn left onto Rattray Street and then right onto Vogel Street. Return to Princes Street via Jervois Street.

For the Albany shuttle, starting at the intersection of Princes and Jervois Street, travel east along Jervois Street to Vogel Street. Turn left onto Vogel Street and travel north to Rattray Street. Turn left onto Rattray Street then right back onto Princes Street. Travel north along Princes and George Street to Albany Street. Turn right onto Albany Street and continue east. At Forth Street, turn left and then right again onto Union Street East. Travel east to Anzac Ave. Turn right onto Anzac Ave and return to the starting point via Albany and George Street.

A summary of destinations served by the extended George and Albany shuttles can be found in Table 7.

Table 7: Destinations served by the extended George and Albany Street Shuttles

	Destinations served	
Destinations	**George Street run**	**Albany Street run**
Bus Hub	✕	✕
Train Station	✕	✕
Settlers Museum	✕	✕
Queens Garden	✓	✓

Princes Street	✔	✔
Speight's Brewery	✕	✕
Moana Pool	✕	✕
Art Galley	✔	✔
St Paul's Cathedral	Partially	Partially
Octagon	✔	✔
Library	Partially	Partially
Meridian Mall	✔	✔
Hospital	✕	✕
Otago Museum	Partially	Partially
University of Otago	✕	✔
Otago Polytechnic	✕	✔
Forsyth Barr Stadium	✕	✔
Emerson's Brewery	✕	✔
Note: Part service = Destination within 100m of route		

3.4.2 George and Albany extended shuttle characteristics

The extended George and Albany Street shuttles are a variation of option seven and again shifts away from the idea of a looped service. The option consists of two overlapping routes with buses travelling continuously back and forth along simple and direct paths. Routes travel through the Octagon, serving the Art Gallery, St Paul's Cathedral and popular hospitality venues in the area. The Bus Hub, however, is not served, limiting integration with the wider public transport network.

In Contrast to option seven, the Albany Street shuttle makes a larger turning circle, encompassing the Otago Polytechnic and Forsyth Barr Stadium and likely increasing appeal to the student population. This route option also extends further south than any other option so far, travelling along Vogel Street providing access to the warehouse precinct, a prominent historic area of Dunedin and up-and-coming central city destination.

3.4.3 Additional considerations

- **Distance** – The George run is 5.6km, the Albany run is 6.9km – a total of 12.5km
- **Frequency** – Given both runs involve return journeys up and down George Street, on the sections where routes overlap, frequency will essentially be doubled. This increased frequency may be appealing to passengers and improve patronage. The increased number of buses, however, may cause congestion issues, particularly given the uncertainty of capacity in the future design of George Street to accommodate large bus style vehicles.

3.4.4 Performance against Study one objectives

Table 8 displays an objectives achievement matrix for the extended George and Albany shuttles.

Table 8: Extended George and Albany shuttle performance against Study one objectives

Objective	Potential Impact	Reasoning
Mitigation for restricted vehicle and bus access on George Street	✓✓✓	The option travels along George Street serving areas planned for development.

Encourage movement around the central city and support local businesses	✓✓✓	The option serves several primary and secondary destinations including the Octagon and areas of high retail activity along George Street as well as the warehouse precinct, Otago Polytechnic and Forsyth Barr Stadium.
Improve accessibility for people with mobility issues	✓✓	Limited access to areas other than along George and Albany Street.
Provide a park and ride option for inner city car parks	✓	The route passes prominent inner city car parks on George Street making it potentially appealing as a park and ride option. The close proximity of these car parks to key destinations would likely result in users walking rather than waiting for the bus.
Service the central city and encourage commuters to use public transport	✓	The option does not serve the Bus Hub, limiting integration with the wider public transport network. Unlikely to attract new commuters to use public transport.

3.4.5 Strengths and weaknesses

The following strengths and weaknesses have been identified in relation to the extended George and Albany Street shuttle route.

Strengths

- **Destinations served** – The extended George and Albany Street shuttle is the only new route option that passes directly through the Octagon, providing access to several key central city destinations including the Art Gallery, Library and St Paul's Cathedral. The route also serves the majority of secondary destinations and is the only option providing access to Otago Polytechnic and Forsyth Barr Stadium.
- **Warehouse Precinct service** – This is the only route option that travels as far south as the Warehouse Precinct, an up-and-coming urban area with increased investment from private businesses in recent years.
- **Directness** – The directness of the runs along George and Albany Streets with limited detours may be perceived as efficient and therefore more appealing to some users.
- **Student appeal** – The George and Albany Street shuttle offers more extensive coverage of areas popular among students, potentially increasing the appeal to student groups. The George Street run serves key western access points to the University of Otago campus, while the Albany Street run serves the entire southern end of campus and loops back past Otago Polytechnic and through popular student residential areas.
- **Frequency** – The overlap of the two runs will essentially double the service frequency along George Street between Rattray and Albany Street at no added cost.

Weaknesses

- **Cost** – The extended George and Albany Street runs combined are the longest new route option and therefore the most costly.
- **Area covered** – The directness of the two runs limits the area able to be covered by this route option, potentially reducing the appeal of the service in terms of access throughout the central city.
- **Congestion** – The overlap of the two runs may cause congestion along George Street, particularly given the uncertainty in future design and provision of stopping infrastructure.
- **Bus Hub integration** – The George and Albany Street runs do not pass through the bus hub and are therefore less likely to encourage uptake in public transport on the wider network.

4.0 Operational considerations

4.1 Vehicle requirements

DCC have put forward several ideas related to the type of vehicle they would like to see operating an inner-city bus loop service. Ideas include a vehicle that is:

- Modern
- Low emissions / electric vehicles (EV)
- Compact
- A unique / aesthetically pleasing design.

These requirements present difficulties in developing cost estimates, as pricing for EVs is changing rapidly as technology evolves. There is also a lack of information publicly available for the New Zealand context. The cost of bus procurement is likely to vary significantly based on the exact vehicle specifications and will need to be sourced via a specific request for information (RFI) to the market. Some indicative information around costs of electric vehicles and other considerations (sourced from Greater Wellington Regional Council (GWRC) and another confidential source) are presented in the following sections.

4.1.1 Procurement time and costs

Most electric buses are either custom built in China or components are imported from China or Europe and buses built in New Zealand. Importing times vary significantly but are likely to be in the range of six to nine months, with additional time required to build, fit and get COF's for vehicles before going into service.

The marginal cost of electric buses compared to diesel buses of the same size is around double. The estimated cost of an eight-metre-long electric bus would cost in the range of $700,000 - $800,000[4].

The operating costs of an electric bus are reportedly approximately 10% cheaper to operate compared to diesel.[5]

It is understood that DCC are currently working through procurement of similar electric vehicles for the library buses. As further information is gained through this process it would be useful to consider the application for an inner-city bus service.

4.1.2 Batteries and charging infrastructure

An electric bus has a battery life of around 10 years and a range of approximately 250 kilometres. Battery capacity reduces after five years. The route options tested would require a single bus to run between 160 and 235kms per day, so it has been assumed that the range would be enough for this service and additional buses would not be required. Additional busses may be needed as backup for maintenance purposes[6].

The initial cost for rapid charging infrastructure is approximately $65,000 - $80,000[7] for a 150KW charger and will need to be replaced every two-three years at half the cost of the original purchase. The cost of this infrastructure is changing rapidly.

Consideration is also needed regarding the electrical network capacity at the bus depot. If a large number of electric buses are required, it is possible that electrical demand will exceed local network capacity.

4.2 Costs

Operating cost scenarios have been developed based on the following operating parameters:

- Hours of operation – 8 hours a day, 7 days a week, 359 days a year

[4] Estimate from GWRC and another confidential source – fit out costs may be additional
[5] GWRC Sept 2020.
[6] The cost of any additional bus requirements has not been factored into costs presented in this report.
[7] From DCC Book bus RFI. There are several different options for rapid charging depending on time to charge requirement.

- Average travel speed in urban environment of 18 kph
- All route options will run in both directions

The indicative values derived are based on applying a general 10% reduction to the operating costs of diesel buses used in Study one. These are deemed appropriate, and the best available data for use for the relative comparison of options in this study. In practice, the costs of this service will be affected by specific contract terms and conditions and external factors such as market capacity and competition.

The estimated annual EV operating and capital costs for the new service options running at a 10 minute frequency are detailed in Table 9. There will also be considerable additional capital and operational costs to consider depending on the business model adopted for this service. Examples include a depot or storage location, procurement and administration, and ticketing infrastructure.

Table 9: Estimated EV annual operating and capital costs for new route options[8]

Option	Number of Buses Required	Estimated Annual Operation Cost	EV Vehicle capital cost	EV Charging infrastructure capital cost
Option 5 – Wide loop	4	$850,000	$2.8 - $3.2 million	$260,000 - $320,000
Option 6 – Narrow loop	4	$800,000	$2.8 - $3.2 million	$260,000 - $320,000
Option 7 – George and Albany Street shuttle	4	$880,000	$2.8 - $3.2 million	$260,000 - $320,000
Option 8a - George Street shuttle	2	$470,000	$1.4 - $1.6 million	$130,00 - $160,000
Option 8b – Albany Street shuttle	3	$770,000	$2.1 - $2.4 million	$195,000 - $240,000
Option 8 – Combined George and Albany St shuttle	5	$1,235,000	$3.5 - $4 million	$325,000 - $400,000

4.2.1 Key assumptions

Costs estimates have been developed using the same assumptions of cost values per in-service kilometre, in-service driver hour and peak bus requirement as those used in Study one, with a 10% reduction in vehicle operating variables to reflect the use of EVs instead of diesel vehicles. The initial values were derived from a review of recent relevant contracts and the cost reduction for EVs based on anecdotal evidence from operations in New Zealand. EV technology and the EV market is evolving rapidly compromising the level of confidence in the cost estimates. Estimates may also be affected by external factors such as the impact of Covid 19 on trade, and economic factors such as house prices and labour availability. There is also a risk that tender costs could be greater than the estimates provided within this report.

4.3 Frequency scenarios

As previously discussed, costs are calculated based on the assumption that buses will operate at a 10-minute frequency. This, however, may not be the most cost-effective interval for each route option. For example, the narrow loop will likely take a standard bus approximately 11-12 minutes to traverse.

[8] PVR only, does not include backup buses.

Two buses are required per route direction to ensure a 10-minute frequency is maintained; however, buses will have to stand down for around 8-9 minutes after completing each loop, resulting in 40% period on inactivity. By increasing the frequency slightly to around 12 minutes, only one bus will be required for each route direction. This will substantially reduce operating costs and maximise bus utilisation.

The other possibility is councillors may wish to invest heavily in the service, maximising the frequency and therefore increasing the appeal to the public. Table 10 provides a summary of possible frequency ranges, vehicle requirements and associated operating costs for each new option.

Table 10: Frequency scenarios and associated cost for new route options

Option	Frequency	Number of Buses Required	Estimated Annual Operation Cost	EV Vehicle capital cost	EV Charging infrastructure capital cost
Option 5	5-6 minutes	6	$1,270,000	$4.2 - $4.8 million	$390,000 - $480,000
	7-13 minutes	4	$850,000	$2.8 - $3.2 million	$260,000 - $320,000
	14+ minutes	2	$420,000	$1.4 - $1.6 million	$130,000 - $160,000
Option 6	4-5 minutes	6	$1,200,000	$4.2 - $4.8 million	$390,000 - $480,000
	6-10 minutes	4	$800,000	$2.8 - $3.2 million	$260,000 - $320,000
	12+ minutes	2	$400,000	$1.4 - $1.6 million	$130,000 - $160,000
Option 7	6-7 minutes	6	$1,320,000	$4.2 - $4.8 million	$390,000 - $480,000
	9-14 minutes	4	$880,000	$2.8 - $3.2 million	$260,000 - $320,000
	17+ minutes	2	$440,000	$1.4 - $1.6 million	$130,000 - $160,000
Option 8a	7-9 minutes	3	$700,000	$2.1 - $2.4 million	$195,000 - $240,000
	10-18 minutes	2	$470,000	$1.4 - $1.6 million	$130,000 - $160,000
	19+ minutes	1	$230,000	$700,000 - $800,000	$65,000 - $80,000
Option 8b	8-11 minutes	3	$760,000	$2.1 - $2.4 million	$195,000 - $240,000
	12-22 minutes	2	$510,000	$1.4 - $1.6 million	$130,000 - $160,000
	23+ minutes	1	$250,000	$700,000 - $800,000	$65,000 - $80,000
Option 8 (combined)	8-9 minutes	6	$1,470,000	$4.2 - $4.8 million	$390,000 - $480,000
	12-18 minutes	4	$980,000	$2.8 - $3.2 million	$260,000 - $320,000
	23+ minutes	2	$490,000	$1.4 - $1.6 million	$130,000 - $160,000

4.4 Service operation

As determined in Study one, the likelihood of attracting NZ Transport Agency funding for a central city bus loop service is unlikely. The key reason for this is it falls short on meeting funding strategic criteria such as inducing significant mode shift, congestion relief or filling a significant network gap. It is also likely to have a low economic efficiency (BCR).

If a service of this nature is deemed integral to the public transport network, it could be written into the Regional Public Transport Plan and potentially contracted by ORC. This would require discussion and coordination with ORC to fulfil process and contractual requirements. Alternatively, the service would need to be operated (and funded) outside the existing public transport network as an exempt service. To do this, DCC need to apply to ORC to register an exempt service, under section 134 of the LTMA. The application would be assessed on the following:

134 Grounds for declining registration or variation of exempt services

(1) A regional council may, on the grounds set out in subsection (2), decline to—

(a) register an exempt service; or

(b) record in the register a variation of the route or routes of an exempt service.

(2) The grounds are that—

(a) the exempt service, or the variation of the route or routes, is—

(i) likely to have a material adverse effect on the financial viability of any unit; or

(ii) likely to increase the net cost to the regional council of any unit; or

(iii) contrary to sound traffic management or any environmental factor identified by the regional council as important to its region; or

(b) the regional council is yet to adopt its regional public transport plan; or

(c) the regional council has adopted a regional public transport plan and it identifies the service as integral to the public transport network.

Applications for exempt services are robustly analysed and careful consideration would need to be given to the conditions stated above.

Whilst the aspiration is to operate this as a 'free' service, to complement the existing network and encourage additional uptake of public transport patronage in Dunedin, careful consideration (by DCC) would need to be given to any financial impact this service may have on regional council units before proceeding with an exempt service application.

4.4.1 Ticketing infrastructure

In addition to fare collection, ticketing infrastructure is the key mechanism for recording how many passengers use a service, where they travel to and from as well as what type of passengers (adult/child etc) use the service. For this reason, even if the service has no need to collect a fare from passengers, consideration will need to be given to how DCC will gather passenger trip data. This will be particularly important to verify the success of an initial trial and as well as gathering ongoing reporting measures for funding and investment purposes.

There is an opportunity to use the new Bee card system. This would still require buses to be wired and have the hardware installed, and the cost for this met.

4.4.2 Bus stop requirements

Section 2.5 of the Study one report provides an outline of the bus stop infrastructure currently in place in central Dunedin. Existing bus stops will cover the new suggested routes to a large extent, but as noted in this first report, there are gaps in and around the Octagon that will need to be addressed to improve access to some locations. Consideration will also need to be given to George Street as part of the planned future design and development of this area.

Given Councillors expressed an aspiration for this service to operate potentially as a 'hop-on/off, flag down' service along Princes and George Street and therefore not require a formal bus stop, further consideration will need to be given to the feasibility of this. Aspects that will need further investigation and could carry significant issues and risks include:

- Regulatory considerations
- Integration with proposed new George Street design
- Safety – both of passengers boarding and alighting as well as other road users, including cyclists
- The different requirements for mobility levels of individual passengers. How will a sight impaired person flag a bus down? How will mobility person board without the use of a kerb?
- Operational efficiency and implications for other traffic
- Information provision for passengers.

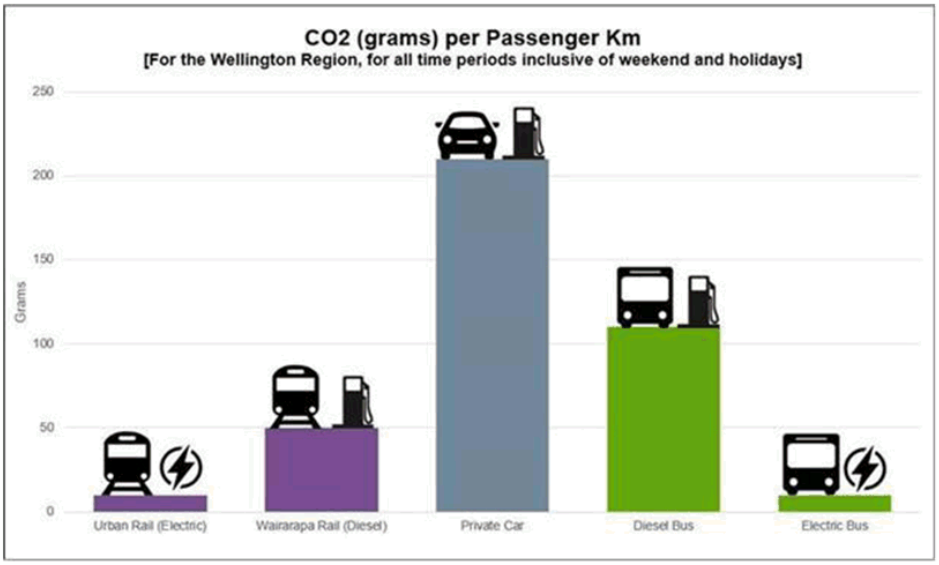
At the time of writing there is still a high level of uncertainty around the future design and function of George Street. While the design is being finalised, it is still possible to explore the potential for an inner loop service and refine operational detail and patronage understanding through a trial.

5.0 Additional considerations

5.1 Carbon footprint comparison

One clear aspiration from DCC is the new bus loop service should be clean and produce minimal carbon emissions. Figure 6 provides further detail on emissions produced by a range of transport modes. As shown, the private vehicle is the highest emitter, producing around 210 grams of CO2 per passenger kilometre. The diesel bus emits around half as much CO2, releasing 110 grams per passenger kilometre. In contrast, an electric bus produces only 10 grams of CO2 per passenger kilometre, a substantial reduction when considering kilometres travelled per year. Ultimately, use of electric buses instead of diesel would lead to a roughly 90% reduction in CO2 emissions.

Figure 6: Emissions comparison by transport mode[9]



5.2 Trial

DCC have indicated initially running the inner-city bus loop on a trial basis. Trials are a good way to test projects in a low risk low cost environment, however for this initiative there would be a high cost and high risk to carry out a trial. A trial would allow a preferred route to be tested, determine potential primary users, and create an opportunity to gauge the likely success of the service (and impact on the wider public transport network). It would help gain an understanding of the possible future demand, providing further confirmation of the optimal number of vehicles required, and inform how a service of this nature can operate as efficiently as possible. It would also help iron out any issues around the detailed operation of the service, where choke points for congestion may arise and where there may be gaps in infrastructure.

Running the trial, however, does carry a high degree of risk. Whether run as a trial or a permanent service, there is a substantial level of initial investment required to set up the business model for this service including the acquisition of vehicles and drivers to trial such a service. Given the desire to run this service with small, modern, low emission and potentially iconic state of the art vehicles, these would need to be purchased or leased in order to conduct the trial and provide a good understanding

[9] Information received from GWRC

of how it might be received by the public and test the likely operational considerations and constraints. This generates a sizeable financial risk.

There is also additional risk associated with the future development of George Street. There may be some public frustration if the trial is ceased to allow for construction, which may lead to a patronage downturn. Alternatively maintaining a bus route through construction works could lead to significantly increasing the cost of construction of George St works. With the final design and speed environment of George Street unknown at the time of writing, assumptions around route and cost variables used may arise if one of the new route options is tested and the final design of George Street does not allow for the bidirectional movement of buses.

5.3 Operating model

Further Investigation is required to determine how this service will be operated and funded. If a service of this nature is deemed integral to the public transport network, it could be written into the Regional Public Transport Plan and potentially contracted by ORC. This would require discussion and coordination with ORC to fulfil process and contractual requirements.

Alternatively, the service would need to be operated (and funded) outside the existing public transport network as an exempt service. Operating as an exempt service outside of the public transport network, with no access to the National Land Transport Fund, the DCC will be responsible for raising the capital and operational expenditure required to run the central city bus service. In addition to Council funds through rates or user pays (fares) there may be additional funding opportunities that could be explored including grants and private investment.

5.4 Funding

In addition to Council funds through rates or user pays (fares) there may be other funding opportunities that could be explored. These could centre on building a brand for the service. Using state-of-the-art vehicles and highlighting Dunedin's commitment to the environment, there is opportunity to make the service a city icon. This may then be attractive to private investors, particularly those with a sustainability interest.

The business community may also see the service's marketing and advertising opportunity appealing. With vehicles highly visible and moving around the commercial and retail precincts in Dunedin at a high frequency, vehicle advertising can reach a broad audience including pedestrians, passengers and other vehicles on the road. There are also a range of options in terms of application that would suit different levels of investor appetite. It is likely, however, that this will only make a marginal difference to the total operating cost.

Another potential funding option could be grant or special projects funding. There are several different sources for these types of funds for community and regional initiatives. Each will have their own specific criteria and will need further investigation as to the applicability for a service of this nature. The Lottery Significant Projects fund, New Zealand Upgrade Programme, Provincial Growth Fund, NZ Infrastructure Fund for Economic Recovery are some examples of funds of this nature[10]. There is significant opportunity to promote the environmental credentials as well as job generation.

5.5 Key risks

There are a number of key risks discussed throughout Study one and two that are important to consider before implementing a new inner city bus loop service. A broad overview of some of these key risks is presented below:

- Operational model – Launching the service would need to be either incorporated into the existing network or gain exemption from ORC. Both operating models require further investigation and following of due processes. Resolving this is critical to whether a service can proceed.

[10] No research has been put into the criteria for any grant funding organisations. Provided here as an example and would be subject to full investigation by the DCC.

- Trial – A trial presents significant risk as it is not able to be done in the usual low risk low cost manner.
- Cost – At this stage, the costs of procurement and operation of electric vehicles is indicative and based on available information to date. A more comprehensive RFI process is needed to gain an accurate understanding of costs.
- Vehicle procurement timeframes – An initial estimate of time needed to acquire specialised electric vehicles and charging infrastructure is around nine months. This may, however, be an optimistic estimate given the complications that could arise during the importing and building process.
- George Street design – Successfully travelling up and down George Street is dependent on the street's future design. It is possible that sections of the street may be made one way or restricted access following upgrade. In addition, costs have been determined based on a travel speed of 18kph. If the George Street speed limit is reduced to 10kph (for example), this will have implications for frequency, required numbers of vehicles and operating costs.
- Flag-down service – Councillors have expressed interest in the possibility of the bus loop being operated as a flag-down service along George and Prices Street. This is likely to create issues with traffic disruption depending on the future George Street design as well as open doors to complaints over missed pick-ups and drop offs at the wrong location.

6.0 Summary

DCC have expressed interest in pursuing the feasibility of a new inner-city bus loop service operating in central Dunedin as a standalone service. This study explores additional route options and considerations to complement the George Street discussions. Four inner city route options were developed with special consideration given to serving George Street and the retail precinct. These options range in distance and price with the least expensive narrow loop (Option six) have an estimated annual operating cost of around $805,000 and the most expensive extended George and Albany shuttle (Option eight) estimated to cost around $1,235,000.

Several other considerations have been included to stimulate discussion and inform DCC investment decision. These centre around the operational aspirations of the service including the use of modern, low emission electric vehicles suitable for the future desired form and function of George Street. The marginal cost of electric buses compared to diesel buses of the same size is around double. For an eight-metre-long electric bus the estimated cost would be around $700,000 - $800,000. The operating costs of an electric bus, however, are estimated to be around 10% cheaper than diesel.

As determined in Study one, the likelihood of attracting NZ Transport Agency funding for a central city bus loop service is unlikely. This leaves a couple of other ways the service could gain funding. If deemed integral to the public transport network, it could be written into the Regional Public Transport Plan and potentially contracted by ORC. Otherwise, the service would need to be operated (and funded) outside the existing public transport network as an exempt service. Applications for exempt services are robustly analysed and careful consideration would need to be given to all conditions outlined.

Whilst the aspiration is to operate this as a 'free' service, to complement the existing network and encourage additional uptake of public transport patronage in Dunedin, careful consideration would need to be given to any financial impact this service may have on regional council units.

DCC have indicated initially running the inner-city bus loop on a trial basis. A trial would allow a preferred route to be tested, determine potential primary users, and create an opportunity to gauge the likely success of the service. Running the trial, however, does carry some risks, including the uncertainty of the final George Street operational configuration, interruption of a trial to allow for construction, and the sizeable financial risk involved in developing a suitable business model and investing in new vehicles to conduct the trial.

6.1 Final considerations and next steps

Extensive further investigation is required before a service of this nature could be trialled or implemented. The following are examples of some of the next steps and considerations:

- Business model – if aspired to be managed by DCC, further consideration should be given to facilities and resources necessary to run the service. These may include managers, planners, bus drivers, marketing and communications workers as well as a depot for bus storage and charging.
- Legal requirements and process– DCC must obtain the necessary approval from ORC to operate an exempt service or incorporate it into their services prior to trial launch.
- Funding allocation – Exact funding requirements are likely to be highly variable depending on trial length, route option and decisions around procurement and operating model. A detailed assessment of funding requirements should be carried out when these decisions are made.
- Procurement of vehicles and charging infrastructure – A decision must be made whether to purchase or lease vehicles for the trial. It is likely to be difficult (or impossible) to acquire small electric vehicles for lease, although it may be possible to lease similar sized diesel buses. If DCC chooses to immediately pursue purchasing of electric vehicles and charging infrastructure, a lead in time of at least nine months should be expected with the possibility of a larger timeframe if complications arise during importing and bus building.
- Backup plan for trial vehicles – If the bus loop trial proves unsuccessful, it may be necessary to have a plan in place that considers what to be done with purchased vehicles. It may be possible to repurpose or resell these vehicles if needed. This is unlikely to be an issue if vehicles are initially leased.