DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

SINGLE STAGE BUSINESS CASE FOR

Dunedin central city bike hubs

April 2023

PREPARED FOR:
Dunedin City Council
PREPARED BY:
WSP in association with ViaStrada Limited

WSP VIASTRADA

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Glossary

Term	Meaning
BCA	Benefit-Cost Analysis or Business Case Approach (context sensitive)
CCTV	Closed-circuit television (security cameras)
CPTED	Crime Prevention Through Environmental Design; a process of designing public spaces to minimise opportunities for (or perception of) assault, harassment, and other anti-social behaviours and crimes
LCLR	Low-cost Low-Risk funding category
MCA	Multi-Criteria Assessment
Micro-mobility	Small, electrically powered transport devices (e-bikes, e-scooters, mobility devices) source: Waka Kotahi Research Report 674 (Beca, 2021)
NDH	New Dunedin Hospital
NLTP	National Land Transport Programme
QoS	Quality of Service for people on bikes, as defined by Auckland Transport
SDHB	Southern District Health Board
SFDT	Shaping Future Dunedin Transport Programme Business Case
Utility trip	A trip taken to get from Point A to Point B e.g., commuting to work, shopping

Executive Summary

The Dunedin Central City Bike Hubs project is one of seven Dunedin City Council (DCC) projects from the "Shaping Future Dunedin Transport" Programme Business Case (PBC). This Single-Stage Business Case (lite) has been completed to determine secure bicycle and micro-mobility parking needs and end-of-trip provision requirements within the central city of Dunedin.

DCC People's Panel Cycle Survey in 2021 asked respondents to determine their usual transport mode to work and for other activities. 9% of respondents currently bike and 7% of respondents use an e-bike. When asked what other ways respondents would like to travel, 43% would like to bike with 46% of these choosing e-bike as an alternative transport mode they would like to consider. When asked what things would encourage more cycling, 22% of respondents picked secure cycle parking.

An international literature review has been undertaken to determine three types of bike hubs and associated end-of-trip facilities: satellite pods, connecting hubs and major hubs. The types are defined in section 3.1.1. Public engagement was undertaken to understand the reasons why people choose not to commute by bike and to understand what people value in regard to parking type, location, access and end-of-trip facilities.

A range of possible sites were determined by stakeholders and following public engagement. As the project is being funded from the Low-Cost Low-Risk (LCLR) work category, implementation is planned within this National Land Transport Plan (NLTP) funding period (2021-2024). This means sites already owned by DCC, or key partners have been given priority to ensure they are operational as soon as possible to help mitigate the disruption impact of the New Dunedin Hospital.

Additionally, sites have been identified as candidates for future bike hubs in the medium term (3-10 years), as well as sites for new or improved bike stands. No major hubs have been identified during this process and DCC should continue to consider sites as they become available, particularly in the Stuart Street/Cumberland Street and Dunbar Street areas. The list of preferred locations are included in Table 1.

The preferred delivery option is to progress as many small and medium scale hubs as possible using a combination of:

- working with a commercial supplier to provide enhanced security pods of 5 or more stands
- and to provide two to five secured hubs either as standalone structures or within parking buildings.

When combined, satellite pods can form an enclosed connecting hub (on street); or used without a roof inside a parking structure.

Table 1: short list of connecting / major bike hub sites

Zone	Site location	Site address	Priority in zone	Justification
North	Otago Museum	419 Great King Street	1	Connecting hub; standalone structure in road reserve, open space, or within a building
	Hunter Centre carpark	279 Great King Street	2	Standalone connecting hub
Central	Lower Moray Place carpark	414 Moray Place	2	Indoor connecting hub; imminent earthquake strengthening allows time to plan and design
	Building between one-way pair	Lower Stuart Street	1	Seek a major hub in a building between Stuart, Cumberland and Dunbar streets

Zone	Site location	Site address	Priority in zone	Justification
South	Queens Garden SH1	Dowling/Rattray	1	Standalone connecting hub; work in with ACC and toilets team

There were a number of sites that were excluded as a result of the multi-criteria analysis (MCA) but still considered a high priority, the following sites are the top of the list for a satellite relocatable pod:

- 340 Great King Street cul-de-sac (Physiotherapy carpark or on-street space)
- SDHB Kindy along Great King Street, just north of Hanover Street
- Harrop Street carpark, serving the Town Hall
- Under the Jetty Street overpass on Vogel Street.

It is recommended that Council:

1. Implement standard cycle stands at recommended short-stay locations.
2. Engage with Locky Dock for:
    a. integration of off-the-shelf products with the proposed Dunedin-specific modular bike hub design; and
    b. engagement with their industry partners (e.g. The Warehouse, Countdown etc) for additional sites where higher security and better level of service cycle parking could be implemented.
3. Procure design-build services for the indicative modular bike hub designs, including the potential for counters, displays, and lighting[1] connected to mains power for connecting hubs.
4. Determine whether the City's CCTV system can support additional cameras and, if so, specify these for the proposed bike hubs.
5. Engage with property owners and tenants of the preferred site locations, including the Otago Museum, to confirm site specifics.
6. Continue to investigate a major hub location between Stuart, Cumberland and Dunbar Streets, likely to be in an existing privately owned building.

[1] very low power Internet of Things (IoT) devices such as 14 W video counters are now commercially available; such low power amenities could make the satellite pods easier to implement and move without having to connect to mains power.

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1 Purpose

The purpose of this Single-Stage Business Case (Lite) is to explore bicycle and micro-mobility parking and end-of-trip provision within the central city of Dunedin.

2 Strategic case

2.1 Strategic context

The Central City Bike Hubs project is one of seven DCC projects that were recommended in the "Shaping Future Dunedin Transport" (SFDT) Programme Business Case (PBC) completed in late 2021. SFDT was undertaken by the Connecting Dunedin partners (Dunedin City Council, Otago Regional Council and Waka Kotahi NZ Transport Agency) and aims to improve the city's transport system to support the location of the New Dunedin Hospital (NDH), and to ensure a future focussed, accessible transport system that enables placemaking and liveability outcomes for the city.

The project is included in the Otago Southland Regional Land Transport Plan (2021-27) and is well aligned to the 30-year vision of the Otago Southland Regional Land Transport Plan: *"A transport system providing integrated, quality choices that are safe, environmentally sustainable and support the regions wellbeing and prosperity."* The project is also aligned to the objectives of the RLTP: connectivity and choice, environmental sustainability, and future focussed.

The Central City Bike Hubs project is included in the DCC 10-Year Plan (2021-2031) and aligned with the Dunedin City target of achieving net carbon zero by 2030.

The project is currently included in Waka Kotahi's NLTP 2021/24 as a Low-Cost Low-Risk project.

2.2 The case for change

2.2.1 Problem or opportunity to be addressed

The DCC People's Panel survey shows that one of the key barriers for people to begin commuting by bike is a lack of safe and secure parking and end-of-trip facilities. The current facilities mean fewer people are likely to commute to work/shops on bikes due to the lack of secure parking.

There are approximately **650 public cycle parking spaces** at 65 locations across the central city (source: Council GIS) with **180 spaces occupied** (28% occupation rate) according to a mid-morning weekday survey undertaken in March 2022 as part of this work. Another **40 bikes** were found to be locked to street-posts and other street furniture. Surveys (summarised in Appendix F) indicate that people often cannot find parking in the locations they need, and are concerned about the lack of secure parking.

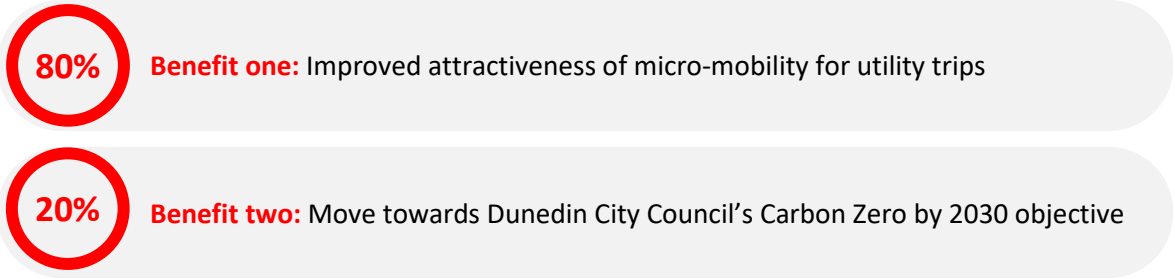
Key stakeholders gathered together on the 31st of March 2022 to gain a better understanding of current issues. The stakeholder panel identified and agreed the following key problems:

Problem one: Limited undercover secure bicycle and e-scooter parking in the right places is reducing the number of people riding into the central city

Problem two: The lack of end-of-trip facilities (lockers, showers) is reducing the number of people riding into the central city.

The investment logic map is attached as Appendix B.

The potential benefits of successfully addressing these problems were also developed and agreed upon. The stakeholder panel identified the following potential benefits:



The benefit map with the linkages to investment benefits and measures (KPIs) is also presented in Appendix B. Section 2.2.4 discusses the benefits and measures in more detail.

2.2.2 Investment description

Higher security micro-mobility parking and end-of-trip provision within the central city of Dunedin.

2.2.3 Scheduling / programming

Opportunities that can be implemented within the next three-year period have been prioritised to align with the Low-Cost Low-Risk (LCLR) funding round and to ensure they are operational as soon as possible to help mitigate the disruption impact of the New Dunedin Hospital.

Additional sites that have been identified as candidates for future bike hubs in the medium term (3-10 years) and sites that have been identified for new or improved bike stands are included in the Information Sheets and Appendix C.1. The list is not a comprehensive forward works programme for cycle stands but does document additional future opportunities identified as part of this project.

2.2.4 Benefits delivered from addressing the problem or opportunity

The following benefits (Table 2-1) have been identified. The key measures are presented in **bold** and are further expanded upon in the benefits map (Appendix B):

Table 2-1: wider benefits

Benefit owner	Dunedin City Council Transportation Planner	
Transport outcome	**Benefit cluster**	**Benefit measures**
Healthy and safe people	Human health	**Physical and mental health benefits from active modes (3.1.1)** Physical health benefits from improved air quality
	Perception of safety	Social connectedness **Perception of safety and ease of cycling (2.1.1)** Reduction in Isolation, severance
Economic prosperity	Productivity and utilisation	Level of service and risk – improved security Access to key economic destinations (all modes) (5.2.6)
	Resource efficiency (wider economic benefit)	Less money is spent on motoring and therefore available for local reinvestment (user defined)
Environmental sustainability	Greenhouse gas emissions	**Mode shift from single occupancy private vehicles (8.1.2)**
Inclusive access	Access to opportunities	Cost of access to key destinations - all modes (10.2.8) **Impact on mode choice – new users of bike hubs (10.2.1 – user modified)** Pricing – (cycling is) lower cost than driving, enabling low income users to access more destinations for less cost (10.2.9 – user modified) Access to key social destinations (all modes) Social connectedness, isolation, and severance Impact on townscape – the satellite pods and stand-alone hubs have been aesthetically designed to enhance the urban environment

Numbers presented in parentheses refer to the Land Transport Benefits Framework.[2] Other "wider" benefits aligned with the Non-monetised benefits and costs manual are described in section 3.6.

2.2.5 Alignment of the identified benefits to the problem or opportunity statement

The 2013 DCC People's Panel survey shows that one of the key barriers for people to begin commuting by bike is a lack of safe and secure parking and end-of-trip facilities. Of the 504 people who completed the survey 75% of people used a private motor vehicle as their main mode of transport, with 5% using a bike as they main mode of transport. When asked what mode they would most like to use for daily activities, 25% of respondents chose bicycle.

[2] https://nzta.govt.nz/assets/planning-and-investment/docs/Land-Transport-Benefits-Framework-overview-table.pdf

The DCC People's Panel Cycle Survey was undertaken again in 2021. In the 2021 Cycle Survey respondents could pick more than one mode as their usual transport to work and for other activities. 9% of respondents currently bike and 7% use an e-bike. When asked what other ways respondents would like to travel, 43% would like to bike with 46% choosing e-bike as an alternative transport mode they would like to consider. When asked what things would encourage respondents to cycle more, 22% of people picked secure cycle parking.

Table 2-2: how benefits link back to the problem statements

Benefit	Links to problem statement
Improved access to social and economic opportunities	The higher security of bike hubs enables more people to choose cycling – a lower-cost mode of transport compared to driving. They can then allocate more of their budget to other activities. People without the financial resources to operate a vehicle or take the bus (and live too far to walk) can access the social and economic opportunities afforded by the central city. Cycling and scooting also permit more ad-hoc social interaction as it is easier to stop and talk to other people compared to driving.
Impact on perceptions of safety and security	Improving cycle parking provision and end-of-trip facilities that consider CPTED[3] principles (including access control, CCTV, lighting etc) will reduce risk and the perception of theft. Improved security is likely to foster social connectedness. As fewer bikes are parked on an ad-hoc basis, there will also be a reduction in obstructions for pedestrians.
Improved health and wellbeing	Improvements to cycle parking with safe and secure facilities will attract new users. These new users will improve their mental and physical health through increased exercise.
Impact on greenhouse gas emissions	Improving cycle parking provision and end-of-trip facilities will increase the number of people commuting to work by bike and reduce the number of commuters driving to work. As the number of commuter cyclists increases, the "safety in numbers" effect[4] will result in mode shift and reduced vehicle kilometres travelled (VKT). This in turn will reduce greenhouse gas emissions.

2.2.6 Stakeholder and community engagement

A copy of the Communications and Engagement Plan can be found in Appendix E. The full outcomes of the engagement can be found in Appendix F. A summary is presented below in Table 2-3.

Table 2-3: stakeholders and engagement summary

Stakeholder	Summary of engagement outcomes
Aukaha	Cultural values assessment of sites (Appendix I). Focused workshop with representative to review the concept pod/connecting hub design.

[3] CPTED (Crime Prevention Through Environmental Design) principles are described by the Ministry of Justice and the Ministry for the Environment: https://www.justice.govt.nz/assets/cpted-part-1.pdf

[4] https://injuryprevention.bmj.com/content/25/3/236

Stakeholder	Summary of engagement outcomes
Internal Dunedin City Council teams • Transport Planning (Lead) • Road Safety • Property (Public Toilets & Property) • Central City Plan • Comms and Engagement	The Retail Quarter Upgrade will provide on-street cycle stands; may be opportunities for the bike hub project to provide facilities off street (alleyways/behind or within buildings) or on adjacent streets. The public toilet team is looking to reconstruct toilets lost at Queens Gardens. This could be an opportunity to combine bike hub and end-of-trip facilities.
Otago Regional Council (ORC)	As public transport provider for Dunedin, ORC is supportive of encouraging mode shift; sees opportunities in flexible ways of traveling e.g., bike to work and store securely overnight and catch bus home (changing weather).
Waka Kotahi NZ Transport Agency	Funding partner. As project is to be funded from the LCLR fund, a business case is not a requirement for funding. Need to ensure we met the criteria for funding (availability requirements). Recommend also improving existing sites and providing additional stands where current ad-hoc parking is occurring.
Spokes Dunedin	Dunedin cycling advocacy group participated in the ILM workshop and supportive of the project.
Southern District Health Board (SDHB)/Ministry of Health/New Dunedin Hospital	Updates on construction progress and timing. Public bike parking and end-of-trip facilities planned for new Hospital buildings; however, more than 3+ years away. SDHB have 5-6% staff who cycle to work. Existing parking areas have design flaws and are often full. A number of SDHB sites were added to the long list following conversations with them.
University of Otago	University focus is on providing staff and student bike parking; however, sites are open to the public as well. Interested in the possibility of temporary/moveable hubs that could be trialled; syncing the design.

Public engagement was undertaken to inform the latent demand for cycle parking, to understand the reasons why people choose not to commute by bike and to understand what people value in regard to parking type, location, access and end-of-trip facilities.

Social Pinpoint was used for the engagement, which ran for 4 weeks during June/July 2022. The Social Pinpoint tool consisted of a survey along with an interactive map where people could drop pins to show where they park their bicycle and where they would like to park.

Around half of the people that responded to the survey currently travel into the central city by bike most days or a few days a week. The most common reasons for not biking into the central city were convenience/personal circumstances, safety concerns about the cycling network or parking, and Dunedin's topography.

The engagement showed there is a clear desire from the community for improved safe and secure parking. The key features of a hub should include:

- Close to key locations and distributed across the central city
- Wayfinding signage and route planning maps
- Bike maintenance/repair tools
- Suitable for a range of bike types e.g. e-bikes, cargo bikes

- Secured entry and exit
- Allowing visitors and casual users to use secure bike parking facilities

A prospectus was also developed and presented to businesses who could be interested in hosting a hub or operating a business within or alongside a hub. There were two business responses to the prospectus, but neither has generated a viable proposition as yet. A copy of the prospectus can be found in Appendix E, and is anticipated to be re-used when additional opportunities are identified to partner with the private sector.

3 Economic case

This section outlines the options analysis undertaken and the preferred option. The long list considered and the long list to short list process is included in Appendix C.

3.1 Programme options

3.1.1 Defining a bike hub

The project evolved from an initial idea of three bike hubs, one in the north central, one centre city, and one in south central city. The first task of the project was to define the term "bike hub" based on a literature review. The research found that the term is used differently around the world:

- In Auckland, volunteers help disadvantaged people fix their bikes at "community bike hubs"
- In California's Bay Area, BikeHubs (aka "bike stations" or "mobility hubs") are co-located with light rail stations and offer parking, rentals, servicing, and information
- Transport for London manages the operation of five Cycle Hubs co-located with airports and train stations and have parking, servicing and information

Based in part on the research, the project team developed a classification scheme with three terms as defined and illustrated in Figure 3-1.

Further description follows on the next page.

	1 SATELLITE PODS		2 CONNECTING HUBS		3 MAJOR HUBS
	Docks	Lockers & hangers	Bike shed & shelters	Bike cages & rooms	Bike stations
DESCRIPTION	Inbuilt locking system - no user lock required	Encloses one or two bikes together	Single purpose (bicycle parking) stand-alone structure	Single purpose (bicycle parking) space within a multi-purpose building	A multi-purpose facility within a building
LOCATION	On street - usually relocatable	On street - relocatable	On or off street often an outdoor car park	In a building often an indoor car park	In a building often at street level
CAPACITY	5 – 10	1 – 2	10 – 60	25 - 100	50 - unlimited
WEATHER PROTECTED	Optional	Yes	Yes	Yes	Yes
SECURITY	In-built locking per bike	Locking (inbuilt or user provided) per enclosure	Optional – may be open or have a gate; CCTV optional	Limited access, CCTV optional	Controlled access by station staff
RELATED SERVICES[1]	No	No	No	No	Optional

Figure 3-1: types of bike hubs

Satellite pods

Satellite pods are smaller, relocatable facilities that may not have a complete roof. Locking could be in-built through each stand. Examples include Locky Docks and the relocatable units used in Christchurch, Wellington, Auckland and Palmerston North.

Connecting hubs

These could be either bike sheds and shelters (single purpose standalone structures) or bike cages and rooms (single purpose spaces within a multi-purpose building). Bike sheds and shelters are on or off street (often in an outdoor car park), can provide for 10 – 60 bikes and may have a gate or CCTV. Bike cages and rooms are in a building (often an indoor car park), can provide for 25 – 100 bikes and are limited access with CCTV as a security option. Both facility types are weather protected and do not include related services.

Major hubs

A major hub is a multi-purpose facility within a building, often at street level. Capacity can be anywhere from 50 with the maximum capacity unlimited. The facility is weather protected, security controlled by staff and related services are optional.

Design features for all site types

All hubs will be designed to co-ordinate with the central city design aesthetic (future focussed) and the design is being conducted with Aukaha mana whenua. CPTED and safety in design principles are incorporated in the modular elements and site-specific implementation. Accessible wayfinding/ information is planned at all sites. Where co-located with toilets (the Queens Gardens site), these will be accessible. Where public seating and other amenities are included, these will be varied height. The cycle parking itself will accommodate larger bikes (cargo, three-wheeled) on the end stands.

3.1.2 Iterative development of the design through site planning

The site locations determined the type of facility e.g., a development site should not be constrained by substantial investment and therefore would be best served with relocatable “pod” parking. Alongside this demand modelling helped informed the site type, and consideration was also given to the site type in relation to surrounding bike parking opportunities. The project team found it difficult identifying a site for a “major hub” as no suitable space within a building was discovered during the business case.

3.1.3 Delivery options

Two streams of options were developed – one regarding programme delivery, and the other regarding bike hub locations. The programme delivery options are listed in Table 3-1.

Table 3-1: short-term programme delivery options

Option	Description
Do minimum	Continue providing on street standard bicycle parking stands
Option 1	Work with a commercial supplier to provide enhanced security pods of 5 or more stands per location
Option 2	Provide between two and five "connecting hubs" consisting stand-alone or secured spaces within existing city parking structures
Option 3	Continue property and operator negotiations to find a site for a major hub co-located with other complementary services inside an existing building
Option 4	Progress as many small and medium scale hubs as possible using a combination of Options 1 and 2, i.e.: • develop a modular, relocatable satellite pod (potentially with technology from existing commercial suppliers) • when combined satellite pods can form an enclosed connecting hub (on street); or used without a roof inside a parking structure

After the longlist was put together, DCC and the consultant team agreed that a mixed model of provision (i.e., Option 4) was preferred as it offers the most flexibility in responding to a changing central city context. Therefore, no formal evaluation of these delivery options was undertaken and instead the focus was on site (location) selection assessment.

No suitable major hub site was found during the business case due to the lack of available indoor sites within the central city. It is recommended that over the medium to long term, the recommended delivery option should be extended to include the investigation of a major hub between Stuart Street /Cumberland Street and Dunbar Street, in a Council owned building or private building. This area was selected due to the number of public requests, the proximity to existing bicycle shops, and the lack of existing long-stay cycle parking compared to other parts of the central city.

3.2 Site location options

3.2.1 Site location long list generation

A broad range of sites were identified through:

- known opportunities provided by partners and stakeholders
- Social Pinpoint (the public placing pins on an online map)
- known land use change/ future developments
- mapping the long list and determining gaps in the network

The process taken to sift the long list options generated can be found in Appendix C and is illustrated below in Figure 3-2.

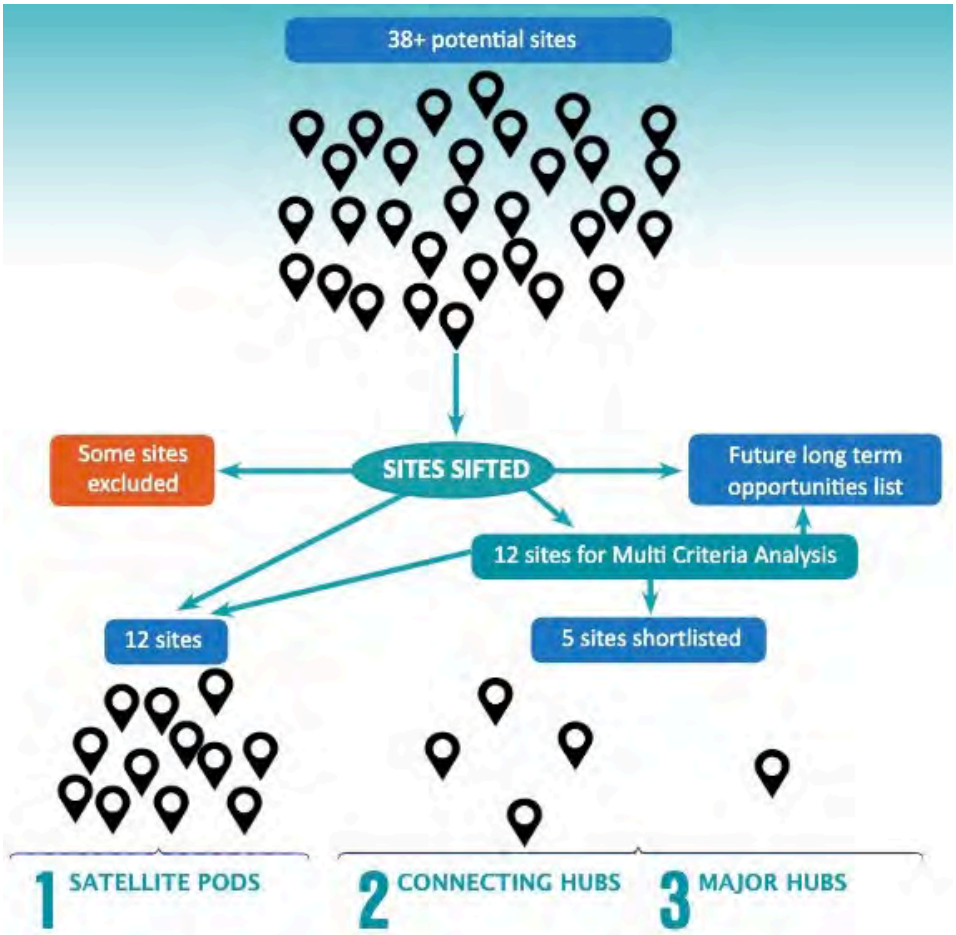


Figure 3-2: bike hub short list process

Please refer also to the separately available site locations information sheet pack.

3.2.2 Long list to short list assessment

The problem and benefit statements and the critical success factors (scheduling/programming, affordability, and achievability) were integrated into the decision tree to help determine:

- sites that could benefit from bike stands or additional stands e.g. sites that have less demand or shorter-term parking needs
- sites that can't be implemented within 3 years. These were retained on the long list and suitability as a relocatable hub was considered
- if sites could be implemented within this 3-year funding cycle. These were given a higher long list priority weighting

Further detail about the longlist-shortlist process can be found in Appendix C Site options analysis.

3.2.3 Incremental analysis

Incremental analysis[5] of the programme delivery long list options shown in Table 3-1 has not been completed as demand modelling (Appendix D) and economics have only been completed for the preferred option.

3.3 Details of preferred option

3.3.1 Delivery approach and locations

The preferred option is Option 4 hybrid delivery at the five sites listed in Table 3-2.

The aim is to progress as many small and medium scale hubs as possible using a modular, relocatable satellite pod (potentially with technology from existing commercial suppliers). When combined, satellite pods can form an enclosed connecting hub (on street); or used without a roof inside a parking structure

It is recommended that if final prices from suppliers means that the budget does not allow for connecting hubs, all short list sites should have a minimum level of provision (i.e., satellite pods). Then additional satellite pod, roof and perimeter access controls can be added later.

Table 3-2: short list of major and connecting hubs after logic check

Zone	Site location	Site address	Priority in zone	Justification
North	Otago Museum	419 Great King Street	1	Connecting hub; standalone structure in road reserve, open space, or within a building
	Hunter Centre carpark	279 Great King Street	2	Standalone connecting hub
Central	Lower Moray Place carpark	414 Moray Place	2	In building connecting hub; imminent earthquake strengthening allows time to plan and design
	Building betw'n one-way pair	Lower Stuart Street	1	Seek a major hub in a building between Stuart, Cumberland and Dunbar streets

[5] As described in the Waka Kotahi Monetised Benefits and Costs Manual (MBCM), Incremental analysis is performed to evaluate differences in cost-benefit appraisal among mutually exclusive investment options, such as proposed changes in scope to a preferred option. It is not performed where the options share common elements or for Low-Cost Low-Risk (LCLR) funded projects.

South	Queens Garden SH1	Dowling/Rattray	1	Standalone connecting hub; work with ACC and toilets team

Based on this work and long list sites excluded from the multi-criteria analysis (MCA) but considered high priority, the following sites that did not make it into the major and connecting hubs list in Table 3-2 are the top of the list for the satellite relocatable pods:

- 340 Great King Street cul-de-sac (Physiotherapy carpark or on-street space)
- SDHB Kindy along Great King Street, just north of Hanover Street
- Harrop Street carpark, serving the Town Hall
- Under the Jetty Street overpass on Vogel Street

3.3.2 Satellite pod supplier Locky Dock

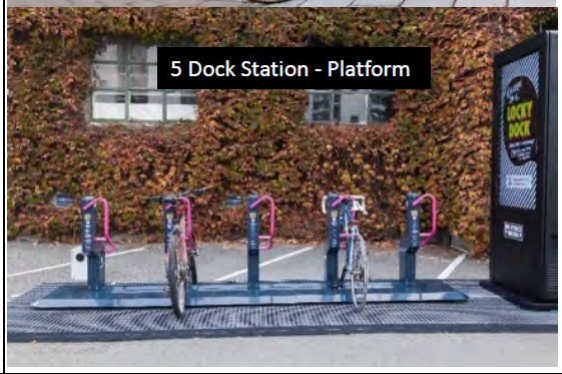
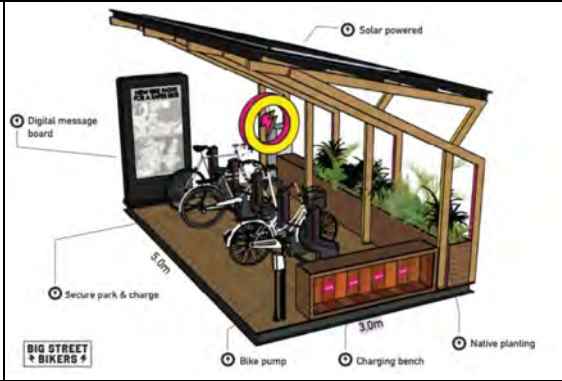
Locky Dock provide a secure locking system that are locked and unlocked by the user using the Locky Docks app or potentially public transport card or bank card. While they do not currently operate in Dunedin their products are used in centres around NZ to provide lockable bike parking stations, security technology and data collection. A recent study conducted by Sense Partners showed that a network of 10 Locky Docks in Christchurch[6] resulted in $32.8 million in benefits over 30 years and 250,000 vehicle-kilometres travelled reduced.

A minimum of 10 stations is required to ensure that local staff can be employed for maintenance and operation of the sites. In our discussions with Locky Dock and the University of Otago they have indicated that they are working through planning processes to implement five Locky Docks within the University Campus. Locky Dock also have national agreements with Countdown owned Countdown Supermarkets (e.g. non franchised stores) and The Warehouse Group. In Dunedin they are expected to be installed at both Countdown Andersons Bay and The Warehouse. Locky Docks are working with Countdown nationally which other sites can be implemented. No additional Dunedin Countdown sites (eg. Central) are expected to be implemented in the next three year period.

Locky Dock offer a range of products and operating models from stand-alone open air stations, covered urban parklets and locking systems for use on existing structures. The available Locky Dock products are summarised in Table 3-3 below:

[6]Locky Dock net benefits at least $32m A Cost Benefit Analysis, Sense Partners (2022)

Table 3-3: Locky Dock Options

Options	Description	Example
Stations	Either placed on a mesh platform or a steel plate (embedded) Mains powered With or without advertising. Advertising can be third party or Council media. Security provided through locking mechanism accesses via public transport card With or without charging points Data collection of occupancy/use	 
Urban Parklet	Standalone structure Partially covered with a roof Solar and mains powered Security provided through locking mechanism accesses via public transport card With or without charging points Data collection of occupancy/use	
Lock system for existing structures	Ability to use Locky Dock technology for access control of existing closed bike parking. This allows data on use/occupancy to be gathered. This is currently being explored for New Plymouth District Council	

DCC could either lease the infrastructure from Locky Docks or purchase the units outright. The inclusion of a digital display would allow for a media subsidy on the cost; alternatively, docks without the display can be leased or purchased outright. If the docks are purchased by Council there are operational costs associated with customer relations and maintenance (graffiti, cleaning).

The process Locky Dock will undertake is to complete an assessment of the site and determine a cost to Council. Locky Dock will review this report along with the current and future cycling network.

Data collected by the Locky Dock technology allows for occupancy and use to be collected. This data would help inform Council's future expansion of existing sites as occupancy increases, and help to determine when additional satellite pod sites may be required.

Locky Dock manages the day-to-day operation and maintenance of their docks on behalf of Council and through their 0800 number.

3.4 Economic analysis of the preferred option

The benefits are based upon the demand modelling (Appendix D).

Table 3-4: demand and benefit assumptions extracted from the full BCA workbook

Demand calculations		
Working days		250
Trips per day	Reflects roundtrip	2
Number of Satellite hubs		13
Number of people using each satellite (avg/day)	Average/day	
Number of people using all satellites (avg/day)	Average/day	
Patronage at Major hub (avg/day)	Scenario 3 - Number of major hubs:	1
Patronage at Connecting hubs (avg/day)	Scenario 3 - No. of connecting hubs:	4
Estimated usage (total avg/day)	Sum of satellite and hubs patronage	
Benefit calculations	Assumes all sites implemented	
Percentage of patrons who are new users *scenarios are linked to all other blue highlighted assumptions and flow through to the sensitivity testing*	Low estimate	5%
	Medium estimate	7.5%
	High estimate	10%
New km travelled by bike		5%
		7.5%
		10%
Health benefit values per user, per km *(MCBM page 42 table 10)*	Electric bikes	$1.00
	Traditional bikes	$2.20
Bike fleet composition *(intercept survey 2:7 ratio)*	Electric bikes	22.2%
	Traditional bikes	77.8%
Health benefit	Electric bikes	5%
		7.5%
		10%
	Traditional bikes	5%
		7.5%
		10%
	Total	**5%**
		7.5%
		10%
Average cost of a car trip 2022 (NZD) *Household travel surveys Te Manatū Waka Clean car import standard Economic impact of NZ post 2020 climate change*	Avg km travelled per car trip	10
	Avg emissions per km (g/km)	171
	Avg emissions cost per car trip (tonne)	0.00171
	Cost of emissions 2022 (NZD/t)	$30
	Cost per km	$0.0513
Average km travelled per bike trip		4
Emission reduction benefit		5%

	Traditional and electric bikes assumed the same	7.5% 10%
Vehicle cost per km *IRD NZ*	All car types (< 1400 km/ year/person)	$0.83
Vehicle costs not incurred (mode shift)	All car types	5% 7.5% 10%
TOTAL BENEFITS		**5%** **7.5%** **10%**
Cost scenarios		
Capital costs - 2023 (cycle pod with ramp)	Low	$35,000.00
	Medium	$40,000.00
	High	$50,000.00
Major hub cost	Provisional sum	$100,000.00

Three scenarios (low, expected, high) are explored for demand and costs; other assumptions include:

- Operational costs are based upon figures provided by Locky Docks; a further $18,000 every ten years is allowed for renewals of each modular pod containing any stands or Locky Docks
- Benefits are proportioned over the implementation years based on MEDIUM demand
- Satellite pods conservatively attract two daily users on average (capacity of 8 to 10 per unit)
- 4% discount rate, 40 year analysis period

A separate spreadsheet is available with full details and workings. The results of the analysis show:

Table 3-5: economic analysis for medium demand - medium cost scenario

NPV	Benefits	$3,967,452.47
	Costs	$1,280,476.96
BCR		3.1
IRR		18%

3.5 Sensitivity analysis

Sensitivity analysis has been carried out to test how sensitive the assessed benefits and costs are to change. The outputs for each sensitivity test are documented in Table 3-6 below:

Table 3-6: sensitivity tests

Sensitivity scenario	Sensitivity test	Base BCR	Sensitivity value BCR
Total implementation cost	Total implementation costs through to completion increase by 25% - high cost scenario	3.1	2.6
	Total implementation costs through to completion decrease by 25%	3.1	3.4
Demand / uptake	Demand at connecting / major hubs is 36% lower than expected (183 daily users instead of 249)	3.1	2.3
	Demand at connecting / major hubs is 27% higher than expected (316 daily users instead of 249)	3.1	3.9

Discount rate	The discount rate applied to benefits is decreased to 3%	3.1	3.5
	The discount rate applied to benefits is increased to 6%	3.1	2.5

3.6 Non-monetised benefits

Some benefits and costs do not have allocated monetary values due to complexity, inability to calculate parameters, qualitative nature and more. Figure 3-3 illustrates this concept.

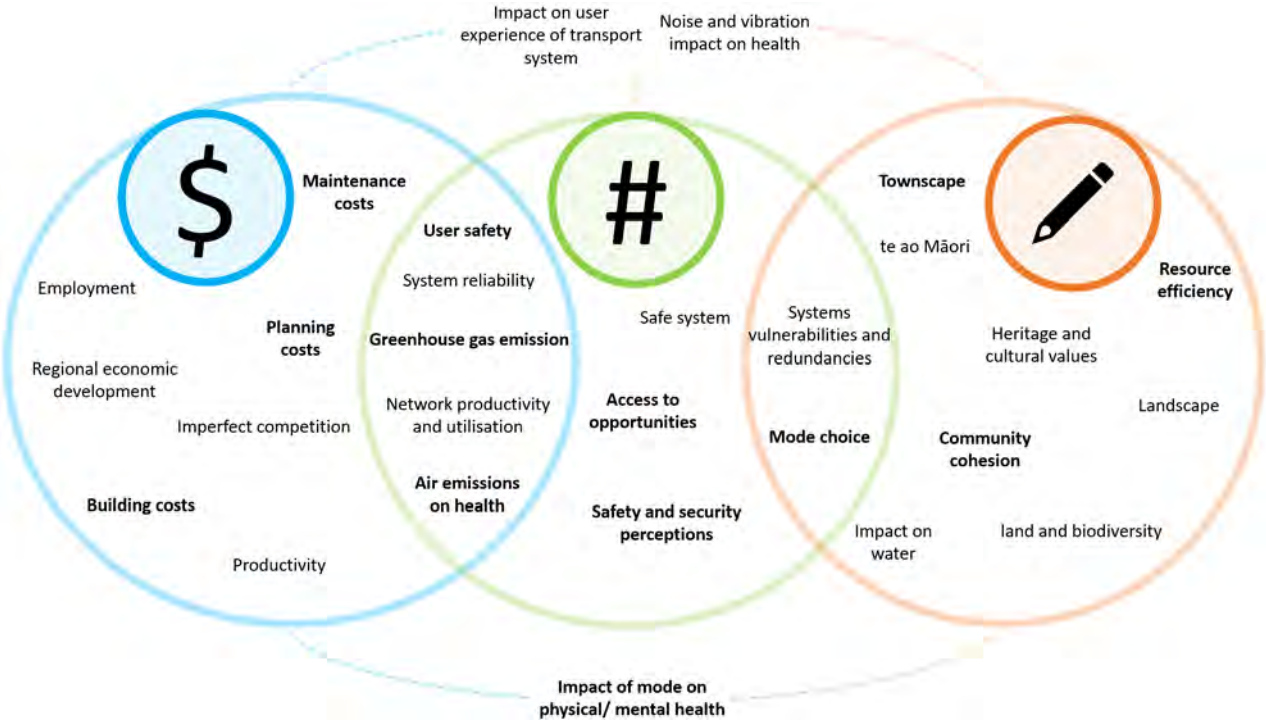


Figure 3-3: land transport benefit framework aspects that bike hubs can impact (in bold)

Changes in perceived safety are classed as improvements impacting health, safety, security, and subjective wellbeing, as summarised along with other non-monetised benefits in Table 3-7.

Table 3-7: relevant non-monetised benefits and costs as detailed in the non-monetised benefits manual and the Land transport benefits framework and their measures

Benefit category	Benefit cluster	Benefit	Type	Proposed benefit measurement	
				Name	Description
Health, safety, and people	Perception of safety	Perceptions of safety and security	Mixed methods	Access perceptions	Perception of safety and ease of walking and cycling
	Human health	Impact of mode on physical and mental health	Qualitative	Anecdotal narratives from users. Other quantitative measures of health impacts already captured in monetised methods.	
Inclusive access	Access to social and economic opportunities	Mode choice	Quantitative and qualitative	Cost of access to key destinations – all modes	
		Access to opportunities	Quantitative	Access to key social	Proportion of population living

Benefit category	Benefit cluster	Benefit	Type	Proposed benefit measurement	
				Name	**Description**
				destinations (all modes)	within travel threshold of key social opportunities by different modes in the morning peak.
		Impact on community cohesion	Quantitative and qualitative	Through a survey or in person questionnaire, data on the community's social connectedness, feelings of isolation and severance and access to key social opportunities (including education, health care, supermarkets) by different modes. Pre and post build data sets can be compared to show impact of bike hubs.	
		Impact on townscape	Quantitative and qualitative	A desktop analysis of how bike hubs influence the urban form (and urban development), character, place, amenity, and quality of the built environment.	

4 Commercial case

When was your procurement strategy last approved by Waka Kotahi	DCC's procurement strategy was submitted for endorsement February 2023. DCC will follow this strategy for all professional and construction services for this project.
Briefly describe the procurement approach and how it aligns to the organisation's approved procurement strategy	The implementation of Bike Hubs is not considered to present any significant risk or complexities to the other major investment partners involved. Detailed design work may be conducted by public transport shelter manufacturers and commercial suppliers of higher security bike parking pods. It is anticipated that procurement construction services will commence before the end of the 22/23 financial year. The cost estimate has been developed based on WSP's experience and is indicative. A final cost estimate will be based on open market competitive tender with a minimum of three conforming tenders. DCC will provide a regular update on the SFDT programme to Councillors in March 2023.

5 Financial case

Council's Long-Term Plan has allocated $200,000 for planning in the 2022/23 financial year, and then $750,000 capital investment per year for each of the following three years. Ongoing operational costs (maintenance, power, property leasing etc) are proposed to be covered within existing OPEX budgets (such as public transport shelter or central city footpath cleaning).

Depending on the final form of the major hub, operational costs for leasing space, IT support and staffing may require a dedicated line item in the budgets. Capital expenditure costs in the following table are based upon:

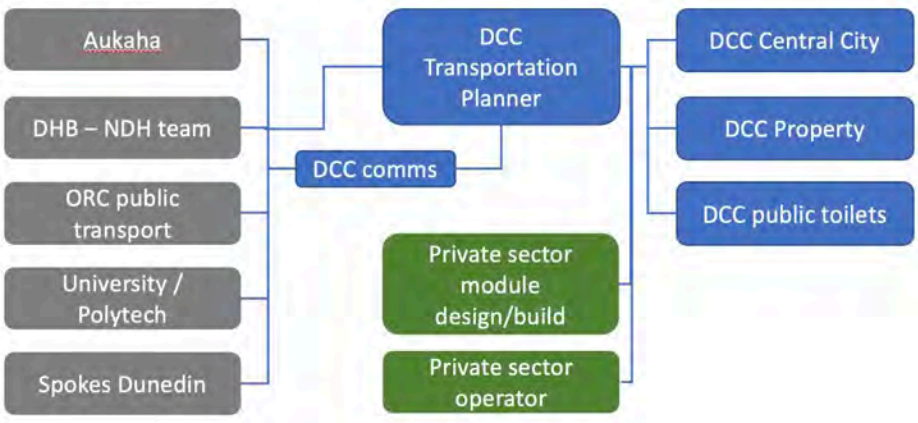
- the high-cost scenario including 20% contingency (Appendix H) – a lower level of capital expenditure than currently allowed for in the LTP ($750K per annum for three years)
- one major hub expected to be implemented in 2024/25, with a provisional capital sum of $100,000 (fitout costs, assumes the hub is contained within an existing building)
- four connecting hubs comprised of three pods, maximum total capacity of 30 bikes per hub
- no revenue is expected because it is Council's objective to encourage mode shift, and therefore no user fees are proposed.

Table 5-1 summarises the financial details. At present, revenue is unknown and is proposed to be limited to rental income from the major hub only (if it is within a council-owned property). No user fees are proposed as these would be counter-productive to the mode-shift objective.

Table 5-1: financials

	Financial year				
	2022/23	**2023/24**	**2024/25**	**2025/26**	**Total**
Capital expenditure	n/a	$750,000	$500,000	$100,000	$1,350,000
Operating expenditure	$200,000	$1,350	$2,700	$2,700	$206,750
Total expenditure	$200,000	$751,350	$502,700	$102,700	$1,556,750
Revenue	$0	$0	$0	$0	$0
Affordability					
Capital required	$0	$750,000	$500,000	$100,000	$1,350,000
OPEX required	$200,000	$1,350	$2,700	$2,700	$206,750
Funding source	Operating expenses in the current financial year are primarily for the preparation of this business case. Operating expenses in future years is to be confirmed subject to the partnership model with suppliers. The Waka Kotahi 3-year land transport programme is open for submissions in 2023 for July 2024 to July 2027. End of journey safe cycle facilities do meet the criteria for walking and cycle infrastructure fund and would attract a capital Financial Assistance Rate (FAR). Dunedin City would still be required to fund the local share. EECA have been contacted to see if this project would meet its decarbonising transport fund. Electric bicycle storage facilities were funded by EECA up to August 2022. They have recently modified the criteria where they are solely focusing their funding on electric vehicle facilities only. They are no longer funding two-wheel transport options. Consider any future CERF funding rounds (if project meets criteria) for future phases (2025+)				

6 Management case

Summarise the project management arrangements	The Bike Hubs project is an integral part of the Shaping Future Dunedin Transport Programme. The programme delivers on multiple strategic objectives with a particular focus on safety, travel choice, and climate change. Oversight of the project will be through the existing established Council procedures for infrastructure projects. The Council has in place comprehensive financial and project management controls and systems that report to Executive Management and Council. The Council has an internal audit programme and is also checked annually by Audit New Zealand, and by regular Waka Kotahi procedural and technical audits. Established programme management arrangements, via the Connecting Dunedin governance structure, are in place for the Shaping Future Dunedin Transport programme of works, which includes the Bike Hubs. These governance structures are responsible for overseeing the successful delivery of these projects. The delivery of the Bike Hubs works will be managed by DCC. DCC will use external consultants for the final design, construction, and MSQA elements. For the physical works contract, a qualified DCC engineer will act as Engineer to the Contract. They will carry out the day-to-day contract management tasks. They will be supported by a chosen designer who will have the role of Engineer's Representative. The Council will oversee the performance and review of the delivery of these elements using internal and external resources. DCC have the capability to deliver this project. They have successfully delivered several cycleway improvement projects including the Dunedin Urban Cycleways programme. A Road Safety Audit is not considered appropriate for facilities that are not in the travelled carriageway. Where bike parking is installed in the parking lane, a safety audit may be conducted. All Road Safety Audits will be completed in accordance with Waka Kotahi's Safe System audit guidelines for transport projects 2022.
Governance structure	

Outline key milestones	**Task**	**Description**	**Interdependencies**
	Detailed design	Completed detailed design based on the scope of the preferred option outlined under the economic case	Operations plan Consultation (major hub)
	Procurement	Commence procurement based on the complete detailed design	Detailed design Operations plan
	Operations plan	Procure and work with private sector operator for software and maintenance	Procurement
	Construction commences	Depends on the site. For satellite pods/modules, the construction occurs off-site, and the only on-site work is connections to power if required.	Procurement

7 Risk management

Risk management is an ongoing task and will be refined through detailed design and through the physical works tendering and contract phases. Key project risks identified for the Bike Hubs project are outlined as follows in Table 7-1. Risk will be allocated to Council and managed using Waka Kotahi's Risk management practice guide (February 2018).

Table 7-1: risk information

Identify any significant constraints or unique issues for this activity	Identification of a major hub location dependent upon finding a commercially viable ideally ground floor space in an existing building.
Identify any significant issues that need to be resolved in order to implement the activity	Consultation and momentum need to be maintained with the University, DHB, Aukaha and advocate leaders.

Risk	**Likelihood** (Rare/Unlikely/ Possible/Likely/ Almost certain)	**Consequence** (Insignificant/ Minor/Moderate/ Severe/Extreme)	**Mitigation**
Cost escalation / scope creep	Likely	Moderate	Construction is due to begin within 6 months of the current cost estimate. Monitoring and reporting on costs will be completed throughout the life cycle of the project.
Installations not respected by the public resulting in vandalism, or removal	Possible	Severe	Consultation with the public prior to installation Budget should include an allowance for removing minor vandalism/graffiti
Timing doesn't align with LCLR funding window	Possible	Minor	Sites have been screened to ensure construction can occur within this funding cycle
Uptake is higher or lower than expected	Possible	Minor	Modular relocatable pods and fixed connecting hubs enable capacity and siting flexibility

Identify the position responsible for any escalated risks	Connecting Dunedin Programme Manager
Briefly describe what project assurance processes are in place	Ongoing reference to this risk management table; specification of graffiti and vandalism resistance in materials and design procurement
Risk allocation How much of the risk is allocated to Waka Kotahi and how much to the Approved Organisation?	100% to Approved Organisation

8 Next Steps

It is recommended that Council:

1. Implement standard cycle stands at recommended short-stay locations.
2. Engage with Locky Dock for:
    a. integration of off-the-shelf products with the proposed Dunedin-specific modular bike hub design; and
    b. engagement with their industry partners (e.g. The Warehouse, Countdown etc) for additional sites where higher security and better level of service cycle parking could be implemented.
3. Procure design-build services for the indicative modular bike hub designs, including the potential for counters, displays, and lighting[7] connected to mains power for connecting hubs.
4. Determine whether the City's CCTV system can support additional cameras and, if so, specify these for the proposed bike hubs.
5. Engage with property owners and tenants of the preferred site locations, including the Otago Museum, to confirm site specifics.
6. Continue to investigate a major hub location between Stuart, Cumberland and Dunbar Streets, likely to be in an existing privately owned building.

[7] very low power Internet of Things (IoT) devices such as 14 W video counters are now commercially available; such low power amenities could make the satellite pods easier to implement and move without having to connect to mains power.

Appendix A Point of entry

Context	
Initiative name	Central City Bike Hubs
Author	Kelly Blackie
Lead organisation or business group	Dunedin City Council
Problem owner	Nick Sargent
Waka Kotahi point of contact	Erik Teekman
File reference	6-CD109.70
Date submitted for review	20/04/2022

Background

About 2% of Dunedin people reported in the 2018 Census that they commute to work by bike. Annual cordon counts show that about 600 people cycle into the central city on a typical autumn weekday morning (7:30 – 9:30 am).

The DCC People's Panel survey shows that one of the key barriers for people to take up cycling for their commutes is a lack of safe and secure parking and end-of-trip facilities.

Public bicycle parking in Dunedin is spread across the central city in places where there is room on the side of the footpath. Bike stands have been implemented ad-hoc or as part of a projects. Within the project study area this consists of about 650 spaces at over 230 stands and 65 locations. Undercover public bike parking is available at Vogel Street (capacity of 10) and Centre City Mall (10). There are some access-controlled indoor parking areas such as the medical school (capacity of 100 bikes), and Distinction Hotel Parking (15), Wall Street Mall (capacity of 25), Bioethics Department (35 spaces), and Captain Cook Motel (6 spaces).

Some workplaces and public destinations have no secure bike parking facilities available for their visitors or employees. Where no bike parking is provided, cyclists chain their bikes to the street furniture e.g., lighting poles, parking sign poles and fences. This can obstruct the footpath and create a hazard for pedestrians. The current arrangement means fewer people are likely to commute to work/shops on bikes as the lack of secure parking makes people weary of leaving their bikes and scooters for long periods of time.

The Bike Hubs project was identified during the Shaping Future Dunedin Transport (SFDT) Programme Business Case (PBC) completed in 2021 by the Connecting Dunedin partners (Dunedin City Council, Otago Regional Council, and Waka Kotahi). The SFDT aims to upgrade the city's transport network to support the location of the New Dunedin Hospital (NDH), whilst at the same time providing a future focussed, accessible transport system that enables placemaking and liveability outcomes for the city.

The Central City Bike Hubs project contributes toward the multi-party programme of work determined by the SFDT and is required to be advanced now to provide transport choice and to mitigate the effects of the New Dunedin Hospital construction.

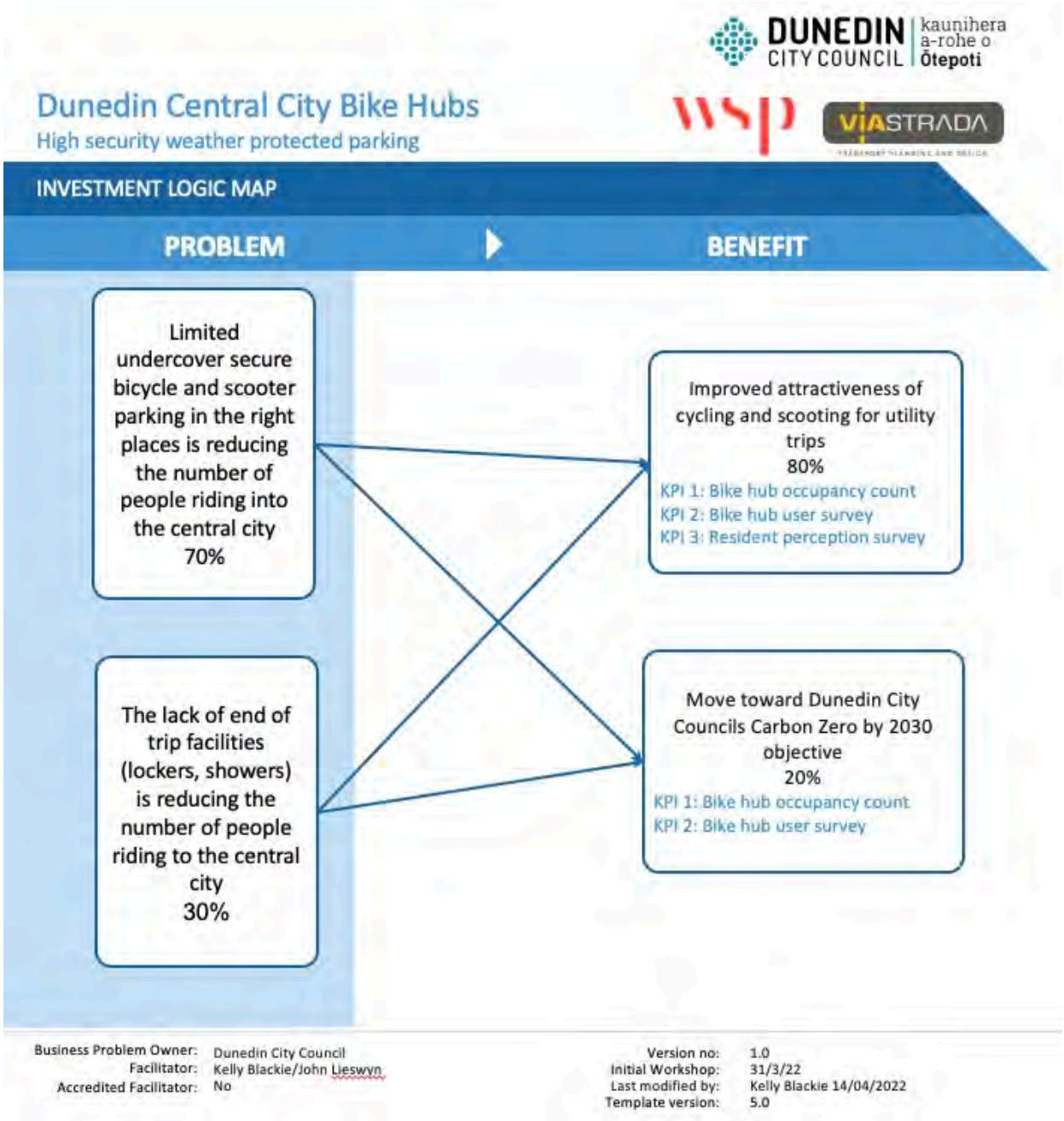
Setting out the problem or opportunity

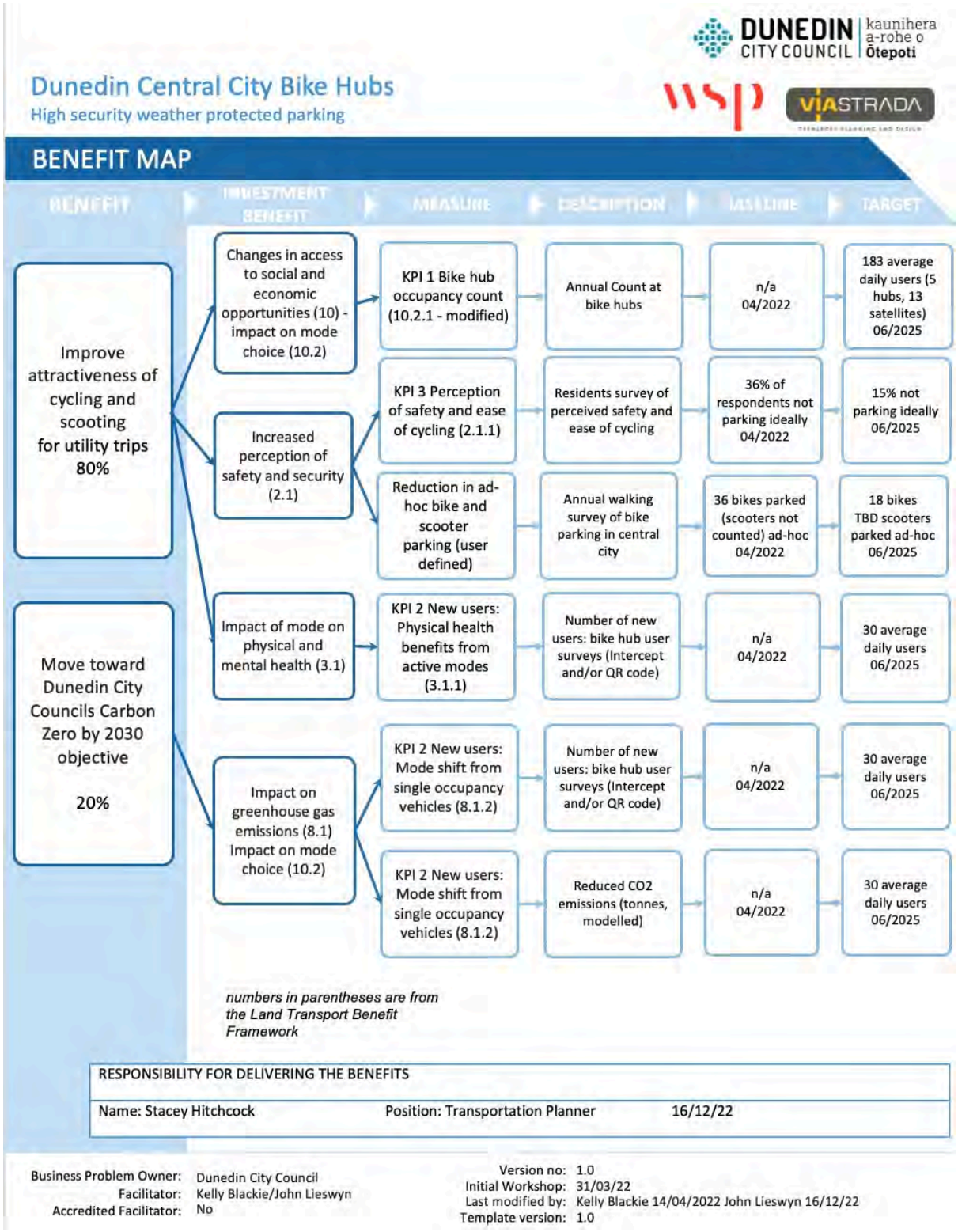
Problem or opportunity description	The DCC People's Panel survey shows that one of the key barriers for people to begin commuting by bike is a lack of safe and secure parking and end-of-trip facilities. The current facilities mean fewer people are likely to commute to work/shops on bikes due to the lack of secure parking.
Outcomes sought	Improve attractiveness of micro-mobility (bikes, scooters, skateboards etc) use for commuting into the central city. Improve access to safe, secure and easy to use parking, storage and end-of-trip facilities for commuters. Contribute to the cities mode shift goal by increasing the active mode share and reducing pressure on the transport network within the city centre.

	The current business case will determine the number of hubs required with their locations and level of service (security, weather protection, end-of-trip facilities), how they will be accessed and operated and what the implementation and delivery strategy is for each hub and the overall programme.		
Ensuring alignment with strategy			
Describe how the investment aligns with strategy	The Central City Bike Hubs project is one of seven DCC projects that are part of the Shaping Future Dunedin Transport (SFDT) Programme Business Case completed by the Connecting Dunedin partners in 2021. The Shaping Future Dunedin Transport Programme aims to upgrade the city's transport network to support the location of the New Dunedin Hospital (NDH), whilst at the same time providing a future focussed, accessible transport system that enables placemaking and liveability outcomes for the city. The project included in the Otago Southland Regional Land Transport Plan (2021-27) and is well aligned to the 30year vision of the Otago Southland Regional Land Transport Plan "A transport system providing integrated, quality choices that are safe, environmentally sustainable and support the regions wellbeing and prosperity." The project is also well aligned to the objectives of the RLTP: connectivity and choice, environmental sustainability, and future focussed. The Central City Bike Hubs project is included in the DCC 10-Year Plan (2021-2031) and aligned with the Dunedin City target of achieving net carbon zero by 2030. The project is currently included in Waka Kotahi's NLTP 2021/24 as a Low-Cost Low-Risk project.		
Level of risk, uncertainty, and complexity			
Key risks	Limited engagement with stakeholders and users could result in underutilised use or solution that is not fit for purpose Public interest/media interest Ensure understanding at political level, launch website and media statement at the beginning of the project. While the Bike hubs project is interlinked with other SFDT projects the interdependency of other projects is not critical for success.	Overall risk level:	Medium
Key uncertainties	The willingness of businesses to participate and partner is currently unknown. Potential EECA funding and process to be explored. Demand survey to consider stated preference and "willingness to pay" (use) to supplement existing data sets to ensure bike hubs are right sized and fit for purpose. Waka Kotahi to be included in an advisory role when required.	Overall uncertainty level:	Medium
Level of complexity	Known technology but large number of stakeholders (note this may result in an optimised solution) The existing SFDT business case and inclusion of the project in DCC LTP, RLTP and Waka Kotahi LCLR programme provide a strong strategic context link. The projects problem/benefits statement and investments are well understood and link back to SFDT. There is a wide range of existing data, which will be supplemented with user survey and inclusion of key stakeholders in the working group will provide useful insights into user preferences.	Overall complexity level:	Low
Previous and related work			

Summarise previous work	The Central City Bike Hubs project is one of seven DCC projects that are part of the Shaping Future Dunedin Transport (SFDT) Programme completed by the Connecting Dunedin partners in 2021. The PBC was endorsed by the Waka Kotahi Board in November 2021.
Summarise related work	There are seven Dunedin City Council projects that are part of the Shaping Future Dunedin Transport PBC including the Central City Bike Hubs project. The timing of the project remains important (to ensure alternative transport choices are available to Dunedinites during the construction of the New Dunedin Hospital); however, the interdependency of other projects is not critical for success. Otago Regional Council and Waka Kotahi also have programmes of work from the Shaping Future Dunedin Transport PBC, and they will be included in workshops.
Planning the next stage	
Recommended next phase	Single Stage Business Case Lite
Scope of next phase	Complete a SSBC Lite to determine the number, scale, facilities and locations of Hubs within the Central City. Funding for construction expected from Waka Kotahi's Low-Cost Low Risk work category. While a formal business case process is not required it provides a useful template for project development.
Target completion date	31 July 2022
Budget requirements	

Appendix B Investment Logic and Benefit Mapping




DUNEDIN CITY COUNCIL
kaunihera a-rohe o Ōtepoti
Dunedin Central City Bike Hubs
High security weather protected parking
BENEFIT MAP
BENEFIT
INVESTMENT BENEFIT
MEASURE
DESCRIPTION
BASELINE
TARGET
Improve attractiveness of cycling and scooting for utility trips 80%
Move toward Dunedin City Councils Carbon Zero by 2030 objective
20%
Changes in access to social and economic opportunities (10) - impact on mode choice (10.2)
Increased perception of safety and security (2.1)
Impact of mode on physical and mental health (3.1)
Impact on greenhouse gas emissions (8.1) Impact on mode choice (10.2)
KPI 1 Bike hub occupancy count (10.2.1 - modified)
KPI 3 Perception of safety and ease of cycling (2.1.1)
Reduction in ad-hoc bike and scooter parking (user defined)
KPI 2 New users: Physical health benefits from active modes (3.1.1)
KPI 2 New users: Mode shift from single occupancy vehicles (8.1.2)
KPI 2 New users: Mode shift from single occupancy vehicles (8.1.2)
Annual Count at bike hubs
Residents survey of perceived safety and ease of cycling
Annual walking survey of bike parking in central city
Number of new users: bike hub user surveys (Intercept and/or QR code)
Number of new users: bike hub user surveys (Intercept and/or QR code)
Reduced CO2 emissions (tonnes, modelled)
n/a 04/2022
36% of respondents not parking ideally 04/2022
36 bikes parked (scooters not counted) ad-hoc 04/2022
n/a 04/2022
n/a 04/2022
n/a 04/2022
183 average daily users (5 hubs, 13 satellites) 06/2025
15% not parking ideally 06/2025
18 bikes TBD scooters parked ad-hoc 06/2025
30 average daily users 06/2025
30 average daily users 06/2025
30 average daily users 06/2025
numbers in parentheses are from the Land Transport Benefit Framework
RESPONSIBILITY FOR DELIVERING THE BENEFITS
Name: Stacey Hitchcock
Position: Transportation Planner
16/12/22
Business Problem Owner: Dunedin City Council
Facilitator: Kelly Blackie/John Lieswyn
Accredited Facilitator: No
Version no: 1.0
Initial Workshop: 31/03/22
Last modified by: Kelly Blackie 14/04/2022 John Lieswyn 16/12/22
Template version: 1.0

Appendix C Site options analysis

Please refer also to the separately available site locations information sheet pack.

C.1 Long list generation and sifting

The long listing process has identified more than 20 long list sites based on site audits, desktop work and public input through the Social Pinpoint online survey. The longlist sites and decision regarding their inclusion in the shortlist is shown in Table 8-3.

The aim of screening the long list sites is to reduce these to a manageable level to allow for long list assessments to be undertaken.

Following a meeting with the Council staff and the consultant team on 4 July 2022, priority weightings were implemented. Council staff emphasised the need to consider that DCC (as well as SDHB and University of Otago) owned land will be much easier to implement bike hubs in in a shorter time frame. Therefore, priority weightings were proposed, based on timeframe, ownership of land and any other contributing factors. A site did not need both a longer timeframe and be privately owned to be a zero (it could be either, or both). Sites with the highest number weighting ie 4 are the highest priority sites. An initial prioritisation weighting for screening were assigned as per Table 8-1.

Table 8-1: initial priority for long list sifting

Initial priority	Timeframe	Ownership	Other factors
0*	>3 yrs	Private or Public	Other reasons – demolition of buildings; short term cycle parking is better (e.g., St. Andrews carpark)
1	>3 yrs	Private or Public	Rank private facilities lower; or facilities that another party manage
2	<3 yrs	Private or Public	Issue with a building such as the historic pool
3	<3 yrs	Public	Minor issue such as limited capacity
4	<3 yrs	Public	Ticks all the boxes

*Long list sites weighted zero and one are not displayed on the map.

Sites removed in the screening were added to the proposed relocatable satellite pods list, where infrastructure is moveable/scalable with surveillance and weather covering to test sites

The aim for the screening is to achieve the following approximate number of sites for multi-criteria analysis (MCA):

- 4-6 bike stations (expected to reduce to 1-2 for the short list)
- 6-8 connecting hubs (expected to reduce to 1-3 for the short list)
- 10 satellite pods (where two sites from the short list MCA are identified as highest priority)

The methods and criteria for screening of long list sites is based on:

- Job concentration - if there are sites with low job accessibility then these may be dropped
- Use by the general public (not just staff); if there is a large staff bike park existing or planned, this will reduce the demand for a bike hub.
- Ability to manage disruption caused by changing city landscape and capital works/developments
- Buildability/constructability/operational issues

- Split the scope area by Central City Plan zones and other zones (see Table 8-2) and aim for a spread of long list sites and types (satellite, connecting, major)

Table 8-2: zones and bike hub considerations

ZONE	CONSIDERATIONS
Warehouse precinct	ACC development Future overbridge
Cultural and Entertainment Quarter	DCC carpark redevelopments?
Tertiary and Medical Quarter	Existing major hub Use relocatable pods to respond to short term needs before SDHB installs permanent staff and public bike parking in medium term (3 – 10 years)
Creative Quarter	ORC and ACC developments likely to include staff bike parking that will reduce demand for publicly provided bike hubs.
Retail Quarter	Proximity to Bus Hub, supermarkets No bike hubs on George Street (nearby streets okay)
Forsyth Barr Stadium area	Including Logan Park

The full long list of sites follows in Table 8-3.

Table 8-3: long list sites

Area	Site Name	Address	Final decision
C	Albion Lane Pedestrian laneway	10 Albion Ln	Satellite pod
C	Castle St NDH carpark building	159 Castle St	Future - led by others
C	Castle/Hanover	194 Hanover St	Dropped
C	Closed building: "Crazy Deals"	279 Moray Pl	Dropped
C	Countdown Supermarket	309 Cumberland St	Future - led by others
C	Dunedin Town Hall option A	230 Moray Pl	Dropped – see Harrop
C	Dunedin Town Hall option B	230 Moray Pl	Dropped – see Harrop
C	Filleul/Moray Carpark	189 Moray Pl	Satellite pod
C	Great King St carpark	132 Great King St	Future
C	Hanover/Great King	140 Hanover St	Satellite pod
C	Harrop Street carpark	1 Harrop St	Satellite pod
C	John Swan basement	25 Bath St	Dropped
C	Lower Moray Pl Carpark	414 Moray Pl	Connecting hub
C	Lower Stuart St	Between Stuart, Cumberland, Dundas	Major hub
C	NDH Cumberland cycle park	280 Cumberland St	Future - led by others
C	NDH - Outpatients ~3yrs	168 Castle St	Future - led by others
C	Octagon (placeholder)	Dunedin Octagon	Satellite pod
C	Otago Farmers Market	36 Anzac Ave	Dropped
C	St Andrews St Carpark	36 Anzac Ave	Dropped
C	Toitu Council Carpark	2 Anzac Ave	Satellite pod
C	Upper Moray Pl carpark	40 Moray Pl	Future

Area	Site Name	Address	Final decision
C	Wall St Mall	20 St Andrew St	Future – led by others
N	Forsyth Barr	130 Anzac Ave	Satellite pod
N	Fredrick St/ SH1 carpark	89 Frederick St	Future
N	Hunter Centre	279 Great King St	Connecting hub
N	Logan Park	Logan Park Dr	Dropped
N	Otago Museum	419 Great King St	Connecting hub
N	Otago Polytechnic Students Assoc	Forth St	Future – led by others
N	Otago Polytechnic Vet Nursing	100 Anzac Ave	Dropped
N	Uni Otago Gym / Logan Park	157 Union St E	Satellite pod
N	Zoology and Physiotherapy	340 Great King St	Satellite pod
S	Crawford St Parking	90 Crawford St (53 Bond Street)	Satellite pod
S	Dunedin Gymnastics Academy	256 B Vogel St	Future - led by others
S	Jetty St Carpark	361 Jetty St	Satellite pod
S	ORC site	High/Clark/Broadway/MacLaggan	Dropped
S	Princes St demo buildings	372-396 Princes St	Dropped
S	Queens Gardens	Dowling/Rattray/Queens Gardens	Connecting hub
S	Rattray Street demolition	162-140 Rattray St	Dropped
S	Underneath Jetty St overpass	77-123 Vogel St	Satellite pod
S	Warehouse Precinct	6-19 Bond St	Satellite pod

The following long list sites were dropped or amended:

The **Octagon** has been often mentioned for secure bike parking, but:

- there has been several trials and ideas for this space that haven't achieved public acceptance for permanent implementation;
- it is a sensitive environment of historic importance; and
- the Central City Plan Programme may include secure bike parking within the Octagon, potentially using relocatable satellite pods proposed in this business case.

Zoology and Physiotherapy at 340 Great King Street (at the cul-de-sac) is also led by the Central City Plan Programme; instead consider that the Bike Hubs investment will support that programme.

The **Town Hall** area originally included three sites:

- Library Option A – access issues with pedestrian interaction; there are some existing stands already; and Council staff have their own secure bike parking.
- Town Hall Option B – because the Changing Places toilet is going there and it is large, the opportunity for bike parking will be limited and if installed may just be standard on-street stands
- Filleul Street / Moray Street carpark Option C – issues because of development potential and safety access (downhill speeds) associated with crossing Moray Street

The Harrop Street carpark has been included to serve the Town Hall because it is safer to access from a motor traffic and pedestrian interaction perspective, it is convenient for people on bikes to access

the events at the Town Hall, and parking occupancy studies have shown spare capacity in the carpark (or motorists have other nearby options).

C.2 Amenities co-location considerations

There are currently no **bike repair stations** within the central city study area, although Council has provided them elsewhere in the city; several survey respondents requested them, and such stations are becoming commonplace in other New Zealand cities.

The provision of **toilets**, or proximity to toilets at each long list site was considered as part of the creation of the long list sites. Co-locating a bike hub with a new public toilet site, or an upgrade to an existing site was considered in the long list formulation and assessment.

Drinking fountains are an important amenity for bike riders and the general public. In the revitalisation works of George Street, Kai Tahu emphasised the need for valuing and installing on-street drinking fountains. Dunedin City Council has planned drinking fountains in each block, with two in one block of the George Street upgrades.

The idea of co-locating **showers** with public toilets has been raised by members of the public. Installing showers at a bike hub may also require storage lockers.

The consulting team investigated co-locating a major bike hub site with **other service offerings** to ensure security and management of the bike hub. These amenities may include gyms/climbing/yoga, cafes, bike shops/hire, community halls, theatres, social services, non-for-profit organisations, and churches/other religious locations.

C.3 Multi-criteria analysis methods

Table 8-4 shows the criteria used in the multi-criteria analysis (MCA), as well as a description and method for scoring for each criterion.

Table 8-4: criteria used in the analysis

Criterion	Description	SCORING				
		2	1	0	-1	-2
Site layout actual safety	Health and safety risks during implementation, operation, or maintenance	No risk	Low risk	Medium risk	Medium-significant risk	Significant risk
Demand index	Jobs, tertiary education within 270 m (higher weight of 1) + 450 m buffer of site (weight 0.5)	statistically scaled and transformed to -2 to +2				
Cycle network proximity	Proximity to existing and near term proposed cycle network	separated cycleway	separated cycleway within sightline <100 m away from site	cycle lanes	no cycle lanes or cycleways	no cycle lanes, cycleways and on road constraints
PT integration	Proximity & demand of existing bus patronage from Bee card data – tag on/off at stops	statistically scaled and transformed to -2 to +2				

Criterion	Description	SCORING				
		2	1	0	-1	-2
	within 270 m buffer of site					
Site perceived safety (CPTED)	Open spaces with passive surveillance score high.	within buildings with active surveillance	Open space with passive surveillance	Medium /neutral	partially hidden behind buildings /alleyways	hidden behind buildings /alleyways
Parking requests (online survey)	Parking preferences as per Social Pinpoint survey); more weight given to pins placed for secure parking	statistically scaled and transformed to -2 to +2				
Public toilet proximity	Health & wellbeing measure; tourism benefit	co-located with proposed new toilet	proximity to existing toilet available 24/7	proximity to existing toilet not 24/7 available	distant from any toilet; could be built; not in current list	distant from any toilet and infeasible to add one

The MCA spreadsheet has been set up to permit quick removal of the tertiary population from the demand index criterion, should a future reassessment be desired without students.

Weightings were developed through pairwise comparison in a workshop setting with 11 stakeholders, using the Menti web app. This resulted in some inconsistencies due to technical difficulties. Therefore the comparison was re-run with five independent members of the consultant team (i.e., people not directly involved in the work). The method was consistently understood, and the results used to adjust outlier or opposite weighting results from the workshop.

The resulting weightings (Table 8-5) yielded a precise value as a geomean (column A) or adding to 100% (column C). The team then rounded these (columns B and D). Column B represents relative weights where a neutral weight is 1 and higher or lower weights are a multiple of 0.5. In contrast, column D represents percentages that add up to 100% and commuters receives a higher weight.

The latter weighting was agreed between the team to be the simplest and most intuitive weighting scenario. Sensitivity testing (refer section C.4) showed no change to the ranking between weighting scenarios A, C and D. Using scenario B, Great King and Harrop Street carparks have a non-consequential swap between 4th and 5th rank in the central zone.

Table 8-5: weightings

Criterion	(A) Relative weights (raw geomean)	(B) Relative weights (rounded)	(C) Relative % (raw)	(D) Relative % (rounded)
Site layout actual safety	1.60	1.5	18%	15%
Commuters (jobs, students)	1.98	2.0	22%	30%
Cycle network proximity	1.41	1.5	16%	15%
PT integration	0.99	1.0	11%	10%
Site perceived safety (CPTED)	1.16	1.0	13%	15%
Parking requests	0.65	0.5	7%	5%
Public toilet proximity	0.61	0.5	7%	5%
Expandability (future proofing)	0.50	0.5	6%	5%

C.4 Results

Table 8-6 shows the results of the multi criteria analysis, with a rank of each site's score across all sites and a rank by the three central city areas: North, Central and South.

Table 8-6: MCA results

	Site location	**Site address**	*Actual safety*	*Commuters*	*Cycle network*	*Public transport*	*Perceived safety*	*Parking requests*	*Public toilets*	*Expandability*	**Score / Rank**	**Score**	**Rank (all sites)**	**Rank (by zone)**
		Weight:	0.15	0.30	0.15	0.10	0.15	0.05	0.05	0.05				
North	Otago Museum	419 Great King Street	0.15	0.60	0.30	-0.18	0.30	-0.09	0.00	0.00		**1.07**	1	1
North	Hunter Centre carpark	279 Great King Street	0.30	-0.04	0.15	-0.18	0.15	-0.06	0.03	-0.05		**0.30**	3	2
North	Frederick St/SH1 carpark	89 Frederick Street	-0.15	-0.03	0.30	-0.18	0.15	-0.06	-0.05	0.05		**0.03**	5	3
Central	SDHB Kindy (on street)	140 Hanover Street	0.30	-0.09	0.15	-0.07	0.15	0.01	0.03	-0.10		**0.38**	2	1
Central	DHB historic pool building	194 Hanover Street	-0.30	-0.11	0.30	-0.20	-0.30	-0.08	-0.10	0.00		**-0.79**	11	7
Central	Great King Street carpark	132 Great King Street	-0.15	-0.11	-0.15	0.20	-0.15	0.09	0.00	0.10		**-0.17**	8	5
Central	Harrop Street carpark	1 Harrop Street	0.15	-0.18	-0.15	0.01	0.00	0.02	0.10	-0.10		**-0.14**	7	4
Central	Upper Moray Place carpark	40 Moray Place	0.00	-0.16	-0.15	-0.15	-0.15	0.10	0.05	0.10		**-0.36**	9	6
Central	Lower Moray Place carpark	414 Moray Place	0.15	-0.13	-0.15	0.08	0.00	0.04	-0.10	0.05		**-0.07**	6	3
Central	Building TBD b/w one way pair	Lower Stuart Street	0.15	-0.28	0.30	0.05	0.15	-0.07	-0.05	-0.05		**0.20**	4	2
South	Queens Garden SH1	Dowling/Rattray	0.00	-0.42	0.00	-0.11	0.15	-0.10	0.10	-0.10		**-0.48**	10	1
South	Under Jetty St overpass	77-123 Vogel Street	0.15	-0.60	0.00	-0.19	0.00	-0.08	-0.10	-0.05		**-0.87**	12	2

Table 8-7 describes the various sensitivity test iterations with different weightings and excluding each criterion in turn (while holding all else constant). The south zone's two sites are not included.

The absolute change value is the total movement (up or down) for all sites in each scenario. Many of these movements are not visible because they occurred for sites not ranked in the top three for the zones. Noting that the top two or three sites from each zone are to be carried forward into the short list and therefore changes in rank between these top rankings are less relevant, the key findings are:

- various weighting scenarios (precise vs. rounded) had no relevant effect, except for equal weighting, which is not recommended;
- excluding tertiary students causes the top two north and the 2nd and 3rd central sites to swap
- excluding "site layout actual safety" promotes Great King Street to top rank in the central zone, suggesting that if ramp safety can be addressed then it will score better;
- excluding "commuters" or "PT integration" (bus user numbers) has a substantial effect but mostly on lower ranked sites; only Harrop Street moves into the top three suggesting that if an objective is to provide non-work hour secure parking for events at the town hall, then this site should be provided for;
- excluding the "cycle network proximity" removes Lower Stuart from the top three, as is intuitively the case with a site that is on the separated cycle network; Frederick Street carpark is not demoted because it scores well enough on other criteria; and
- excluding "site perceived safety" promotes Great King Street into the top three in the central zone, suggesting that this site would score better if it could be designed with passive surveillance say at ground level.

Table 8-7: sensitivity test results (changes in top three highlighted)

Scenario		Top three (North)			Top three (Central)			Absolute change	Change in long list ranking, compared to base case ranking
		1	2	3	1	2	3		
1	Relative % (rounded)	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Lower Moray	base case	---
2	Relative % (raw)	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Lower Moray	0	No effect
3	Relative weights (raw)	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Lower Moray	0	No effect
4	Relative weights (rounded)	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Lower Moray	2	Great King up 1, Harrop down 1
5	Equal weighting	Otago Museum	Hunter Centre	Frederick	Great King St	SDHB Kindy	Upper Moray	14	Great King up 4; Upper Moray up 3; Harrop, Lower Moray & Lower Stuart down 2, SDHB down 1
6	Excluding tertiary students	Hunter Centre	Otago Museum	Frederick	SDHB Kindy	Lower Moray	Lower Stuart	4	Museum down 1, Hunter Centre up 1; Lower Moray up 1, Lower Stuart down 1
7	Excluding site layout safety	Otago Museum	Frederick	Hunter Centre	Great King St	SDHB Kindy	Lower Stuart	10	Great King up 4; Hunter Centre, SDHB Kindy, Harrop, Lower Moray & Lower Stuart all down 1
8	Excluding commuters	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Harrop	2	Harrop up 1, Lower Moray down 1
9	Excluding cycle network	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Moray	Harrop	6	Lower Stuart down 3, Great King, Harrop and Lower Moray up 1
10	Excluding PT integration	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Harrop	6	Upper Moray up 2, Lower Moray down 2, Harrop up 1, Great King down 1
11	Excluding site perceived safety	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Great King	4	Great King up 2, Harrop & Lower Moray down 1

Scenario		Top three (North)			Top three (Central)			Absolute change	Change in long list ranking, compared to base case ranking
		1	2	3	1	2	3		
12	Excluding parking requests	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Lower Moray	0	No change
13	Excluding public toilet proximity	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Lower Moray	2	Great King up 1, Harrop down 1
14	Excluding expandability	Otago Museum	Hunter Centre	Frederick	SDHB Kindy	Lower Stuart	Harrop	2	Harrop Street up 1, Lower Moray down 2

C.5 Short list

Given this process, there are some results that require consideration of inter-relationships between high-ranked sites in each zone as per a logic check as summarised in the "justification" column of Table 8-8. Six sites have been short listed for demand modelling and five for the short list. These will be in addition to the proposed satellite (relocatable pod) sites throughout the central city.

Table 8-8: short list after logic check (SAT = satellite list, FUT = future list)

Zone	Site location	Site address	Zone rank	Short list?	Justification
North	Otago Museum	419 Great King Street	1	1	Connecting hub; standalone structure in road reserve, open space, or within a building
	Hunter Centre carpark	279 Great King Street	2	2	Standalone connecting hub
	Frederick St/SH1 carpark	89 Frederick Street	3	FUT	Move to long-term future; low score in zone, very high demand carpark
Central	SDHB Kindy (on street)	140 Hanover Street	1	SAT	Move to top of satellite list because it is too close to the Hunter Centre site and is space constrained along the Great King Street frontage
	DHB historic pool building	194 Hanover Street	7	-	Drop entirely due to feasibility issues
	Great King Street carpark	132 Great King Street	5	FUT	Move to long-term future; low score in zone
	Harrop Street carpark	1 Harrop Street	4	SAT	Move to top of satellite list due to ranking in zone and proximity to Council staff secure parking
	Upper Moray Place carpark	40 Moray Place	6	FUT	Move to long-term future; low score in zone; access may be difficult due to commercial arrangement
	Lower Moray Place carpark	414 Moray Place	3	2	In building connecting hub; due to close for earthquake strengthening; allows time to plan and design
	Building between one-way pair	Lower Stuart Street	2	1	Cycle World has no internal space; Stuart Street space car parking limited; Cumberland Street space needed for lane shifts during NDH construction; seek a major hub in building along Stuart between one-ways
South	Queens Garden SH1	Dowling/Rattray	1	1	Standalone connecting hub; work in with ACC and toilets team
	Under Jetty St overpass	77-123 Vogel Street	2	SAT	Include in demand model for coverage reasons but move to satellite list due to low ranking overall

Based on this work and long list sites excluded from the MCA but considered high priority, the following sites are the top of the list for the satellite relocatable pods:

- 340 Great King Street cul-de-sac (Physiotherapy carpark or on-street space)
- SDHB Kindy along Great King Street, just north of Hanover Street
- Harrop Street carpark, serving the Town Hall
- Under the Jetty Street overpass on Vogel Street

Appendix D Demand model

D.1 Demand assessment methodology

The demand assessment aims to understand how many people currently cycle to the central city, and how this could increase with the provision of Bike Hubs and other network factors. This information will be used to estimate usage of each short-listed site.

D.1.1 Data sources and modelling approach

Figure 8-1 gives an overview of the modelling approach:

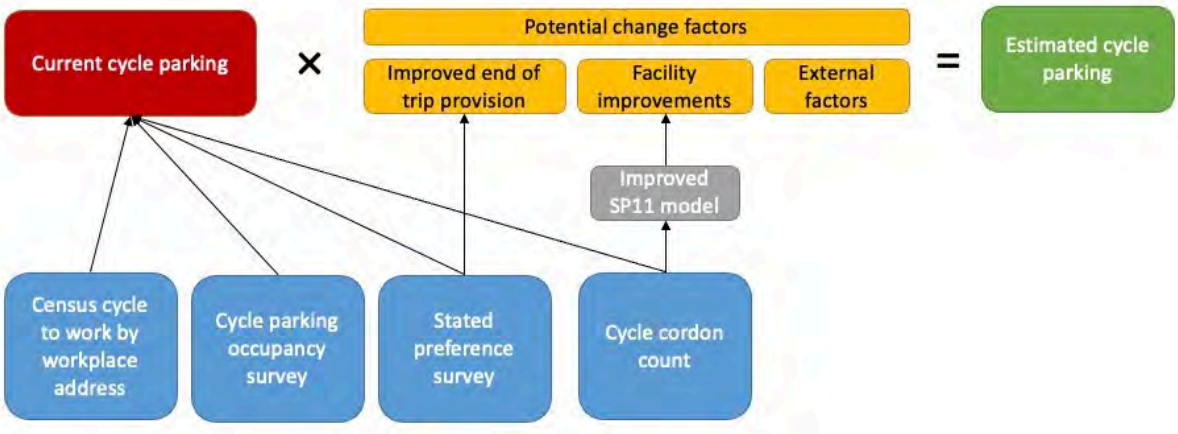


Figure 8-1: modelling overview

Table 8-9 gives more information about the four data sources indicated in Figure 8-1.

Table 8-9: Overview of data sources

Data source	Census travel to work	Cycle parking occupancy study	Stated preference surveys	Cycle cordon count
Sample	Everyone who biked to work at any time of day on Census day – Tuesday 6 March 2018	Bikes parked on public facilities, plus some noted private (locked) facilities, and some bikes observed to park informally (e.g. locking to a street sign) at late morning / middle of the day – Wednesday 2 March 2022	Intercept: 6-7 April 2022. On-street interviewers travelling around the CBD. Yielded 20 respondents. Online: 22 June – 15 July 2022. Publicised via DCC social media and communications channels. Yielded 153 respondents	All cyclists travelling into central city during am peak on Thursday 7 April 2022.
Advantages	Good representation of the total population.	Includes actual location of parking facilities.	Will indicate some (but not all) private work parking facilities.	Indication of number of people cycling to work.
Limitations	Aggregated by statistical area units –	Includes some private facilities that can be seen from public streets, but does not	A small, potentially biased, subset of the	Does not distinguish school or university students. Could include people travelling through the

Data source	Census travel to work	Cycle parking occupancy study	Stated preference surveys	Cycle cordon count
	doesn't give exact workplace. For privacy reasons, statistical areas where fewer than 6 people rode to work are excluded; affected 13 of the 48 statistical areas in study area. Mode choices on Census day influenced by weather MetService reported light showers on Census day 2018.	include all private parking at workplaces. More of a snapshot in time – most sites were only visited once. Subject to people's choices made on the count day (although the weather was fine).	total cycling population. Does not indicate all private work parking facilities – could skew data towards those that are represented.	central city and not parking. Does not indicate where people parked their bikes. Subject to poor weather (showers and low temperature) on the survey day.

Some manipulation of the data was undertaken to enable evaluation and comparison:

- Records indicated as -999 (i.e. fewer than 6 people) in the Census data have been changed to 3, as it is known that the true value is not zero but less than six.
- A 4-minute walking buffer (360 m at 1.5 m/s walking speed) was created around the bike hub scope area and the Census data clipped to this, with key fields for Census units that overlapped the buffer factored according to proportion of clipped area within the buffer. This created the "buffered study area", which contains 48 statistical area units, 26 of which were clipped to some degree. The buffered study area was used for initial appraisal of the Census bike to work dataset in particular, but future analyses were based on the proposed site locations and not necessarily limited to this area.

D.1.2 Assessment of current cycle parking

Figure 8-2 shows the relationships between the four data sources, and the information they reveal about the types of bike travel to / through Dunedin City Centre and the form of bike parking used.

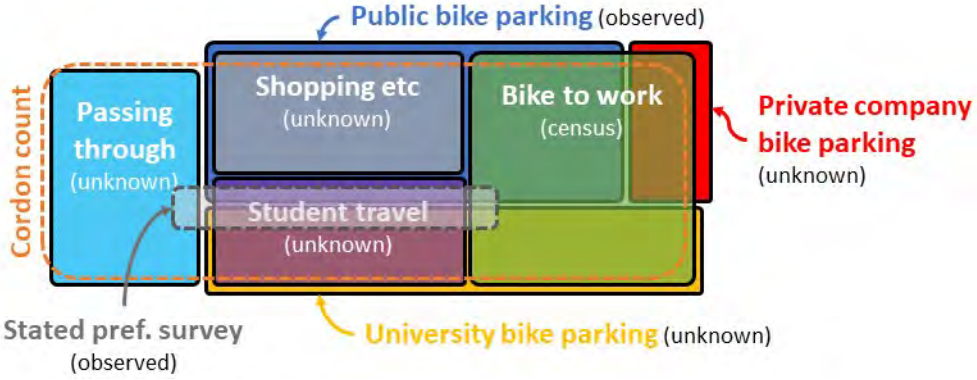


Figure 8-2: relationships between data sources, travel purposes and bike parking types

Figure 8-2 shows there is overlap between many of the data sources, but the degree of overlap or exclusion is often not known.

- Census data gives a good indication of the number of people travelling by bike to work in the Central City, but it does not distinguish whether these people have private bike parking

facilities at their workplace, or whether they work at the university, which is outside the scope of this project.

- The bike parking survey captures not just people travelling for work, but also those travelling for shopping / entertainment etc plus perhaps a small proportion of university students who may park outside the campus.
- The cordon count captures all people travelling into the central city by bike, but could include a proportion of people who are just passing through and therefore do not require central city bike parking.
- The stated preference survey gives a snapshot of all types of travel, destinations and bike parking used; however, it is not certain that the proportions revealed in the stated preference survey are representative of the total population.

D.1.3 Initial analysis of data sources

Census travel to work

Figure 8-3 shows the Census travel to work by bike data for the buffered study area. The highest volumes of travel by bike were concentrated around and to the east of the Octagon, and the Faculty of Dentistry (upper section of the scope area).

An estimated 507 people biked to work in the buffered study area. Within the bike hub scope area the total was 374, and within the cordon count boundary, the total was 396.

The Census data distribution largely supports the choice of scope area, as it contains the areas of greatest bike to work volumes (the darker shades of green). One modification could be to consider extending the scope area southwards, along the one-way pair, as this area also has a high bike to work volume. The darkish green area immediately north of the scope area is largely university campus.

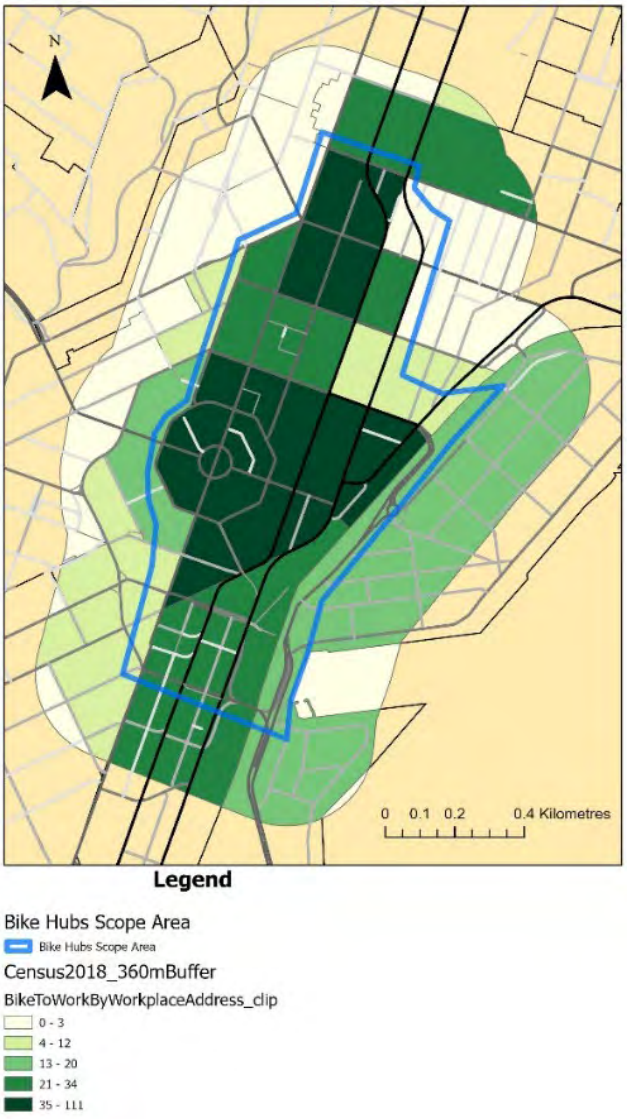


Figure 8-3: Census bike to work, buffered study area

Cycle parking occupancy study

Figure 8-4 shows the results of the cycle parking occupancy survey for facilities accessible to the public, plus noted instances of informal parking (e.g. against street furniture, signs etc).

Within the scope area (note: not the wider buffered study area) there were 89 bikes parked in formal public facilities, plus a further 36 biked informally – i.e. 125 bikes parked on public space.

The informal parking observed highlights some locations where there is a desire for bike parking, but perhaps not all desired locations as informal parking generally relies on the availability of street furniture to which bikes can be locked.

The parking occupancy survey suggests about 28% of cyclists park in private locations.

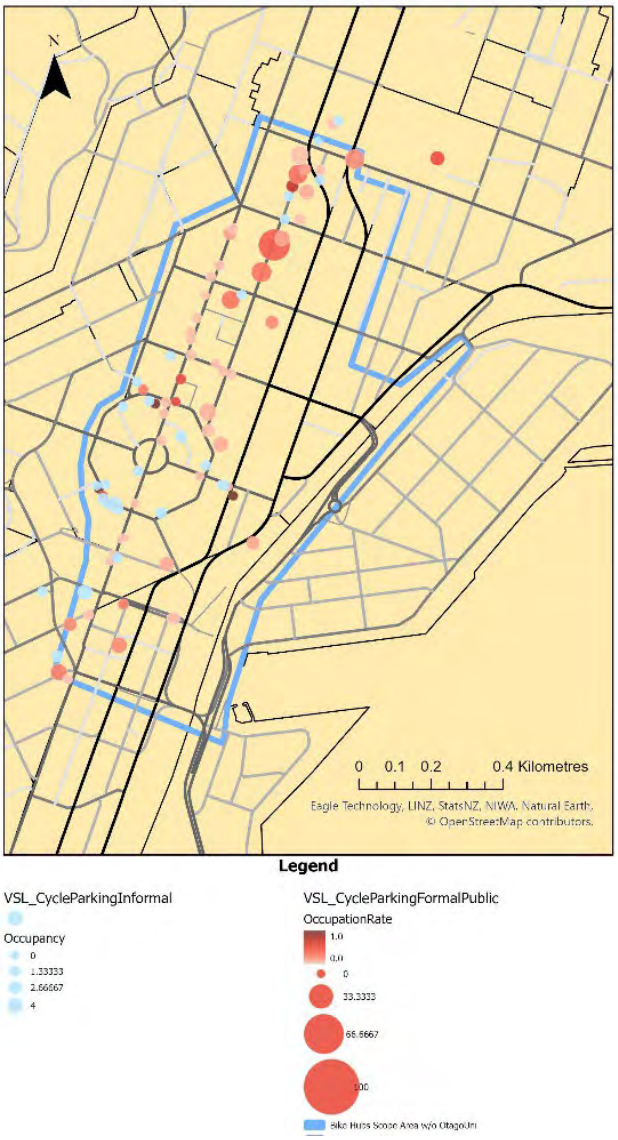


Figure 8-4: cycle parking occupancy survey

Cordon count

Figure 8-5 shows the locations of the cordon counts for active transport (i.e. walking and cycling).

A two-hour morning peak count was undertaken, showing 291 people entered the central city by bike.

A further 87 people exited the cordon area by bike – these could have been people passing through (i.e. previously counted as entering) or those originating from the central city (i.e. they live there but go to work / school / activities elsewhere).

The cordon area does not align exactly with the scope area, but is close enough to give a good indication. In the buffered study area, there are approximately 5,450 residents and 95,630 jobs to which people travel. Therefore, it is probably that the majority of people exiting the cordon area during the morning peak live outside the cordon area and were travelling through. So, the number of peak period travellers requiring bike parking in the central city could be as low as 204 (=291-87). However, there would also be people entering the central city outside of peak period.

To relate the 2-hour cordon count data to route AADTs predicted by SP11, the CNRPG scaling method[8] was used, for a "non-Auckland" commuter site on a Thursday during Term 1, with rain. This method estimated an average annual daily traffic (AADT) of 1,882 people entering the cordon count area per day.

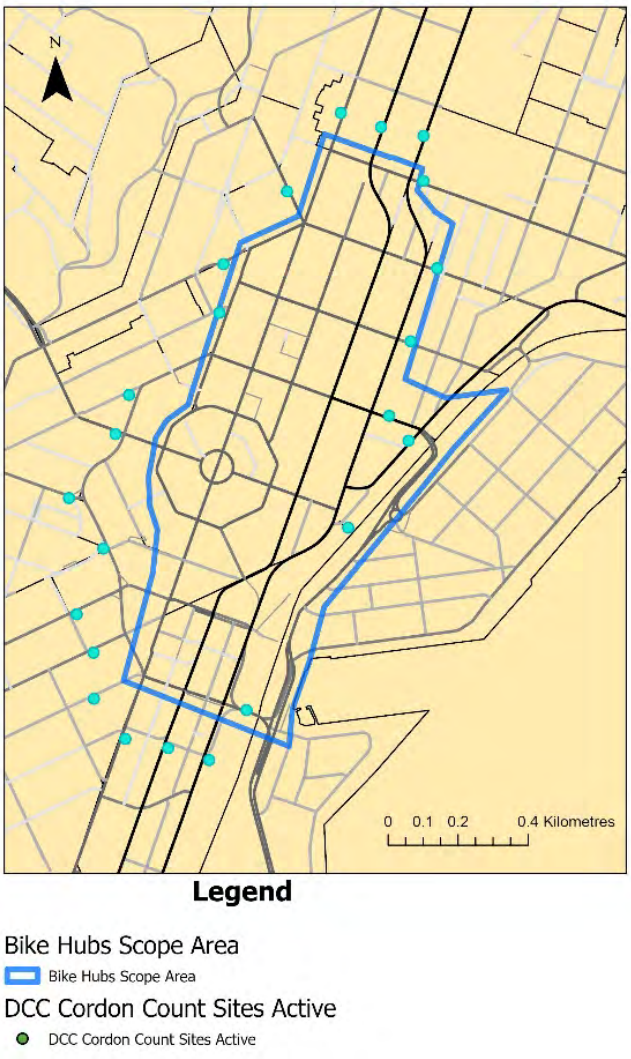


Figure 8-5: cordon count sites - active transport

[8] See https://www.nzta.govt.nz/walking-cycling-and-public-transport/cycling/cycling-standards-and-guidance/cycling-network-guidance/cycle-network-and-route-planning-guide/process/monitoring-and-reporting/#calibration-and-scaling note that the Cycle Count Scaling Spreadsheet as described in CNG technical note TN003 could not be applied, as it requires the "short term" counts to be at least 2 weeks long.

Stated preference surveys

153 people responded to the online survey, with 58 giving map entries showing where they currently park and where they would like to see additional bike parking provided – a total of 199 points were obtained (multiple questions per respondent, and some identified multiple points per question) these comprised:

- 69 desired secure bike parking locations (plus 10 more from the intercept survey)
- 54 desired new bike stands
- 50 current public parking locations used
- 26 current private parking locations used (i.e. 34%)

The data gave some insights into the locations of private parking currently provided. It also identified some key locations of desired parking – particularly near the railway station and between the one-way pair where there is very little current provision. There is also demand for more or higher-spec parking in locations near where parking is currently provided.

There may be some bias in the sampling and responses of the stated preference surveys (e.g. people at particular workplaces encouraging their colleagues to also participate) and therefore this data should only be seen as a supplement to the other data sources.

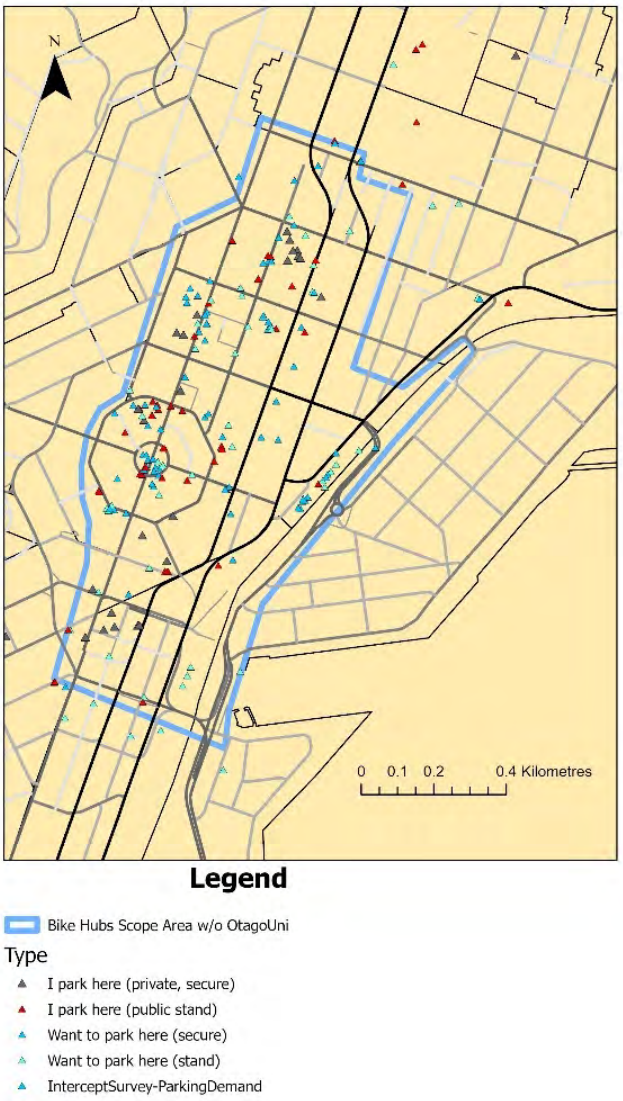


Figure 8-6: online and intercept survey responses

Some interesting comparisons between the data sets described in the table above are:

- It would be expected that the Census bike to work data would be similar to the cordon count data showing people entering on bike in the 2-hour morning peak period. However, the former was almost twice that of the latter (396 vs 204). Discrepancies are likely due to the difference between the two survey days (a fine day in March 2018 vs a wet day in post-pandemic April 2022), the fact that some people travel to work outside of the morning peak, and the people who both live and work within the cordon area.
- Applying the CNRPG scaling method to the number of people entering the cordon count area produced an estimate almost five times greater than the Census total (1,882 vs 396). This could suggest that the CNRPG method is not suited to the Dunedin context, but it could also be an indication that the cordon count includes a large proportion of non-work trips, which is plausible for Dunedin given the number of students biking to university.

- The cycle parking count was lower than any of the Census bike to work total for the various areas analysed. This may in part be due to not all Census area units having public bike parking on them, and suggests a large proportion of private parking.
- The Census data and bike parking data are also spatially different – there is a correlation showing a high concentration around university buildings in the upper scope area, but the Census also shows high numbers of people biking to work in the area units around the Octagon, which is not reflected in the parked bikes counts – this suggests there is more private parking used around the Octagon in particular.
- The stated preference survey data reveals some private parking in the vicinity of the Octagon, with other clusters near the south-west extent of the study area and within the university buildings towards the north.
- The stated preference survey data also reveal a high desire for secure or simple bike parking near the railway station.
- The number of votes for desired locations (secure and regular stands) from the stated preference surveys is comparable to the actual number of bikes observed to be parked in public stands (133 and 125 respectively). This comprises both people who currently bike and park at a regular bike stand but would prefer to park in a secure location, and people who would choose to start biking if secure parking were provided.
- The parking occupancy survey and stated preference survey suggest around 30% of cyclists currently park in private locations.

Overall, there is low accordance between the data sets, with little information to determine the exact overlaps or discrepancies. The parking survey and stated preference surveys are considered the best sources for determining the current demand for public bike parking, with the Census data (including not just existing bike to work, but also total workers and students as potential new cyclists) providing further useful insight into the spatial distribution.

D.2 Potential change factors

D.2.1 Improved end-of-trip provision

Figure 8-7 shows the responses to Question 13 from the stated preference survey, detailing the reasons people decide not to bike in the central city. The green bars indicate those reasons that could be addressed by a secure Bike Hub and its potential amenities.

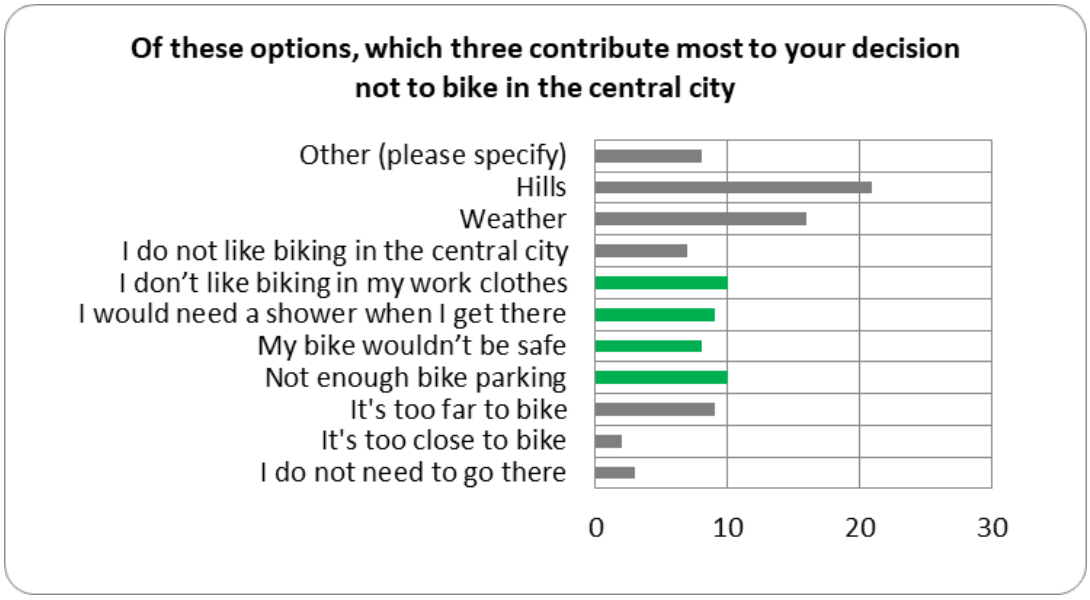


Figure 8-7: reasons for not biking in the central city (stated preference survey Q13)

113 of the 153 survey participants skipped this question – presumably because they do choose to bike in the central city. Of the 40 who answered, 26 identified at least one of the reasons that could be addressed by a Bike Hub as their reason for not biking in the central city. However, only 4 people selected at least one of those reasons without also selecting any of the other reasons that cannot be easily addressed by Bike Hubs (grey bars).

If this survey is indicative of the general population, the provision of Bike Hubs could be expected to increase demand for cycle parking by about 3.5% (=4/113). A more optimistic view of the situation suggests that some people might learn to overcome the other barriers (hills, weather etc) if some barriers were eradicated by the introduction of Bike Hubs. This could mean an increase of up to 23% (=26/113).

For this analysis, the effect of improved end-of-trip provision will be taken as a 5-10% increase in cycle volumes / cycle parking demand.

D.2.2 Facility improvements

The Dunedin cycle network is due to be upgraded in three locations that will affect cycling in the central city:

Albany Street Connection
Cycle and pedestrian improvements along Albany Street, Anzac Avenue and Minerva Street between George Street and the harbour shared path. The core of the project involves a separated bi-directional cycleway between Great King Street and Anzac Avenue; from Anzac Avenue it will be a shared path. This runs along the northern section of the Bike Hubs scope area, and links to the SH1 one-way pair cycleways, thus feeding directly to the central city cycling network.
Bank St / George St arterial route
Buffered cycle lanes along George Street and Bank Street between Albany Street intersection and North Rd intersection, plus improvements to crossing points, bus stop alignment, parking space markings and George Street Normal School area. This route feeds into the north-west corner of the Bike Hubs scope area and connects to Albany Street, which connects to the SH1 cycleways.

Tunnels Trail
Shared path connecting Mosgiel to South Dunedin at South Road, where the provision will comprise mainly of cycle lanes, plus a short section of mixed traffic (with sharrows) and a short section of shared path. This will connect to Princess Street, which will be implemented at a later date and, while the concept plans have not been developed, will focus on bus priority with a secondary aim of improving safety for pedestrians and cyclists. An alternative may be to connect users to the SH1 pair cycleways via a shared path through Oval Park.

The predicted volumes for the first two routes have been calculated using the updated SP11 model (created by ViaStrada for Waka Kotahi, due to be included in the next update to the *Monetised Costs and Benefits Manual*, MCBM). The SSBC for the Tunnels Trail suggests a 49% increase in users along the route[9] - this has been incorporated into this analysis, with the assumption that the provision along Princes Street or connection through Oval Park will be upgraded sufficiently to connect Tunnel Trail users to the City Centre.

Table 8-10 shows the estimated daily flows before and after the facility improvements, using the SP11 methods, the proportion increase at the affected sites, and how this will increase the total entering flow across the study site. As a comparison for the SP11 method estimations before the cycle route improvements, the final column in presents the cordon counts (total flow i.e. entering plus exiting) scaled by the *Cycle Network and Route Planning Guide* (CNRPG) method – with the two methods giving a reasonable match.

Table 8-10: estimated cycle flow increase due to facility improvements

Site	Estimated daily flow (updated SP11 method)			Alternative source	Proportion existing total AM peak entering flow (cordon count)	Estimated increase to total entering flow	Comparison: Cordon counts scaled by CNRPG method
	Before	***After***	***Prop. increase***	***Prop. increase***			
Albany	154	286	86%		3.8%	3.2%	181
Bank / George	102	140	37%		8.6 %	3.2%	155
Tunnels Trail	*	*		(49%)	8.2%	4.0%	207
Total						**10.5%**	

* not applicable

() estimated, or derived from estimate

Table 8-10 shows that central city cycling volumes are estimated to increase by 10.5% with the route improvements along Albany Street, Bank Street / George Street and the Tunnels Trail plus connections. If the Tunnels Trail were not included, the lower estimate would be 6.4%.

[9] Based on the ratio of time travel costs for new to existing users from Appendix J of the Dunedin Tunnels Cycle Trail Single-Stage Business Case (Abley & Bonisch, 2022).

D.2.3 External factors

External factors such as increased fuel prices or congestion (e.g. due to the NDH build temporary traffic management or successful Travel Demand Management interventions) may increase mode shift to cycling.

Research has shown that the demand for driving is relatively inelastic – most people will continue to drive regardless of the increase in total generalised cost of doing so (Ensor *et al* 2021 – Research Report 674, "Mode Shift to Micromobility"). There is more New Zealand evidence on the impact of TDM measures. For example, workplace travel planning in Christchurch achieved an average reduction in car commuting of 31% amongst participating organisations. For the purposes of this study, a conservative 5% mode shift to cycling across all central city employers due to external factors is assumed.

D.3 Projected demand and distribution

D.3.1 Projected cycle parking demand

Based on the above analysis, the projected number of people parking in a given catchment area at the peak time is:

$$Parking_i = (Commuters_{270i} + 0.5 * Commuters_{450-270i}) * \frac{Parking_{SA}}{Commuters_{SA}} * (100\% + EOT + FacImp + Ext)$$

Where:

- $Parking_i$ = the typical number of cyclists expected to use a facility in a typical weekday
- $Commuters_{270i}$ = the number of workers and students in the 270 m (3 min walk) catchment area around the location concerned (from Census travel to work / education data)
- $Commuters_{450\text{-}270i}$ = the number of workers and students in the 450 m (5 min walk) catchment area minus those in the 270 m catchment area around the location concerned (from Census travel to work / education data)
- $Parking_{SA}$ = the number of bikes parked in public spaces (formal + informal) in the study area (see parking occupancy survey in Table 8-9 and assuming up to a 50% increase depending on the time of day and day of week)
- $Commuters_{SA}$ = the number of workers and students in the entire study area (from Census travel to work / education data)
- *EOT* = percentage increase due to improved end-of-trip provision i.e., Bike Hubs (see section D.2.1)
- *FacImp* = percentage increase due to improved cycling facilities (section D.2.2)
- *Ext* = percentage change due to external factors (section D.2.3)

The equation doesn't include the number of desired locations indicated in the Social Pinpoint survey per meshblock; because these are effectively contained in original central city scope area and would disadvantage those in the new scope area to include University Precinct, or locations at the edge whose catchment area overlaps. It would be difficult to figure out how to weight these in relation to the current jobs metric.

All factors other than number of jobs in the catchment area are constant (at a given sensitivity level). Thus, a multiplier can be produced to be used with the number of commuters in a catchment area, as summarised in Table 8-11:

Table 8-11: Commuters' multipliers

Component	Low	High
Parking SA	125	188
Jobs SA	12 279	12 279
Students SA	2809	2809
EOT	5.0%	10%
FacImp	6.4%	10.5%
Ext	5%	10%
Commuters' multiplier	0.0096	0.0162

This method allows for the calculation of the desirability of a bike hub outside the initial study area (or whose catchment area overlaps the study area boundaries) where parking occupancy and / or desirability data were not collected.

Note that this method was developed for the original scope area, which does not include the main part of the Otago University campus. The same method could be applied the wider area including the campus, but this would require a thorough survey of the existing bike parking occupancy within the campus.

Furthermore, the Census data (travel to education by educational address) does not distinguish between the type of educational facility (primary, intermediate, secondary, or tertiary). Ideally, it would be able to distinguish these as primary schools have notably lower proportions of students biking to school, and all schools are likely to have their own bike parking facilities on-site, with little reason for students to park off-site. However, as there are no schools within the scope area, and only two high schools within a 3-minute walking distance of the scope area, it is assumed that the Census data is suitable for this application.

D.3.2 Commuters in catchment area

The equation depends on the number of commuters (workers plus students) in the catchment area of a bike hub and the remaining terms are constant across the area. Thus the number of commuters is a heatmap for Bike Hub desirability – see Figure 8-8.

The base catchment area for each Bike Hub site is taken as the number of commuters a 3 min walking distance (as the crow flies) i.e. 270 m from the bike hub location. The 3 min travel value has been derived from the intercept survey responses regarding how long people were willing to travel to reach a Bike Hub. The number of commuters within 270 m of each Bike Hubs site is included in the info sheets. The actual catchment area will depend on the relative locations of other Bike Hubs – if catchment areas overlap, they will be divided at the overlap point, to give a unique area for each.

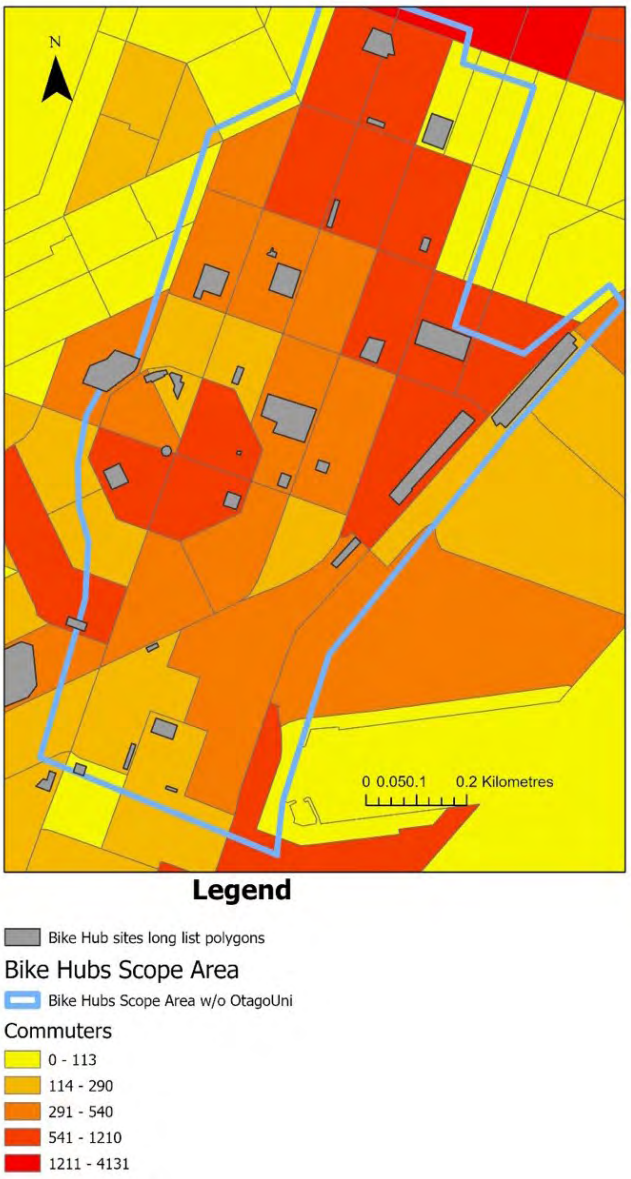


Figure 8-8: commuters heatmap for scope area without Otago University

D.3.3 Demand model results for short list sites

Using the stated procedures, the estimated low and high usage per site (assuming all sites short list sites are developed) are listed in Table 8-12.

Table 8-12: demand model input and results

Location	Commuters (catchment)		Estimated demand		
	270 m	450 m	Low	Medium	High
Otago Museum	6,085	8,919	72	97	122
The Hunter Centre	2,028	3,622	27	37	46
Lower Moray Carpark	1,921	3,427	26	35	43
Lower Stuart St	1,133	2,234	16	22	27
Queens Gardens	1,017	2,142	15	20	26
Subtotal			**157**	**210**	**264**
Users per day – each satellite			2	3	4
Number of satellites			13	13	13
Users per day – all satellites			26	39	52
Total users			**183**	**249**	**316**

The resulting potential buffer areas around each centroid are illustrated in Figure 8-9.

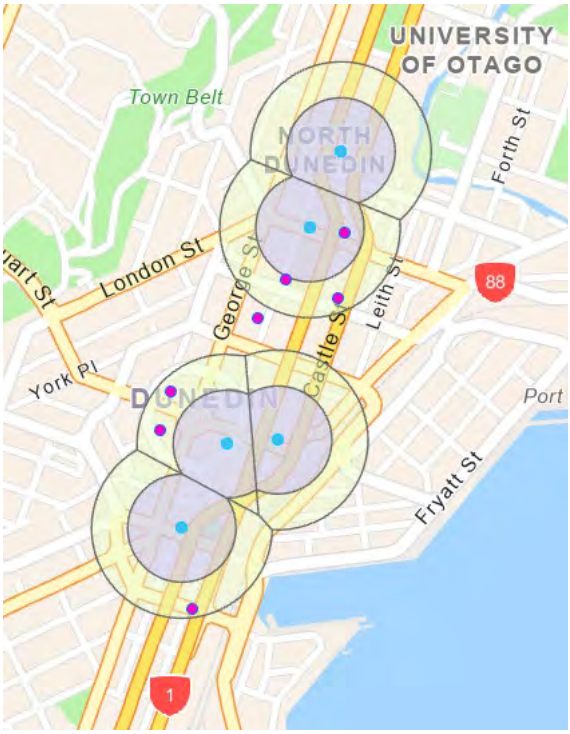


Figure 8-9: short list centroids with 270 m buffers (grey) and 450 m buffers (yellow)

D.3.4 Effect of satellite locations

Each satellite pod is designed to have a maximum capacity of eight bicycles if single level stands are used. Pods may have catchment areas overlapping the catchment areas of the major or connecting sites, and therefore reduce demand at those sites. There will be times when a satellite pod is fully occupied, but a low average usage of between two and four people per day is expected given the other connecting/major hub provisions. Alternatively, there may be either a network or cultural shift creating a step change in demand so that satellite pods are more highly utilised on average.

Appendix E Communications and engagement plan

The following communications and engagement plan includes the following key messages:

Key Messages - External

- We are looking to the future so we can improve active transport by increasing the number of people cycling and scooting into, within, and visiting the central city.
- We know that there is a lack of secure, weather protected cycle / scooter parking options within the central city. The DCC People's Panel survey shows that one of the key barriers for people to take up cycling for their commutes is a lack of safe and secure parking and end of trip facilities.
- We want to provide sheltered, secure bike hubs for the safe storage of bikes / scooters that may also include other facilities such as repair services, bike and scooter hire, toilets, showers, lockers, café or gym.
- We want to discuss this project with you [project partners, key stakeholders, stakeholders and the community] so that you can share your future wants and needs for bike hubs. Your thoughts on where to locate the bike hubs, the design features you consider important for a bike hub, how to implement and operate a bike hub, how to run a business (such as hire facility / café) in a bike hub are vital. Tell us your ideas by answering our surveys, reading our prospectus, contacting us by email or phone or consider joining our working group so we know what is important to you.
- This approach will help inform us of how to deliver Central City Bike Hubs that will encourage more people to choose to cycle / scooter into the central city.
- We want to find locations for bike hubs which are – easy and safe to find and access, known destinations for large number of people (patronage), and support key businesses as well as a large number of small businesses through increased footfall and accessibility.
- The timeframe to construct the Central City Bike Hubs set out the DCC Long Term Plan during 2022 – 2027.
- The Central City Bike Hub project aligns with other DCC projects including the Central City Plan, Strategic Cycle Network and Shaping Future Dunedin Transport.

Key Messages - Internal (Council staff)

- Please encourage your community to answer our surveys, read our prospectus, join our working group, contacting us by email or phone so they can have their say on the project.
- Staff attendance at meetings is critical to the success of the project to effectively participate in internal strategic/planning sessions and to lever off your existing relationships with landowners/business.
- Gathering local knowledge – where are the key new development / growth areas? Which businesses are more likely to want to associate themselves with a publicly accessible bike hub? What are some 'mega trends' for you when thinking about cycling as a way of transport for you and your family?
- Provide a 'safe environment' to test ideas before going out to the wider public.

Engagement principles and objectives

It is recommended that the following general consultation and engagement principles for the project should be:

- To comply with the principles and (preferably exceed the) requirements for consultation under legislation and policies.
- Project partners, key stakeholders, stakeholders and community have a right to expect that their views, concerns and aspirations are consistently understood, are reflected in the alternatives developed and feedback is provided to them on how their inputs influenced decision making.
- To provide project partners, key stakeholders, stakeholders and community with timely information on the project during important stages of the project development.
- Communicate and engage in a way which shows that the Council wants to "tell the story early, tell the truth and tell it themselves". (Therefore Council will be the front face of public engagement and "own" the communications)
- Have as many interested people as possible hear about the Central City Bike Hub project and want to get involved in the process, for example by: answering surveys, online engagement or letters, emails, phone calls and joining the working group (covid restrictions permitting).
- Have a wide cross-section of the interested community engage in the process - Council wants to hear from those groups (not just organised cycling groups) that they wouldn't usually hear from – for example our youth, disabled, mobility impaired, women and elderly.
- DCC hear from their community about what is important to them.
- Go back to the community to let them know what they told us, confirm that we have heard correctly and tell them what will happen next.
- Work towards achieving Council's goal of Net Carbon Zero by 2030 by enabling mode shift.

The communication objectives for the project are to:

- Ensure key target internal stakeholders have an accurate understanding of the project through the provision of consistent and timely reports and information.
- Engage early and constructively with project partners, key stakeholders, stakeholders and community.
- Minimise uncertainty and dispel misinformation.
- Gather feedback on the project to inform the concept design.
- Maintain and enhance existing relationships with partners and stakeholders.
- Enhance Council's reputation for quality delivery of projects and responsiveness to employees, customers, residents and ratepayers, and external operators.
- Manage risks to the project and to Council's reputation.

The full plan also identified stakeholders and engagement methods. A summary of the engagement results is provided in section 2.2.6.

The engagement began with a prospectus (see Figure 8-10) to identify potential private sector partners for operating a major bike hub. This elicited at least two responses from bicycle industry participants, and may be used again in a further call once a major hub site is confirmed.

HOST A BIKE HUB OR RUN A BUSINESS IN A BIKE HUB!

Current situation

More and more people are cycling or scooting to work, shops, or accessing services in our central city. Data from 2019 (pre-pandemic) show nearly 700 people cycled or scooted into the central city on a typical weekday morning – a 26% increase on 2016!

Many more people would cycle but don't want to leave an expensive bike or e-bike outside in the weather and where theft and damage are a concern. Many offices and shops don't have secure indoor bike parking.

The solution

Bike hubs have higher security and capacity than standard cycle stands and are intended for all-day or long-stay parking (not visitor parking). There are generally three types of bike hubs:

High-security bike racks

Locking is built into the system, rather than the user providing the lock. Roof optional.

Typical capacity: 5 – 10

Stand-alone enclosures

Bike lockers, bike hangers, lightweight shelters and single-purpose small structures.

Typical capacity: 1 – 10

Indoor bike stations

Bike parking is one of several uses within a permanent building. Access is usually controlled.

Typical capacity: Unlimited

The opportunity

This is a two-step project.

1. Do you own a suitable property in the central city that has space to host a bike hub? It could be:
   a. A building with an under-utilised basement (with ramp access) or ground floor space
   b. A gym or bike shop or something similar with available space
2. Are you interested in setting up a business (e.g. café, bike rental/repair shop, tourism venture) within a bike hub in the central city?

A bike station in Berkeley, USA with café, retail, servicing, bike rentals, and valet parking for 300+ bikes

How to give feedback or express interest

Please contact us at *transport@dcc.govt.nz* or call 477 4000 by 15 July 2022 to discuss your ideas.

DUNEDIN CITY COUNCIL | kaunihera ō-rōhe o Ōtepoti

03 477 4000 | www.dunedin.govt.nz

Figure 8-10: prospectus

Central City Bike Hubs Single Stage Business Case (Lite)

Communication and Engagement Plan

Rev 7 | May 2022

Prepared by WSP for Dunedin City Council

Document Control Sheet

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Author_ Kelly Blackie / Deb Carstens

Reviewer_ Joao Machado

Approver_ Kevin Wood

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Document History and Status

Revision	Date	Author	Reviewed by	Approved by	Status
Rev 1	28 March 2022	D Carstens	Joao Machado	-	Draft / internal review
Rev 2-4	01-06 April 2022	Deb Carstens / Kelly Blackie	Joao Machado	-	Draft / internal review
Rev 5	06 April 2022	Deb Carstens / Kelly Blackie	Joao Machado	Kevin Wood	Draft version / for issue to client
Rev 6	21 April 2022	Kelly Blackie	Joao Machado	-	Updated following client feedback
Rev 7	17 May 2022	Deb Carstens / Kelly Blackie	Joao Machado	Kevin Wood	Updated version for client feedback

Limitation

This report has been prepared by WSP exclusively for Dunedin City Council ('Client') in relation to the Central City Bike Hub Single Stage Business Case (Lite) Communication and Engagement Plan ('Purpose'). The findings in this Report are based on and are subject to the assumptions specified in the REQUEST FOR TENDER DCC Contract Reference No. 10132.-WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.

Contents

1. About this Communication and Engagement Plan

The purpose of this Communication and Engagement Plan is to set out a clear framework for developing and managing the engagement and relationships with project partners, key stakeholders, stakeholders and the community for the Central City Bike Hubs Single Stage Business Case lite (hereafter referred to as 'the Project'). It aims to guide the process for implementing stakeholder engagement to ensure the right people and groups are approached and provided with information and ample opportunities to be meaningfully involved in the project.

This Plan outlines:

- the nature and background to the project;
- the engagement principles, objectives and outcome sought;
- a framework for engagement;
- the protocols to be followed for all communication and engagement;
- the parties to be involved in communication and engagement; and
- the tools and activities to be used in conducting communication and engagement.

This is an internal live document that should be reviewed and amended as necessary throughout the duration of the project. This allows for flexibility and adaptability in the engagement process, in order to respond to the specific needs of project partners, key stakeholders, stakeholders and the community. As such, the groups and individuals identified, and engagement methods selected may change through the phases of the project's delivery.

Approval of Engagement Plan - The preparation of this Communication and Engagement Plan was led by Deb Carstens, Kelly Blackie and Joao Machado, WSP Dunedin with input from Via Strada for issue to Dunedin City Council as Client.

2. Background

The Shaping Future Dunedin Transport (SFDT) is a collaborative partnership between Waka Kotahi NZ Transport Agency, Otago Regional Council and the Dunedin City Council (DCC) to improve how people move into, out of and around central Dunedin. The partnership was formed in response to a Ministry of Health request to Waka Kotahi and DCC to look at a change to roads to improve access and integration between Dunedin Public Hospital and the city, including considering a change to the configuration of SH 1 through Dunedin. The collaborative partnership has recently released (Aug 2021) a SFDT business case that addresses access to the city by all transport modes to: enable integration of the new hospital with the city; stimulate economic growth and regeneration; provide for safe and accessible people friendly street and improve city liveability.

The Central City Bike Hubs project has been identified in the SFDT Business Case to provide adequate end of trip facilities that support and promote active transport as a viable travel option for commuters and visitors to the central city. This project is a crucial component of the wider cycling network in Dunedin in terms of providing better conditions for cycling as a main form of transport – be it daily long commutes or short trips between places of work, shops, education facilities or other such destinations within the wider central city precinct.

Waka Kotahi – National land Transport Programme

Waka Kotahi's: National Land Transport Programme (2021 – 2024) work programme includes a total of $15 million for safety and accessible upgrades in the central city and $19 million to accelerate the development of the city's cycle network. Construction is underway on the $32 million SH88 Dunedin to Port Chalmers improvements project that includes building the final 5km section of the SH88 shared cycling/walking path between St Leonards and Port Chalmers. The path is expected to increase the uptake of walking and cycling as a viable commuting option between Port Chalmers and Dunedin. Concurrent with that and completing the 'round the harbour cycleway network', work will be completed on the $22 million Company Bay to Broad Bay section of the Otago Peninsula connection road safety improvements and shared walking and cycling project from Dunedin to Portobello and the Otago Harbour entrance. The last sections of this project will be delivered in 2021/22 (part of Broad Bay and Portobello).

Dunedin City Council – Strategic Cycle Network and LTP

The DCC Strategic Cycle Network (2011) sets out the priority routes for cycling and the key links between destinations for users, identified through consultation and engineering assessments and has guided the DCC in selecting routes for cycle facilities. The purpose of the Strategic Cycle Network has been to reprioritise investment and reallocate space on the transport network to achieve a significant improvement in the provision of active travel modes and public transport in Dunedin and explore initiatives to support the uptake of multi-modal travel choices. To date, the Strategic Cycle Network has delivered 30% (54km) of the 178km outlined in the plan.

A business case for the Dunedin Tunnels Trail project is nearing completion. If approved, it will be an off road walking and cycling trail linking Mosgiel, Abbotsford and Green Island to the Central City and is expected to be constructed between 2023-2026.

The DCC Long-Term Plan 2021- 31 and Waka Kotahi Low Cost Low Risk fund have allocated $2.45m (during 2022 – 2027) for the Central City Bike Hubs project. The aim of the project, as outlined in the Long-Term Plan, is to establish one or more facilities where cyclists can lock their bikes in sheltered lockers often associated with other facilities (which may include repair and changing services) in the central city.

Dunedin City Council – Central City Plan

The Dunedin City Council's Central City Plan (CCP) sets out a series of projects and priorities to be implemented over the next 10 – 15 years that focus on improving the quality of the public realm through infrastructure and streetscape renewal and upgrades. The CCP was developed with extensive stakeholder and community input and has informed Central City Project budgets in the DCC 10 year plan 2021-2031. The ten projects in the CCP include:

Central City Bus Hub

- The development of a Central City Bus Hub as identified in the ORC's Draft Regional Public Transport Plan and is integral to the success of the proposed new network.

George Street Amenity and Safety Upgrade

- Works to enhance safety and the 'look and feel' of George Street and the broader retail area, as well as the water main and paving renewals which need to be undertaken. George Street will be a slow speed environment that will enable more people to cycle safely through the central city.

Bath Street - amenity improvements and 3-waters renewals

- The Bath Street Upgrade Works include the renewal of a collapsed water course/ stormwater pipe that runs between Lower Stuart Street, beneath buildings along Bath Street, before joining a manhole in Moray Place. The works also include the replacement of the 3 waters infrastructure beneath Bath Street. Directly affected stakeholders consultation is currently underway on the 3-waters renewals works underground and public realm upgrades.

Octagon Upgrade

- Primarily an amenity project, intended to enhance the Octagon as a vibrant, exciting, civic space, accessible by the widest range of users.

Lower Stuart Street Amenity & Safety Upgrade

- Works to improve the safety and the 'look and feel' of lower Stuart Street and the area around the Railway Station and Toitū Otago Settlers Museum.

Queens Garden Upgrade

- Works to improve the areas within and around the Queens Gardens as both a commemorative and recreational space. Associated works include improvements to adjoining areas to make pedestrian and cycle access to visit Queens Gardens easier and to provide a greater connection between the Warehouse Precinct and the rest of the Central City.

City to Harbour Connection

- Provide a link from the Central City more directly and safely to the Steamer Basin/Harbourside for pedestrians and cyclists i.e. form of connection through a bridge.

Vogel Street and Bond Street Amenity Improvements

- Improving the appearance of Bond, Vogel and adjoining streets to recognise growing residential activity in the area and provide a compelling environment for creative and business activity. In addition, works to improve pedestrian safety and convenience and to make the area safer for other modes of transport, particularly cyclists in Vogel Street, which is part of the Strategic Cycle Network.

Strategic Corridors: Warehouse Precinct Accessibility Improvements

- Reduce the severance between the Warehouse Precinct and rest of the Central City caused by the one-way state highway network on Crawford Street and Cumberland Street. Implement interventions to improve pedestrian and cycle safety and enhance the amenity of the area.

Exchange Square Upgrade

- Occupies the area in front of John Wickliffe House at the axis of Princes Street, Rattray Street and High Street. The square is an important urban open space in the southern part of the central city and is popular with office workers. The upgrade aims to make the space more engaging and interesting, somewhere that will attract users and visitors' day and night and act as a hub for the growing creative and economic activity in the area.

Princes Street Amenity & Safety Upgrade

- Works to improve the safety and the 'look and feel' of Princes Street and intersecting streets. These improvements will be undertaken simultaneously with renewal and upgrade of the aging '3 waters' infrastructure.

Dunedin City – Shaping Future Dunedin Transport Programme

The Shaping Future Dunedin Transport (SFDT) Programme was completed in 2021 by the Connecting Dunedin partners (Dunedin City Council, Otago Regional and Waka Kotahi NZ Transport Agency). The programme identified a number of DCC projects within the central city. The remainder of the Dunedin City projects are:

Mosgiel and Burnside Park and Ride

- Facilities to provide an attractive alternative to driving and reduce parking demand and traffic in the central city. A single stage business case for the Mosgiel Park and Ride facility is currently being developed with construction expected by 2024.

Harbour Arterial Improvements

- Signage, wayfinding corridor and intersection improvements to the harbour arterial route to improve safety and efficiency for freight vehicles accessing the port and to provide an alternative route during the New Dunedin Hospital construction period.

Parking Management Programme

- Introduction of a parking wayfinding system, improvements to parking technology (sensors, meters) and a potential change to demand responsive pricing approach for the management of parking.

Central Cycle and Pedestrian Safety

- Safety and infrastructure improvements including the Albany Street cycleway project, possible improvements to St Andrew Street (completed in conjunction with the SH88 Relocation project, and improvements at Bank/George Street.

Princes Street Bus Priority and Corridor Safety Plan

- Improvements to safety for all modes, provision of bus priority and improvements to walking and cycling access along and across Princes Street to bus stops and other destinations.

The Central City Bike Hubs project is to be designed and implemented in a manner that takes account of the outcomes sought from the projects identified in the Central City Plan and the SFDT Programme.

Dunedin is experiencing a period of rapid change with several large developments underway. These include:

- The New Dunedin Hospital - the largest single investment in health in NZ's history which will be located in the central city between the one-way pair. Construction is commencing this year and is expected to be completed in 2028.

- The University of Otago Health Precinct Plan has been released which shows their vision for the area from the new Dunedin Hospital to the brand-new School of Dentistry Clinical Services Building which are expected to be completed over the next 20-30 years.

- ACC development of the Dowling Street carpark. Construction has begun at the site with the current public toilets being removed. It is expected that new public toilets will be installed around the off-street parking near the corner of the one-way north and Rattray Street.

3. Project Objective

Over recent years, there has been significant commitment by the collaborative partners within Dunedin to the provision of cycling infrastructure through the ongoing implementation of the work programmes set out in the DCC Long-Term Plan, DCC Strategic Cycle Network, DCC Central City Plan, Waka Kotahi National Land Transport Programme, and the SFDT business case initiative. This continued investment has seen cycling becoming a more attractive option for people to get around the city and travel to and from work. Data from 2019 (pre-pandemic) shows that approx. 700 people cycled or scootered into the central city on a typical weekday morning, an 26% increase from 2016.

One of the main obstacles identified to improving cycling / e-scooter opportunities into the central city is the lack of appropriate public bike / scooter parking. Public bike parking is distributed across the city where there is space at the side of the footpath. There are approximately 235 bike stands that have been installed on an ad-hoc basis or as part of projects within the city. There are only two existing covered bike parking locations within the central city (Vogel Street and Moray Place). Most workplaces and visitor destinations have no secure bike parking facilities available for their visitors or employees. Where no bike parking is provided, cyclists chain their bikes to the street furniture e.g. lighting poles, handrails, parking sign poles and fences. This can obstruct the footpath and create a hazard in particular for pedestrians and mobility impaired / people on wheelchairs.

Recent feedback from surveys (undertaken with DCC panellists) has identified that if people are not confident that they can park their bike/e-scooter safely and securely for long durations, they are less likely to use active transport as a regular commuting mode.

WSP has been appointed to deliver a Single Stage Business Case Lite (SSBC Lite) that outlines the suitable number of bike hubs with their locations and level of service, how they will be accessed and operated and what the implementation and delivery strategy is for each hub and the overall programme. This will be supported by data-based evidence on current and future demand, suitability of sites, level of service, etc. Design concepts and plans will need to be provided that include wayfinding and safe access to the hubs from the active transport network. The timeframe for the project has been identified in the DCC Long Term Plan during 2022 – 2027.

Key Messages - External

- We are looking to the future so we can improve active transport by increasing the number of people cycling and scooting into, within, and visiting the central city.
- We know that there is a lack of secure, weather protected cycle / scooter parking options within the central city. The DCC People's Panel survey shows that one of the key barriers for people to take up cycling for their commutes is a lack of safe and secure parking and end of trip facilities.
- We want to provide sheltered, secure bike hubs for the safe storage of bikes / scooters that may also include other facilities such as repair services, bike and scooter hire, toilets, showers, lockers, café or gym.
- We want to discuss this project with you [project partners, key stakeholders, stakeholders and the community] so that you can share your future wants and needs for bike hubs. Your thoughts on where to locate the bike hubs, the design features you consider important for a bike hub, how to implement and operate a bike hub, how to run a business (such as hire facility / café) in a bike hub are vital. Tell us your ideas by answering our surveys, reading our prospectus, contacting us by email or phone or consider joining our working group so we know what is important to you.
- This approach will help inform us of how to deliver Central City Bike Hubs that will encourage more people to choose to cycle / scooter into the central city.
- We want to find locations for bike hubs which are – easy and safe to find and access, known destinations for large number of people (patronage), and support key businesses as well as a large number of small businesses through increased footfall and accessibility.
- The timeframe to construct the Central City Bike Hubs set out the DCC Long Term Plan during 2022 – 2027.
- The Central City Bike Hub project aligns with other DCC projects including the Central City Plan, Strategic Cycle Network and Shaping Future Dunedin Transport.

Key Messages - Internal (Council staff)

- Please encourage your community to answer our surveys, read our prospectus, join our working group, contacting us by email or phone so they can have their say on the project.
- Staff attendance at meetings is critical to the success of the project to effectively participate in internal strategic/planning sessions and to lever off your existing relationships with landowners/business.
- Gathering local knowledge – where are the key new development / growth areas? Which businesses are more likely to want to associate themselves with a publicly accessible bike hub? What are some 'mega trends' for you when thinking about cycling as a way of transport for you and your family?
- Provide a 'safe environment' to test ideas before going out to the wider public.

4. Communication and Engagement Objectives

It is recommended that the following general consultation and engagement principles for the project should be:

- To comply with the principles and (preferably exceed the) requirements for consultation under legislation and policies.
- Project partners, key stakeholders, stakeholders and community have a right to expect that their views, concerns and aspirations are consistently understood, are reflected in the alternatives developed and feedback is provided to them on how their inputs influenced decision making.
- To provide project partners, key stakeholders, stakeholders and community with timely information on the project during important stages of the project development.
- Communicate and engage in a way which shows that the Council wants to "tell the story early, tell the truth and tell it themselves". (Therefore Council will be the front face of public engagement and "own" the communications)
- Have as many interested people as possible hear about the Central City Bike Hub project and want to get involved in the process, for example by: answering surveys, online engagement or letters, emails, phone calls and joining the working group (covid restrictions permitting).
- Have a wide cross-section of the interested community engage in the process - Council wants to hear from those groups (not just organised cycling groups) that they wouldn't usually hear from – for example our youth, disabled, mobility impaired, women and elderly.
- DCC hear from their community about what is important to them.

- Go back to the community to let them know what they told us, confirm that we have heard correctly and tell them what will happen next.
- Work towards achieving Council's goal of Net Carbon Zero by 2030 by enabling mode shift.

The communication objectives for the project are to:

- Ensure key target internal stakeholders have an accurate understanding of the project through the provision of consistent and timely reports and information.
- Engage early and constructively with project partners, key stakeholders, stakeholders and community.
- Minimise uncertainty and dispel misinformation.
- Gather feedback on the project to inform the concept design.
- Maintain and enhance existing relationships with partners and stakeholders.
- Enhance Council's reputation for quality delivery of projects and responsiveness to employees, customers, residents and ratepayers, and external operators.
- Manage risks to the project and to Council's reputation.

5. Consultant Communication Deliverables

- Manage and resource (alongside Council staff) community consultation and engagement;
- Provide attendance and technical information as determined by the project manager;
- Fully document responses from in person and online consultation. Respond to all emails, phone calls, requests for meetings and letters within three working days. Provide a summary document containing all feedback for the design and review process for project team and design team at the end of the engagement and consultation period (a draft to be provided five working days);
- Manage development of appropriate collateral/ communications material for general distribution;
- Provide client designs, maps, concepts images etc that are suitable for external audiences;
- Provide regular and timely updates and/or content for use by client on client communications assets and/ or channels;
- To maintain engagement plans, communication processes and key relationships to inform the future project phases; and
- Provide any information requested by client for media releases and other public information products (client will prepare any media/political communication).

6. Engagement Approach and Methods

Our proposed engagement approach to the project seeks to engage with project partners, key stakeholders, stakeholders and community early in the process and regularly to ensure their concerns, aspirations and insights are factored into the project before key decisions are made. It also brings project partners, key stakeholders, stakeholders and the community along on the journey of the project through an informed and participatory process that leads to a clear project direction and successful design solutions.

The engagement and consultation process for the project will involve a wide range of participants. It is not practical or desirable to involve everyone equally in the design process. To ensure that everyone involved in or impacted by the project is engaged authentically, the International Association for Public Participation (IAP2) Spectrum of Participation framework helps to organise how different individuals, groups, organisations and authorities participate in the design and decision-making process. This framework identifies all project collaborators and stakeholders, the degrees of influence they have at different stages of the project and on the final outcome. The spectrum has five broad groupings with decreasing levels of involvement and influence on the project.

Project Team - The Project Team is empowered to provide recommendations for final outcomes. The Project Team is committed to facilitating meaningful participation for all parties.

Project Partners - Project Partners collaborate with the project team in each aspect of the process including the development of alternatives and the identification of the preferred solutions. The commitment to Project Partners is to look to them for advice and innovation and incorporate this in decisions as much as possible.

Key Stakeholders – Prepare a comprehensive list of possible Key Stakeholders. Identify those Key Stakeholders that seek to be involved throughout the process to ensure that their concerns and aspirations are consistently understood and considered. The commitment to Key Stakeholders is to work with them to ensure their concerns and aspirations are directly reflected in the decisions made. Key stakeholders will be approached to provide an opportunity to form a working group to directly inform the development of the Central City Bike Hub process.

Stakeholders - Stakeholders are consulted to obtain feedback on analysis, alternatives and/or decisions. The commitment to Stakeholders is to listen to them and acknowledge their concerns.

General Public - The General Public are informed with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions. The commitment to the General Public is to keep them informed.

The spectrum of participation table below provides an overview and draft guide of the roles and influence of different people, organisations and communities in planning and decision-making processes through the development of the project.

We understand that it is vital to the success of this project that all stakeholders are engaged early and regularly updated to ensure the programme does not suffer any delay. A copy of the final agreed project programme (part of the project execution plan) shall be distributed to relevant partners and stakeholders so that expectations are clear from the outset. The design team shall maintain a close and regular relationship with both the project team and project partners. We will engage early with all parties, with regular touch points prior to the draft town concept plan presentations and public consultation. A risk register will capture and manage all opportunities and risks that arise during the project, which will be shared frequently with the project team and project partners for review and necessary action.

7. Project Spectrum of Participants

AUDIENCE	**Project Team**	**Project Partners**	**Key Stakeholders**	**Stakeholders**	**General Public**
PARTICIPATION	**Empower**	**Collaborate**	**Involve**	**Consult**	**Inform**
Goal	Group manages a successful process and provides recommendations for final outcomes.	Partner in each aspect of the process including providing strategic direction, shaping of the process, the development of options and alternatives and identification of preferred solutions.	Work directly with key stakeholders throughout the process to ensure that their concerns and aspirations are consistently understood and considered.	Obtain feedback on analysis, alternatives and/or decisions.	Provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.
Commitment	*"Facilitate meaningful participation for all parties".*	*"We will look to you for direction, advice and innovation and incorporate this in decisions".*	*"We will work with you to ensure your concerns and aspirations are directly reflected in the process and decisions made".*	*"We will listen to and acknowledge your concerns".*	*"We will keep you informed".*
Typical Engagement Methods	Co-design workshops / meetings / site hikoi - site observation / Internal design critique.	Co-design workshops / interactive board games / meetings / Hui / Project update presentations.	Focus Groups and Interviews / Surveys / interactive board games / Site activations / Stakeholder meetings	Public open days and meetings / Site activations / Online engagement / surveys / Interactive public display.	Public open days / Media release / collaboration with local publishers/ surveys promoted on social media via the Connecting Dunedin website

8. Participants and Their Needs

Spectrum of Participants	Participants contact details	Level of interest (low/medium/ high)	Ability to impact (low/medium /high)	What we want from participant	What participant wants from us
Project Team					
Dunedin City Council Project Team	• Stacey Hitchcock – Project Lead / Transport Planner • Ian Martin – Principal Advisor Road Safety / Transport Engineer • Jamie Shaw – Communications Advisor / Communications • Nick Sargent – Transport Strategy Manager / SFDT Programme Director • Glen Hazelton – Project Director CCP / CCP • Maria Sleeman – Property Officer / Public Toilets • Paula Dickel – Property Advisor / Property • Erik Teekman – Waka Kotahi Principal Advisor Urban Mobility	High	High	Ongoing engagement and collaboration as project team members Contribute ideas to the design team for innovation across all aspects of the project Provide timely comment and feedback to the design team on the outcomes of the project Reporting of the project to Elected Officials	To collaborate with the design team in each aspect of the process including the development of alternatives and the identification of the preferred solutions To be involved in key decisions To listen and check that the design team have understood all feedback correctly To ensure the on time, on budget delivery of a series of meaningful, quality outcomes To be transparent, approachable, warm, and timely

Design Team	• Stacey Hitchcock – Project Lead / DCC • Nick Sargent – Connecting Dunedin Projects Lead (DCC) • Kelly Blackie – Project Manager / Business Case Lead (WSP) • Kevin Wood – Project Director (WSP) • Joao Machado – Work Group Manager (WSP) • Peter Kortegast- Economic Evaluation (WSP) • Deb Carstens – Stakeholder Consultation and Engagement (WSP) • John Lieswyn – ViaStrada Project Manager, Demand Modelling Lead, Commercial Case Lead (ViaStrada) • Glen Koorey- Reviewer (ViaStrada) • Megan Gregory- Demand Modelling (ViaStrada) • Luca Ware – Transport Planner (Via Strada)	High	High	Ongoing engagement and collaboration as design team members Implement the Communication and Engagement Plan with project partners / working group / key stakeholders / stakeholders & community Develop ideas with the project team for innovation from implementing Communication and Engagement Plan Prepare the outcomes / deliverables including the co-design workshops and the design plan for the project	To collaborate with the project team in each aspect of the process including the development of alternatives and the identification of the preferred design solutions To deliver on time, on budget, a series of meaningful, quality outcomes To be transparent, approachable, warm, and timely
Elected Officials	To be confirmed	High	High	Become champions within their community for the project	Involvement in process and early and ongoing engagement and communication

					To assist in delivering a high quality project that represents community aspiration and is realistic and deliverable
Project Partners					
Waka Kotahi NZ Transport Agency		High	High	Ongoing engagement and collaboration as partners Contribute ideas for innovation across all aspects of the plan Contribute creative ideas to assist in solving design challenges	Collaboration and partnership
Otago Regional Council		High	High	Ongoing engagement and collaboration as partners Contribute ideas for innovation across all aspects of the plan Contribute creative ideas to assist in solving design challenges	Collaboration and partnership
Ministry of Health (New Dunedin Hospital)		High	High	Investigate partnership options as part of new Dunedin Hospital rebuild	Collaboration and partnership Potential bike hub site owner / operator – to be confirmed

				Contribute ideas for innovation across all aspects of the plan Contribute creative ideas to assist in solving design challenges	
University of Otago / OUSA		High	High	Investigate partnership options with University of Otago Contribute ideas for innovation across all aspects of the plan Contribute creative ideas to assist in solving design challenges	Collaboration and partnership Potential bike hub site owner / operator – to be confirmed
Kainga Ora		High	High	Investigate partnership options with Kainga Ora Contribute ideas for innovation across all aspects of the plan Contribute creative ideas to assist in solving design challenges	Collaboration and partnership Potential bike hub site owner / operator – to be confirmed
Kiwi Rail		High	High	Investigate partnership options with Kiwi Rail	Collaboration and partnership

				Contribute ideas for innovation across all aspects of the plan Contribute creative ideas to assist in solving design challenges	
Aukaha	Caron Ward (urban design and cultural expression) Dr Kate Timms-Dean (Mana Taiao) Michael Bathgate (Senior Planner)	High	High	Aukaha has requested to receive updates as project milestones are reached and will be approached for comment/feedback They have also expressed a desire to be involved in identifying opportunities for cultural expression through the design of the urban realm	Collaboration and partnership Recognise, reflect, and champion the aspirations and values of Aukaha To walk kindly and avoid significant cultural sites To provide an alignment between DCC and future Aukaha plans and investments
ACC		High	High	Investigate partnership options with ACC Contribute ideas for innovation across all aspects of the plan Contribute creative ideas to assist in solving design challenges	Collaboration and partnership Potential bike hub site owner / operator – to be confirmed

Key Stakeholders					
Tertiary Education Providers	Otago Polytechnic Dunedin College of Education	Med	Med	Investigate partnership options for bike hubs with education providers Identification of whether they wish to join key stakeholder group to help inform design, location, levels of service, etc (where these key stakeholders are also future 'potential high-users' Feedback on options, ongoing engagement and buy-in Become champions within student community for project	Involvement in process early and ongoing engagement and communication Receive information about the project, be kept informed
Local Schools	Otago Girls' High School, Otago Boys' High School, Kavanagh College, Logan Park High School, St Hilda's Collegiate, Columba College	Med	Low	Feedback on options, ongoing engagement and buy-in	Ongoing engagement and communication. Receive information about the project, be kept informed
Community Reference/User Groups or Organisations	Spokes Better Streets Mountain Biking Otago Cycle Advocates Network (CAN) AOK Social Riders	High	Med	Identification of key issues from cycling community relating to the bike hubs project	Involvement in process early and ongoing engagement and communication

	Cycling Otago Sport Otago			Identification of whether they wish to join key stakeholder group Feedback on options, engagement, collaboration Become champions within cycling community for project	
Disability/Mobility Groups	CCS Disability Action Age Concern Otago	Med	Med	Identification of key issues for disabled community from bike hubs project. Identification of whether they wish to join key stakeholder group Feedback on options, ongoing engagement and buy-in	Involvement in process early and ongoing engagement and communication
Regional Tourism	Enterprise Dunedin	Med	Med	Feedback on options, ongoing engagement and buy-in Identification of whether they wish to join key stakeholder group	Involvement in process early and ongoing engagement and communication
Crown Agencies	Ministry for Housing and Urban Development Heritage NZ	Med	Med	Feedback on options, ongoing engagement and buy-in	Involvement in process early and ongoing engagement and communication

				Identification of whether they wish to join key stakeholder group	
Property Owners / Business Interest garnered by prospectus and direct contact	To be Identified	Med	Med	Feedback on options, ongoing engagement and buy-in Identification of whether they wish to join key stakeholder group Partnership opportunities to establish bike hubs / operate business within a bike hub	Involvement in process early and ongoing engagement and communication
Supermarkets	Countdown – 309 Cumberland Street New World – Centre City Mall	Med	Low	Feedback on options, ongoing engagement and collaboration	Ongoing engagement and communication

Stakeholders					
Cycle Businesses / Traders	Cycle World Off The Chain Cycles My Ride Dunedin Evo Cycles Electrify NZ Dunedin	Med	Low	Feedback on options, ongoing engagement and collaboration Become champions within community for project	Ongoing engagement and communication Potential bike hub site owner / operator – to be confirmed.
Fitness / Gym Business / Traders	To be identified	Med	Low	Feedback on options, ongoing engagement and collaboration Become champions within community for project	Ongoing engagement and communication
Meridian Mall / Wall Street Mall		Med	Low	Feedback on options, ongoing engagement and buy-in	Ongoing engagement and communication
Chamber of Commerce		Med	Low	Feedback on options, ongoing engagement and buy-in	Ongoing engagement and communication
Emergency Services	NZ Police, FENZ, NZ Civil Defence	Med	Med	Feedback on options, ongoing engagement and buy-in	Ongoing engagement and communication
Local Churches	First Church St Paul's Knox Presbyterian Elim Church	Med	Low	Feedback on options, ongoing engagement and buy-in	Ongoing engagement and communication
Other Key Dunedin Facilities	Otago Farmers Market I - Site Museums & Art Gallery Dunedin Library	Med	Low	Feedback on options, ongoing engagement and buy-in	Ongoing engagement and communication

	Dunedin Stadium Dunedin Railway Station				
General Public					
Wider Dunedin Community		Med	Med	Feedback on options, ongoing engagement and buy-in. Opportunities for engagement through online feedback forms, Social Pinpoint, and drop-in's – e.g. coffee carts for morning commuters	Ongoing engagement and communication

9. Participant Engagement Action Plan

Participants	Method	Engagement frequency	Date(s) and location	Activity / Owner	Activity progress
Dunedin City Council Project Team	Project Team Meeting	Fortnightly	Online Meetings i.e. Microsoft Teams	Stacey Hitchcock / Kelly Blackie	Comment and feedback on deliverables, update on progress against milestones
Design Team	Project Team Meeting	Fortnightly	Online Meetings i.e. Microsoft Teams	Stacey Hitchcock / Kelly Blackie	Design and technical advice / input on consultation material, workshop material, design and development plans
Project Partners	Project Partner Meeting	Monthly	Online Meetings i.e. Microsoft Teams	Stacey Hitchcock / Kelly Blackie	Partnership meetings to discuss option of providing bike hubs onsite or adjacent to New Dunedin Hospital / Uni of Otago / Kainga Ora sites Design and technical advice / input on consultation material and attend the workshop Comment and feedback on deliverables, update on progress against milestones
Elected Officials	Memo /Report to Officials on purpose of project / key deliverables / milestones / opportunities for feedback (inc. Latent Demand Research & Prospectus)	To be confirmed	Memo / Report to Officials	Stacey Hitchcock / Jeanine Benson	Update memo / reports to Committee Updated through Connecting Dunedin Governance Group

Aukaha	Written updates / opportunities for feedback	Monthly	To be confirmed	Stacey Hitchcock / Deb Carstens	Update memo
Working Group comprised of representatives of interested key stakeholders.	Working Group Meetings	Monthly	Online Meeting i.e. Microsoft Teams	To be confirmed	Upfront engagement on the bike hubs project, comment and feedback on deliverables; Attendance at co-design workshop
Key Stakeholders	Letters, Emails, Phone calls, Online Meetings as required;	Initial contact, regular updates at key milestones seeking comment / input	Letters / Emails / Phone / Online Meeting i.e. Microsoft Teams	To be confirmed	Upfront engagement on the bike hubs project, comment and feedback on deliverables
Stakeholders	Letters, Emails, Phone calls, Online meetings as required Co-ordinating with identified property owners / businesses seeking to collaborate with bike hubs project;	Initial contact, regular updates at key milestones seeking comment / input	Letters / Emails / Phone / Online Meeting i.e. Microsoft Teams Ongoing meetings with identified property owners / businesses seeking to collaborate on bike hubs project.	To be confirmed	Upfront engagement on the bike hubs project, comment and feedback on deliverables
Wider Dunedin Community	Response to Survey (Latent Demand Research) Public engagement	Once: Survey Results (Latent Demand Research); Once, during public	Website updates: public engagement period – seeking feedback / results of feedback;	To be confirmed	Upfront engagement on the bike hubs project, opportunities for comment and feedback on deliverables

	Period: DCC Website – feedback via email, letters, phone calls, drop-in's – e.g. project info displays outside local café or coffee carts for morning commuters, identification of possible events popular to engage with cyclists groups. General Enquiries: Emails and phone calls;	engagement period followed up by reporting on feedback at the end Ongoing - General Enquiries: responses to letters, emails, phone calls & DCC website specific requests for information within three working days	General enquiries: Responses to letters / Emails / Phone calls / Request for meetings		
Otago Daily Times	Public information via news and social media	Once, during public engagement period - followed by feedback at the end	Media Releases	DCC Coms Person	Upfront engagement on the bike hubs project, opportunities for comment and feedback on deliverables

10. Proposed Partner and Stakeholder Activities

This is an internal live document designed to be reviewed and amended as necessary throughout the duration of the Project. As such, the communication and engagement methods may change through the phases of the project delivery. Below is an initial skeleton of the proposed communication and engagement activities for the project. The intent is that this will be updated and refined throughout the duration of the project in collaboration with the Council, partners and key stakeholders, depending on their needs.

10.1 Roles and Responsibilities – Project Team

The Project Manager and Engagement Lead will facilitate and lead the engagement process for the project.

10.2 Recording Stakeholder Feedback

Record of consultation/communication

- All feedback will be recorded and considered for action
- All meetings will be minuted
- All communication records including meeting notes, stakeholder feedback and organised consultation events to be recorded.

The record will include:

- The name of the person or group,
- Contact details, and
- Summary notes of the key issues or potential opportunities
- Any undertaking or agreements reached

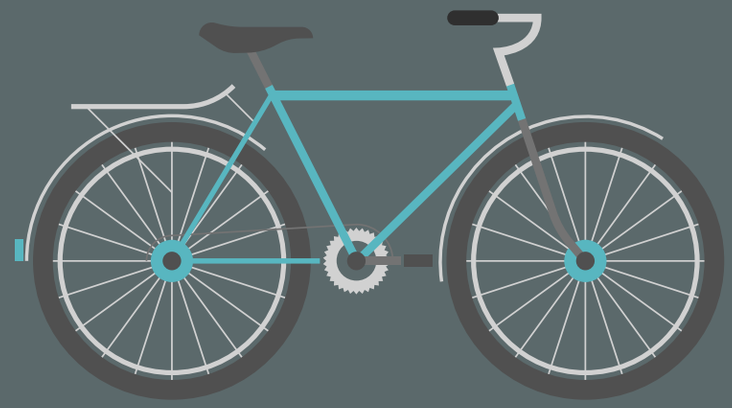
10.3 Communications and Engagement Methods

Communications Methods	Activity owner	Activity progress
Online Survey – Latent Demand Research: This includes an online survey of current users (including commuters and students) to identify key destinations, existing use of various cycle parks distributed around the city, most desirable locations for new bike hubs, stated preferences for the design and "willingness to pay" to use bike hubs within the central city. The survey will be distributed through University of Otago groups facebook and Spokes Dunedin).	WSP/ Via Strada	
Prospectus - this document will be used to garner interest from property owners to host a bike hub and businesses who would like to co-locate with one of the bike hubs. This includes buildings with an under-utilised basement (with ramp access) or ground floor space; a gym or bike shop etc. with available or potential adjacent space; a company wishing to set up a business (café, bike rental / repair, bike hire, tourism) within a bike hub. Distribution of prospectus to: Chamber of Commerce (for distribution) Enterprise Dunedin. Include in Glen Hazelton's Central City Plan newsletter (currently has around 200-300 recipients) Bike shop owners and Neuron (current E-scooter provider in Dunedin) Central City gyms FYI pamphlet	WSP /ViaStrada/DCC	
Initial set up meeting with project partners to identify process for ongoing engagement / involvement	WSP / DCC	complete
Media Statement and project website	WSP / DCC	
Councillors to be briefed through DCC internal channels	DCC	

Discussions with key stakeholders/stakeholders (where these are not identified as potential locations / building owners or operators) through responses from the survey and prospectus, explaining about the project and opportunities for involvement in working groups. The working groups will help inform the types of facilities (including levels of service, costs, accessibility) and preferred location(s).	WSP / DCC	
Online focus within DCC website. Include all up to date information about the project/process and provide a contactless feedback zone.	DCC	
Working group meetings – with key stakeholders representatives.	WSP / DCC	
On-going meetings with identified key property owners / businesses wishing to collaborate with bike hubs project. Note: number of meetings to be confirmed as project evolves.	WSP / DCC	
Co-design workshop with working group, project team and design team. Those who can't attend the workshops being made aware they can provide feedback/ideas in another format. Encourage a good cross section of the community to feed into the process.	WSP / DCC	
Engagement Methods	**Activity owner**	**Activity progress**
Co design workshops facilitated by the design team. These workshops create a space for creativity and collaboration between client, partners, stakeholders and the consultant. It is rooted in participatory design and human-centered design and aims to involve participants in the early phases of the design process.	WSP / DCC	
Staff knowledge of design plan is thorough, so they are confident in providing/clarifying information at workshops.	WSP / DCC	
Internal design crits. This refers to analysing a design and giving feedback on whether it meets its requirements and objectives. A design critique usually takes place as a group conversation with the goal of improving a design.	WSP	

Meetings / hui / presentations. These are available to working group / key stakeholders and represent an opportunity to tailor messages or needs for specific audiences. These can also take place in 'pop up' form at shops, community events or on the main street.	WSP / DCC	
Use of Social Pinpoint – digital app. Social Pinpoint is a customisable community interaction platform that is widely used by local government, designers and community groups for various types of community engagement. Social Pinpoint helps to manage, track and analyse large amounts of online community feedback. Social Pinpoint can host online forums, ideas wall, survey and has online mapping capabilities that help to build a clear picture of how a community understands a site and its unique characteristics and history. Social Pinpoint can be used in a workshop setting as well as online. The combination of online and offline tactics helps to reach a wider community and increase participation rates, particularly in the current COVID-19 environment	WSP / DCC	
Site Activation & Placemaking. These can include on the ground trials, public engagement events or art displays, tactical urbanism (creation of new spaces or use of space through temporary or long-term design interventions)	WSP	

Appendix F Engagement summary report



DCC CENTRAL CITY BIKE HUBS

Single Stage Business Case

Engagement Feedback Summary

ENGAGEMENT PERIOD:
20TH JUNE- 15TH JULY 2022

wsp

DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

DCC CENTRAL CITY BIKE HUBS SSBC

ENGAGEMENT FEEDBACK SUMMARY REPORT

Contents:

wsp

DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

DCC CENTRAL CITY BIKE HUBS SSBC

ENGAGEMENT FEEDBACK SUMMARY REPORT

ENGAGEMENT FEEDBACK REPORT:

Draft Report on Findings from the Community Engagement
This report has been prepared for the Dunedin City Council on the outcomes of the recent community consultation undertaken as part of the Central City Bike Hubs Project.

Prepared by:
Eshita N Sutariya: Planner, WSP

Peer-Reviewed by:
Joao Machado, Work Group Manager – Planning, Engagement & Policy, WSP
Kelly Blackie, Principal Transport Planner, WSP
Alena Lynch, Engagement Advisor – Transport, Dunedin City Council
Stacey Hitchcock, Transport Planner, Dunedin City Council

Approved for Release:
Kevin Wood: Project Director, WSP
xxxxxxxxxx: Dunedin City Council

WSP New Zealand,
197, Rattray Street,
Dunedin 9016.

Dated: 7 October 2022.

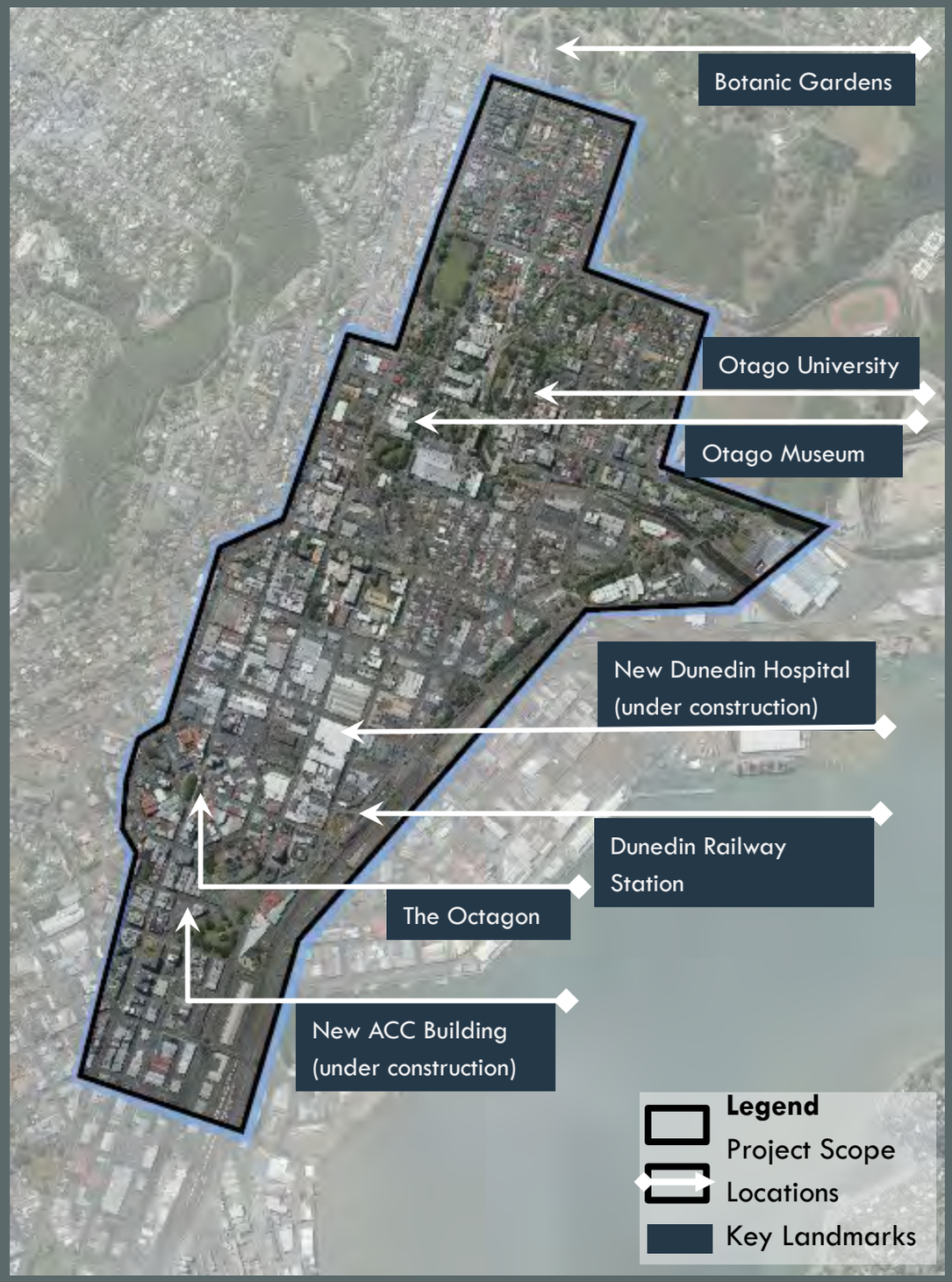
DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

Overview:

The Central City Bike Hubs project is one of seven Dunedin City Council projects from the Shaping Future Dunedin Transport programme being undertaken by the Connecting Dunedin (Dunedin City Council, Otago Regional Council and Waka Kotahi) partnership.

The project is considering improvements to bike/scooter parking in the central city with a focus on identifying opportunities for sheltered, secure, and weather protected cycle/scooter parking. Consideration is also being given to end of trip facilities such as toilets, showers and lockers, as well as opportunities for complimentary businesses (repair shops, bike hire etc).

The survey was undertaken using Social Pinpoint from 20th June 2022 to the 15th July 2022 and a link to the survey was also shared on the Dunedin City Councils social media page.



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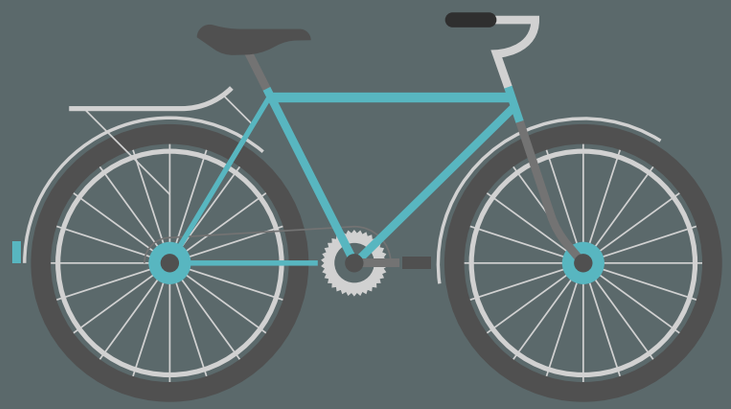
The Engagement:

The aim of the engagement was to determine the latent demand for bicycle parking, to understand the reasons why people don't commute by bike (or what needs to change so that more people take up cycling as a usual means of transport), and to understand what people value in regards to parking type, location, access, and supporting end of trip facilities.

A 'bike hubs' prospectus was also developed to present to business owners who may be interested in hosting a hub or operating a business within/ alongside a bike hub. Discussions are underway with those who registered interest to operate a bike hub within or alongside their business.



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Engagement Tools/ Methods:

A range of methods/ tools were used to collect feedback from the community. Engagement was timed to coincide with two other DCC projects: Mosgiel Park and Ride, and the Princes Street Bus Priority and Corridor Safety Plan. We used the 'Social Pinpoint' online engagement tool to engage consistently and to identify where communities are seeking safety, efficiency, consistency and wider accessibility options for their daily commute. In addition, engagement methods included project's webpage, media releases and public project briefings. These Engagement tools included -

1. Social Pinpoint- a spatial and interactive online engagement tool
    a. Survey Results/ Questionnaires
    b. Interactive Map Locations and comments
    c. Word Cloud.
2. Social Media Feedback
3. Stakeholder Feedback via Emails/ Website

Online Survey Results from Social Pinpoint

Questionnaire from Social Pinpoint

Interactive Map from Social Pinpoint

Social Media platform

Individual Feedback Submissions via Emails/Website

Demand Survey

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Key Results and Findings:
Social Pin-Point Tool- Dashboard

The social pinpoint tool consisted of a survey along with an interactive map where people could drop pins to show where they currently park their bicycle and where they would like to park their bicycle in the future.

The Survey Results/ Questionnaires are in two phases:

- Phase 1 generally focuses on participants thoughts and experiences of biking in the central city and what key suggestions and issues they might have
- Phase 2 background data of participants.

A 'word cloud' chart has also been produced which shows the key themes that have come through the community engagement – these include aspirations as well as challenges/ constraints the communities engaged with are concerned about.

Results

Total Visits	Comments	Survey Responses
998	199	157

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Survey Questionnaire, Phase 1

We asked people –

- If they bike in the city centre?
- If yes, how often do they bike?
- Where do they park and how easy is it to find parking?
- If they don't currently bike what contributes to that choice?
- What co-located features would improve the biking experience or motivate participants to start biking?

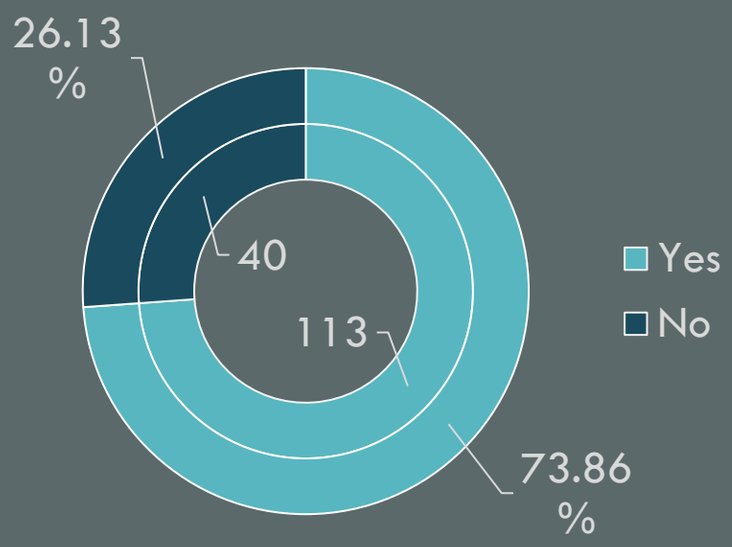
We received a wide range of responses on these questions, and a few shared significant suggestions, ideas and concerns on how they experience cycling in the Dunedin City Centre.

Q-1

Do you bike into the Dunedin city centre?

153

Responses

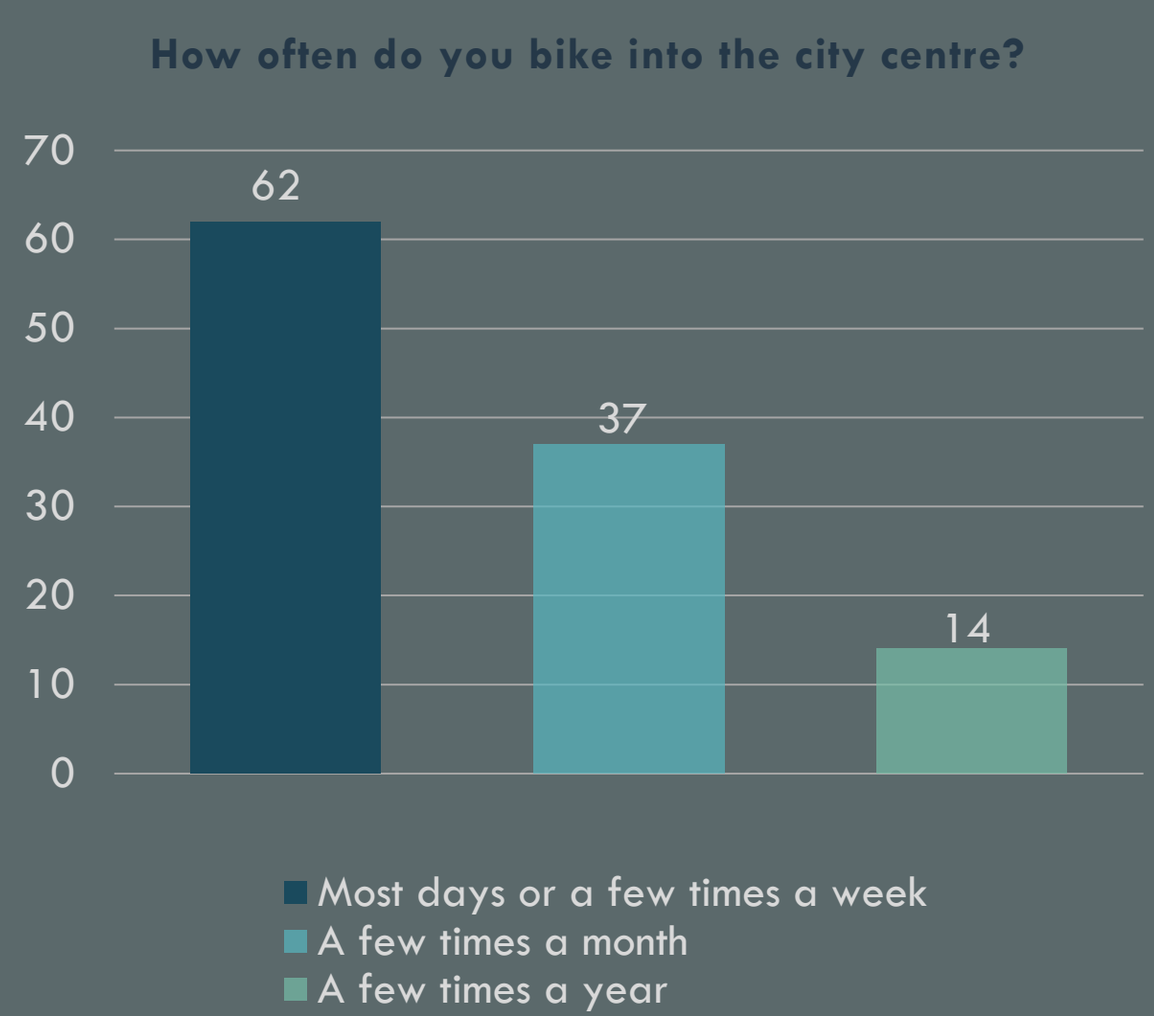


Q-2

How often do you bike into the Dunedin city centre?

113

Responses



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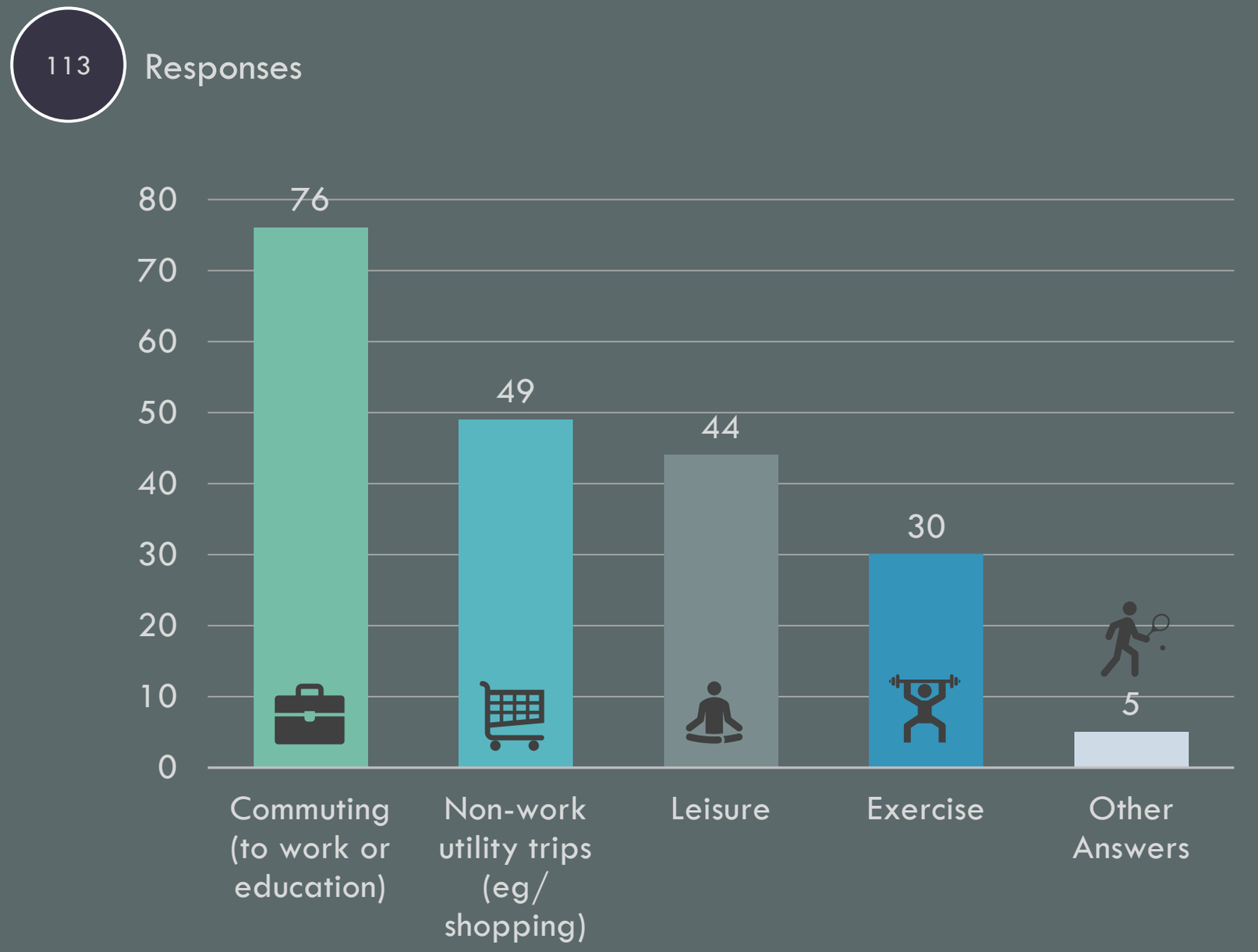
Q-3

Why do you bike in the city centre?

In total, 113 responses were received in relation to why people bike in the city centre. The majority of respondents said they commute for work or education, and this likely links in with the time of duration bikes are parked in the city with commuters requiring the longer parking periods – see question 6.

Interestingly, it is noted that 'leisure' and 'exercise' responses combined add up to similar number of respondents as regular commuters.



Q-4

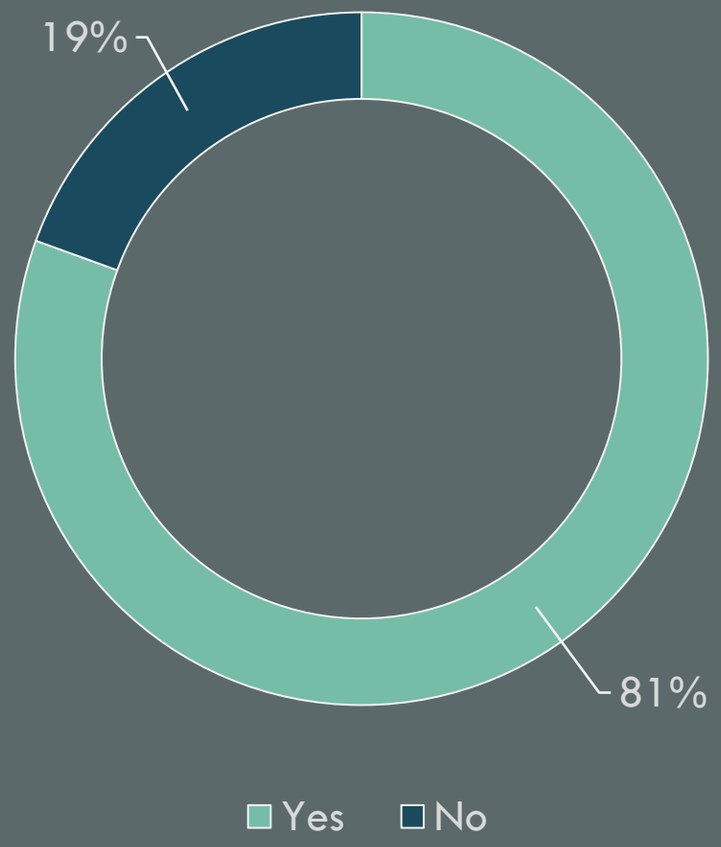
Do you park your bike in the city centre?

Of the 113 responses received, 81% of the respondents said they park their bike in the city centre during their trip.

Just under 20% of the respondents said that they don't park their bikes during their trip into the city.

This could indicate leisure type activities with shorter durations of stay in the city and associated spend or activity attracting users for this type of journey.

Responses



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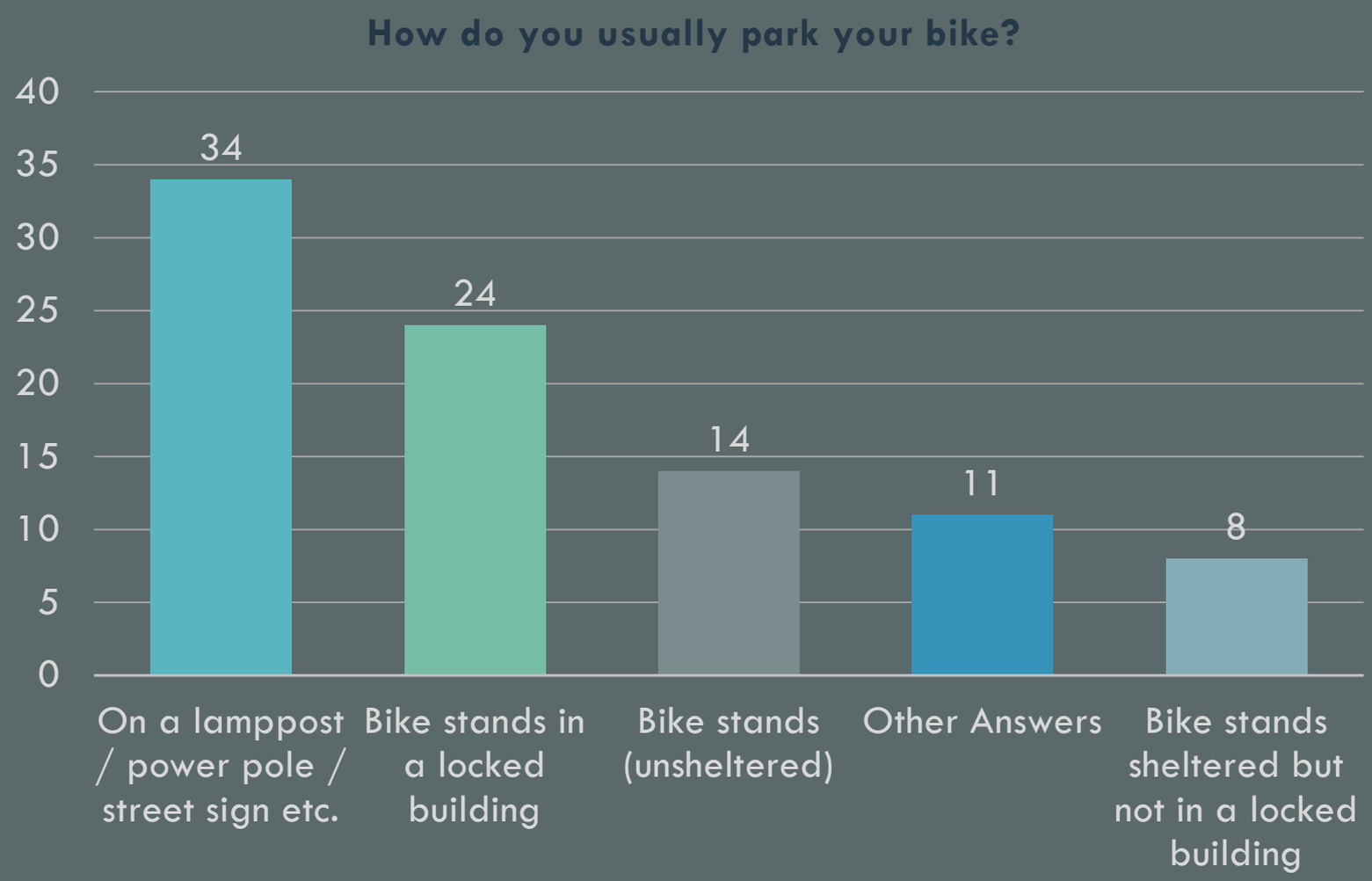
Q-5

How do you usually park your bike?

A total of 91 responses were received in relation to how cyclists park their bikes while in the city centre. These responses represent a relatively high proportion of cyclists who are securing their bikes to street furniture such as lamp posts, power poles, public seats and the like.

91 Responses



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Q-6

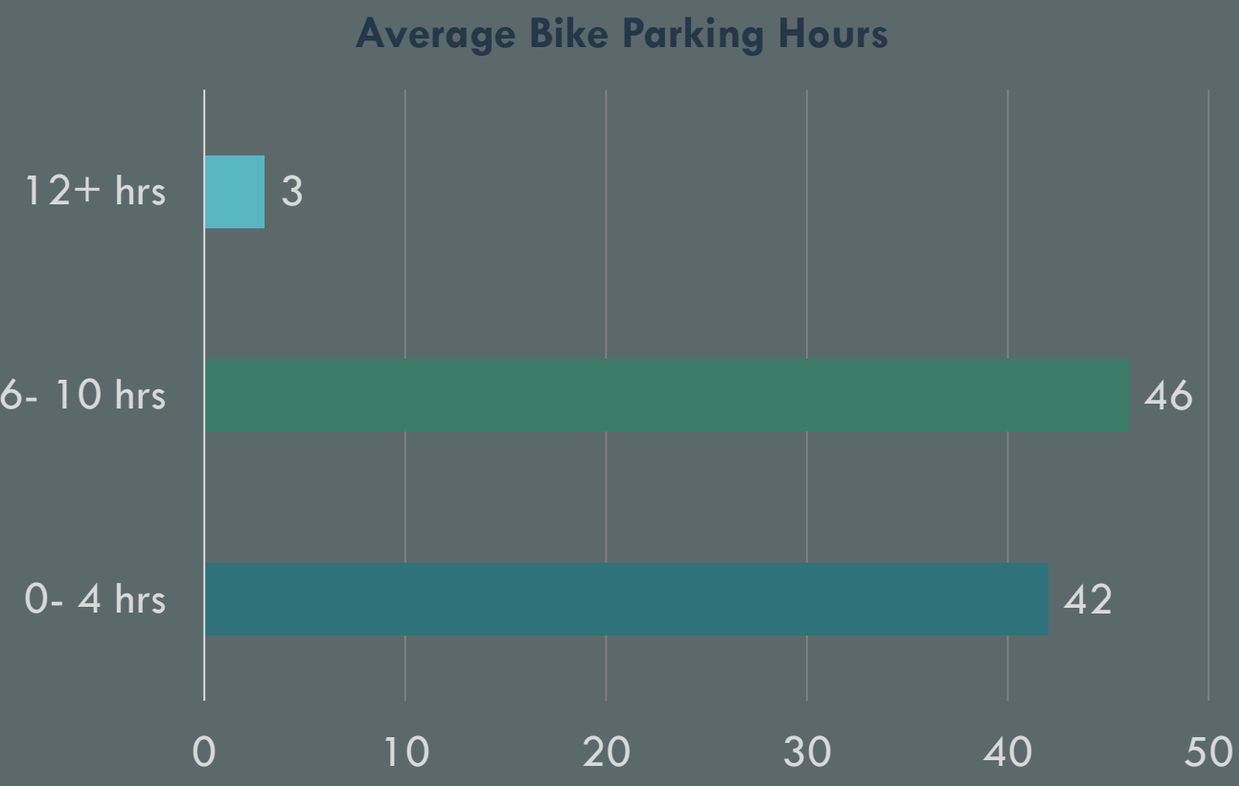
On average, how long do you park for (hrs)?

91 Responses

In total, 91 responses were received in how long people park their bikes for in the city centre.

The length of bike parking is almost evenly split with shorter term trips making up 46% of the responses.

Longer term commuter parking trips which the bike hubs project is targeting make up 54% of the responses received



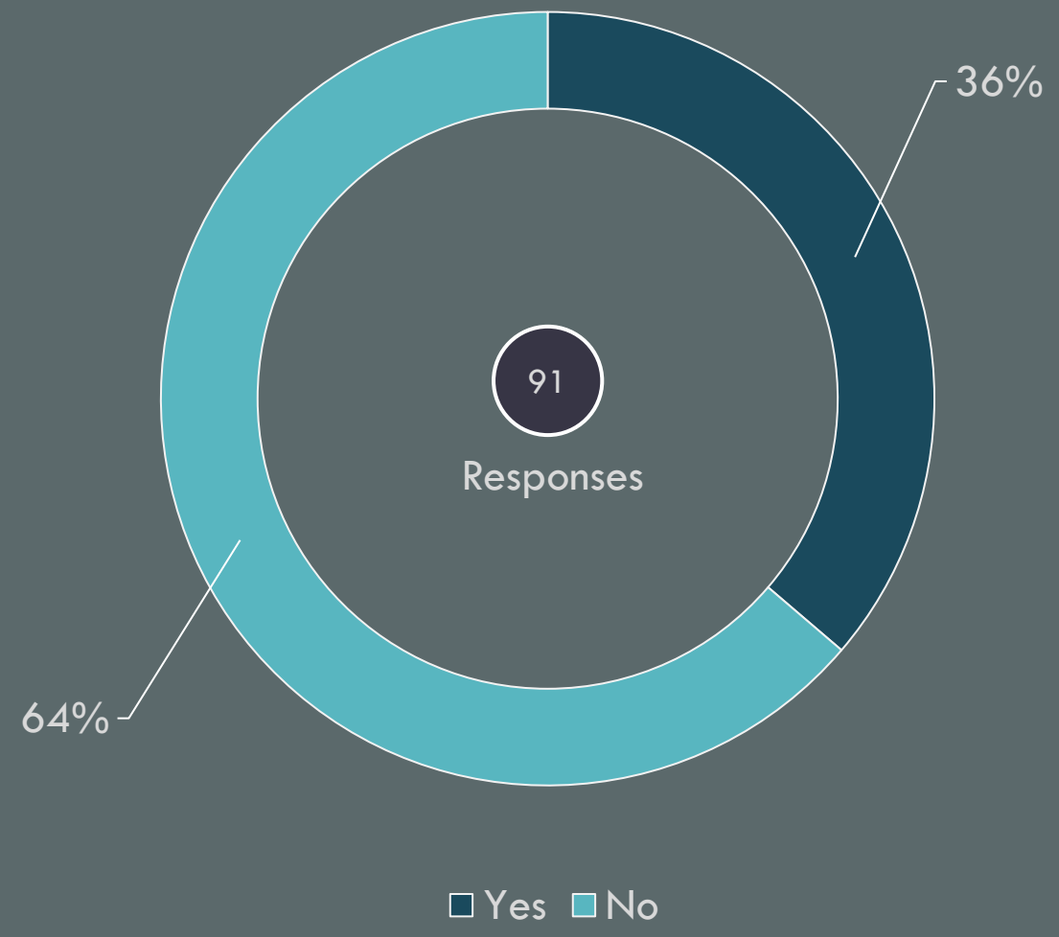
Q-7

Does your normal bike parking location differ from where you would ideally like to park?

Just under two thirds of respondents are parking where they would like to park while just over a third of the respondents are currently not parking in their preferred location.

Within Social Pinpoint, more pins were added by people wanting parking as opposed to currently parking. In total, 69 location pins were added by people wanting secure bike parking and 54 location pins were added by people wanting bike stands. In total 76 “I currently park here” pins were dropped.

It is likely that pins have been placed on the Social Pinpoint map by people who do not currently park their bike in the central city but would like to if a suitable facility existed.

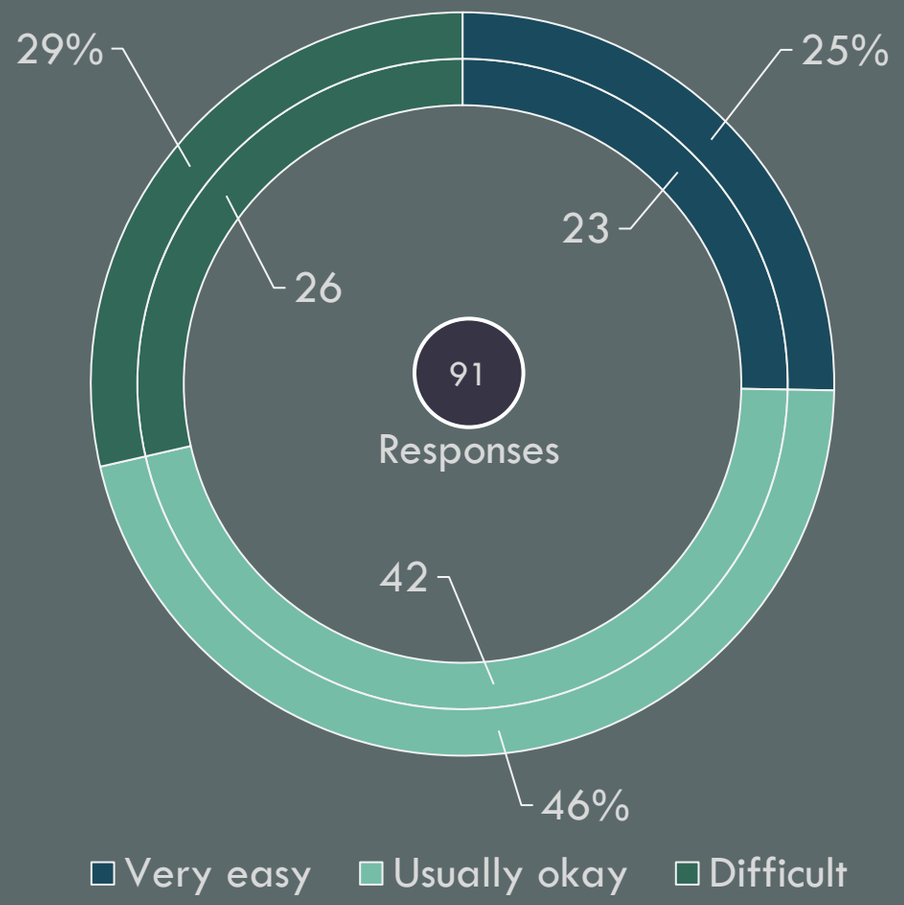


Q-8

How easy is it for you to find bike parking?

Of the 91 responses received around three quarters of respondents find it very easy or usually ok to find bike parking. The remaining 29% of respondents find it hard to find bike parking.

The comments left within the social pinpoint pins and survey comments show that the cyclists have two main concerns; difficulty in the availability of parking, and the location of parking in proximity to key trip generators/destinations.



Q-9

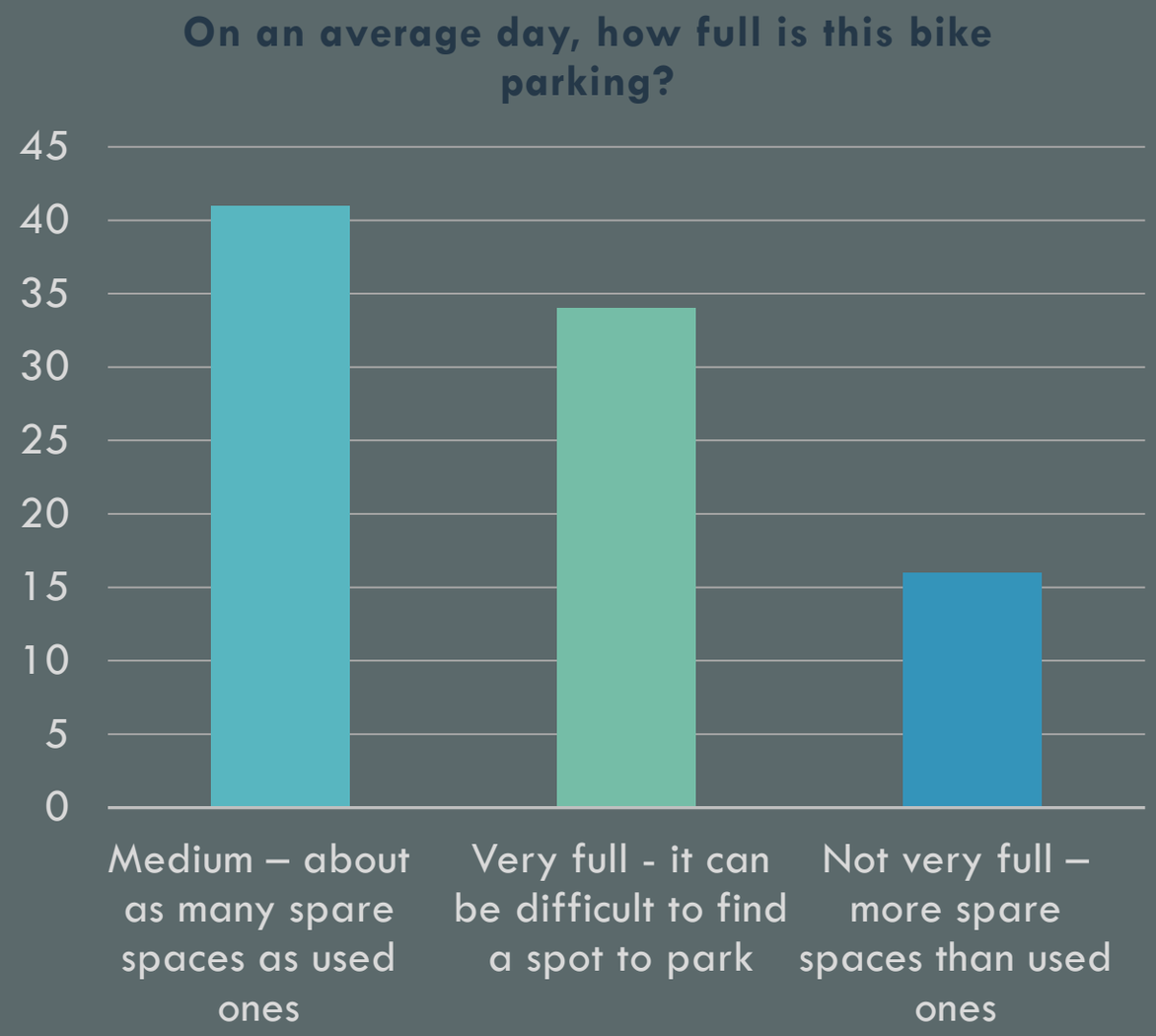
On an average day, how full is this bike parking?

91 Responses

In total, 91 responses were received in relation to bike parking availability in the city centre.

A third of respondents found parking in their desired location very full which made it difficult to find a spot to park. Almost half of the respondents find that there are as many spare spaces as used ones.

When considering the mapping of where people park and/ or would like to park, the large concentration situates over the area where the least amount of parking infrastructure exists – or where there is a great level of reliance on street furniture for securing bikes to – namely within the core central area within and around the Octagon.



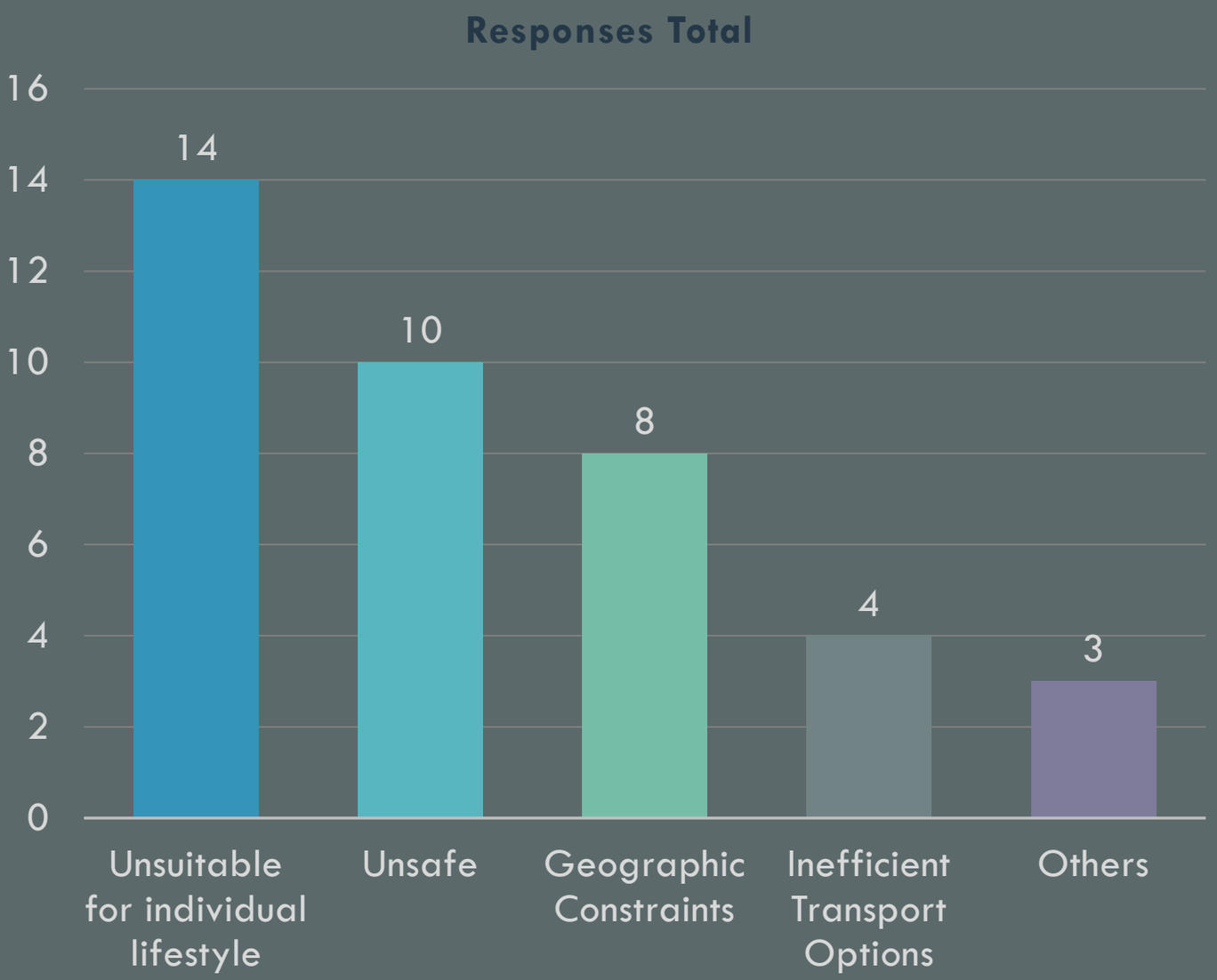
Q-10

Why don't you bike in the city centre?

We received 40 responses, and we have categorised them into five key categories.

- Geographic Constraints
- Inefficient Transport Options
- Unsafe
- Unsuitable for individual lifestyle
- Others

40 Responses



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Q-10

Why don't you bike in the city centre?

40 Responses

To elaborate these categories...

Unsuitable for individual lifestyle	Unsafe	Geographic Constraints	Inefficient Transport Options	Others
People do not bike due to, O Unsuitable for family lifestyle, with different schedule and locations O Unable to carry tools and luggage O Inconvenient as parents (need to move multiple people)	People do not bike due to, O safety concerns that it is too dangerous to bike due to traffic volumes/speeds O Not having dedicated bike lanes so it's frightening O Feels intimidating and not safe for a family	People do not bike due to, O Hilly topography of many suburbs in Dunedin city O Distance from suburban areas O Unrealistic option for hilly and cold city O Long trip distances	People do not bike due to, O Takes too long O Not sufficient cycle infrastructure such as parking, and concern about bikes being stolen O Not aware of cycleway network/routes, network isn't legible	People do not bike due to, O Live overseas but will cycle in Dunedin when they return O Live out of town

Q-11

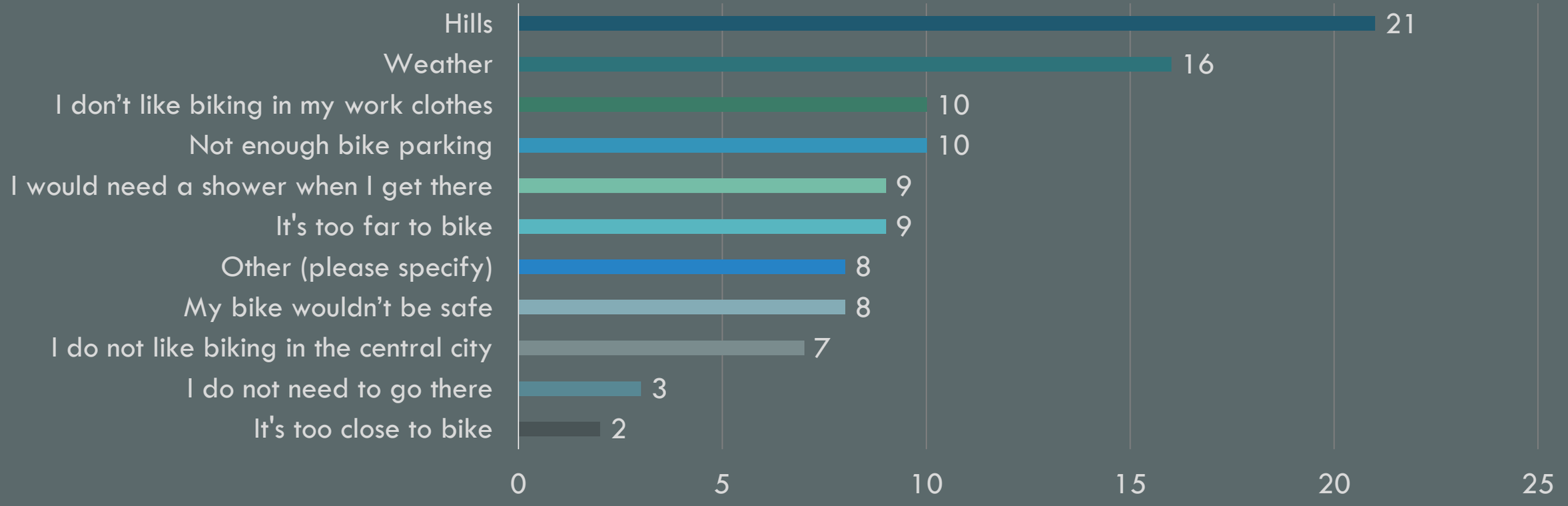
Of these options, which three contribute most to your decision not to bike in the central city?

40 Responses

We asked people – Why they chose not to bike into the Central City?

- The most common response was because of Dunedin's geographical layout and weather. The hilly and frosty/wet roads of Dunedin are reducing the number of people choosing to commute by bike.
- As shown in the graph below, having adequate bike parking and amenities such as personal gear lockers and toilets/showers might influence one's decision to cycle, and could improve the cyclists' overall journey experience.
- For many, a major reason was unsafe cycling conditions.

Of these options, which three contribute most to your decision not to bike in the central city



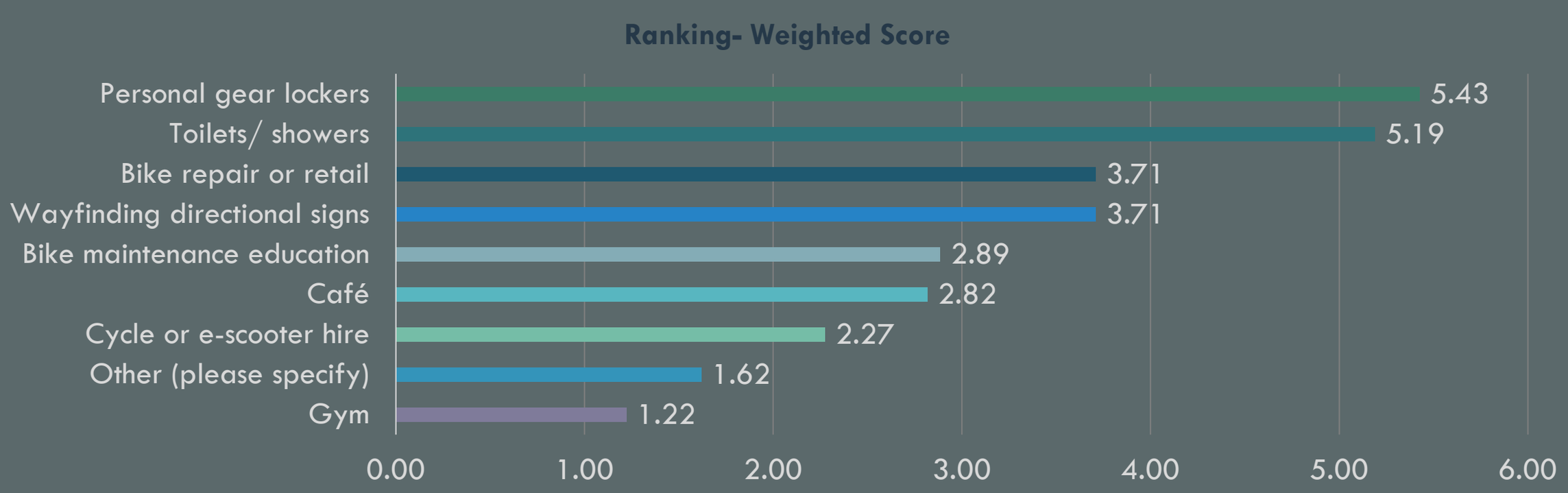
Q-12

Would any of these co-located features with indoor bike parking improve your biking experience or motivate you to start biking?

131 Responses

Based on user experiences and aspirations, we asked which factors influence the choice to cycle or how these factors could improve the biking experience. We asked people to rank these key features from 1 to 9 (with 1 being low and 9 high influencing factor), as shown in the graph below

- As a result, having end of trip facilities such as personal gear lockers, toilets/showers and wayfinding directional signage ranked in many people's top factors that could motivate them to cycle in Dunedin.
- Subsequently, bike repair, and maintenance education were ranked fourth and fifth.
- Gym was ranked the least influencing factor that would influence activity.



Q-13

Do you have anything else to add about the possibility of secure bike parking facilities in Dunedin?

Bike Hub- Centrally located and Long Term options with Parking

- Centrally located safe bike hub with end of trip facilities distributed around the city e.g. the Octagon, the Exchange, University, Railway Station
- A hub that is integrated with public transport e.g. racks that can take e-bikes on buses, ability to bike/bus if weather changes
- A co-ordinated transit map that shows bike friendly routes.

Bike/ E-Bike facilities, service and amenities

- Well-organized parking that is sheltered and secure, includes tools and repair service and provides storage for personal gear
- E-bike- adequate charging stations, better security, retail shops to buy or hire affordably
- Note some e-bike users did not think charging was critical

Sufficient and Accessible Parking

- Covered bike hub that has secure swipe system, and CCTV
- Lack of bike parking in suburban areas and parks on key streets in the CBD area are not enough
- Adequate bike parks to accommodate peak hours and that are accessible 24/7
- Suitable for e-bikes and cargo bikes

N/A and Others

- Not in favour or not interested
- Doesn't feel it is a practical for Dunedin's topography and weather
- Suggesting to introduce other biking options, 50cc model bikes or tricycle or cargo bikes.

Secured and sheltered Parking/ Locking system

- Bike parks that are secured with a locking system and possibly with security cameras/ GPS system to use after dark and on isolated areas.
- Bike stands with well designed shelters to provide protection in all weather

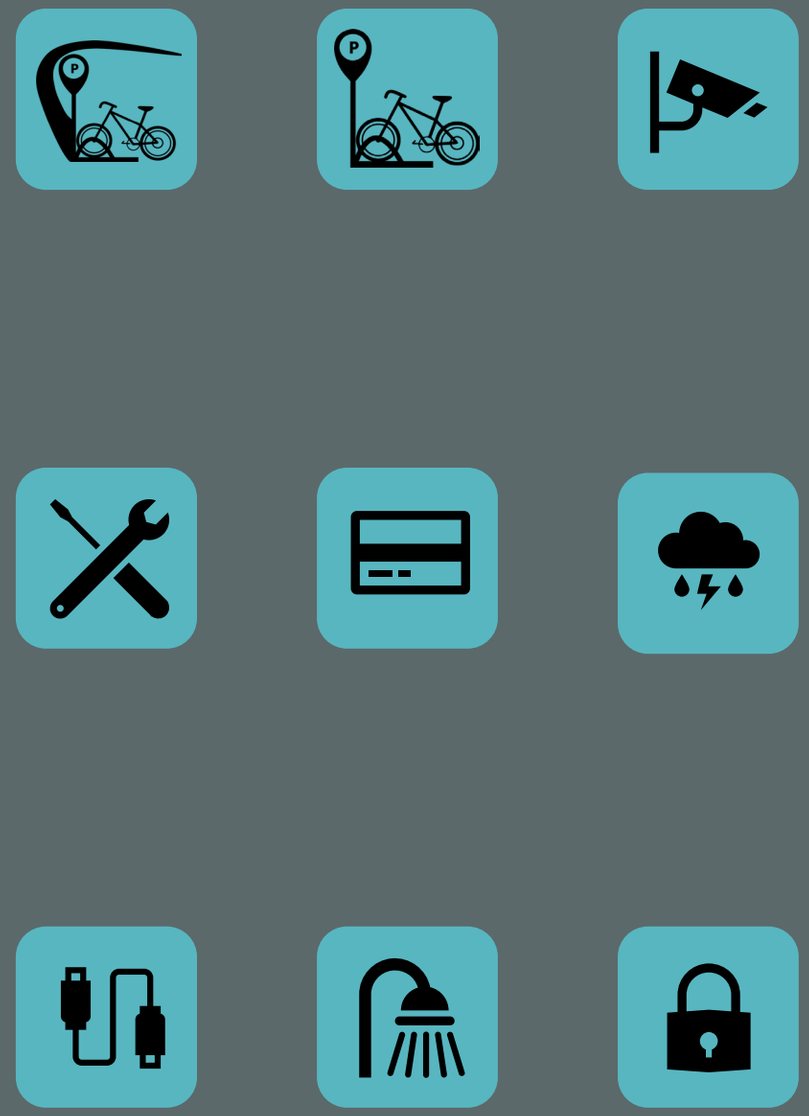
Well-Designed Bike Network

- Improve the cycling network and ensure it is connected to the bike hub, to allow people to commute safety and efficiently to their destinations
- Install and improve clear signage that provide wayfinding and information about different mode options

Q-13

Do you have anything else to add about the possibility of secure bike parking facilities in Dunedin?

1. There is a clear desire from the community for improved bike parking and supporting infrastructure to be more secure and sheltered. In particular, bike parking with secured locking system, including security cameras and controlled access at various locations. This is especially relevant for people who use bikes after dark and in less densely populated areas in the city.
2. The respondents supported improved accessibility –
   - A hub that is centrally located
   - To key destinations e.g. Octagon, library, gyms, existing and new Dunedin Hospitals and the central city supermarkets
   - To secured entry parking facilities- noting some respondents were happy to pay for the service
   - Allowing visitors (tourists) and casual users to use secure bike parking facilities.
3. In respect of 'end of trip facilities, the respondents identified the following –
   - Bike maintenance tools- storage, pump, spanner, hex kits, tyre levers to fix punctures
   - Indoor bike station that is integrated with public transport
   - Charging stations for e-bikes (4 requests, 2 believe charging not required)
   - Lockers/ storage
   - Toilets and showers.
4. Bike parks that are sheltered/ covered protect cyclists from Dunedin's varying weather conditions and keep e-bikes/ bikes protected from rain and rough weather.



Q-13

Do you have anything else to add about the possibility of secure bike parking facilities in Dunedin?

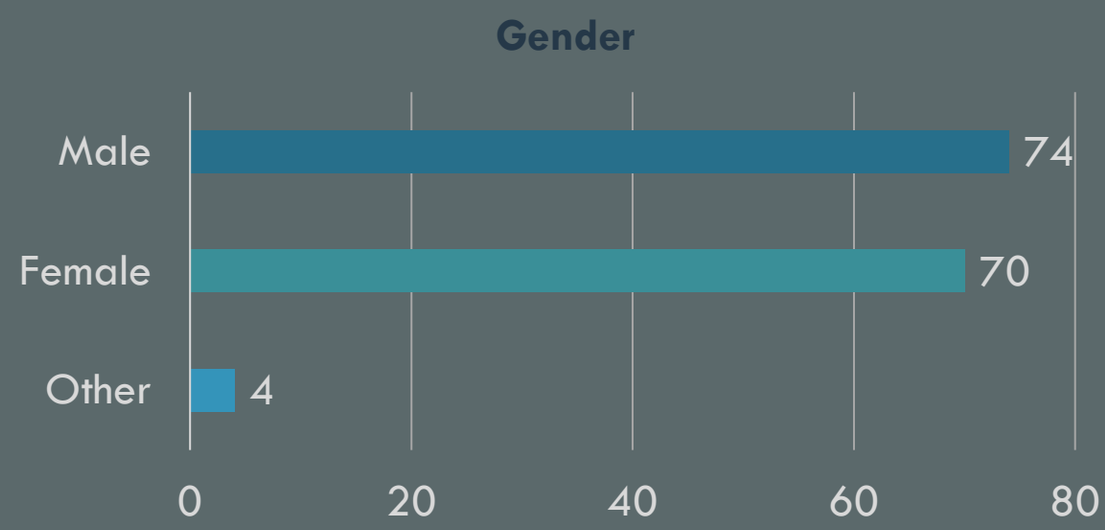
5. Bike hub connected to a well signed, safe cycle network which is integrated with other modes e.g. public transport
6. The respondents raised other factors that should be considered in respect of bike hub facilities in Dunedin. These include -
    - Fire risks from faulty and low-quality batteries
    - Bike parking in suburban areas
    - Ensuring new or refurbished buildings provide bike parking including end of trip facilities
    - Don't include paid bike lockers (being removed in Auckland)
    - Remove wheel bender stands
8. Other factors raised by the respondents were -
    - Dunedin weather
    - Vehicle congestion
    - Concern about rates increases due to Council spending on walking and cycling infrastructure
    - Private companies/businesses should provide bike parking for staff and visitors
    - Improved wider walking and cycling network
    - No multi-level bike holders, as they are not suitable with e-bikes
    - More motorcycle parking
    - Theft

Survey Questionnaire, Phase 2

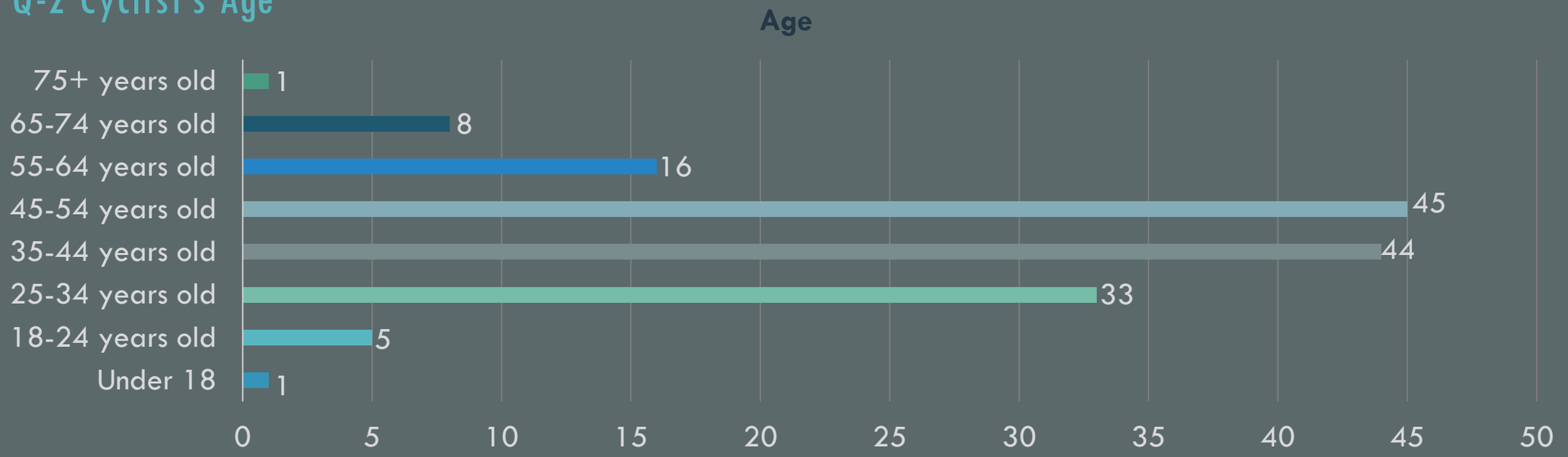
The Phase 2 of the Survey mainly focuses on the respondents' wider profile to identify specific expectations, including –

- Gender,
- Age Group
- Ethnicity
- Education
- Employment Status, &
- Disabled People's Status

Q-1 Cyclist's Gender



Q-2 Cyclist's Age



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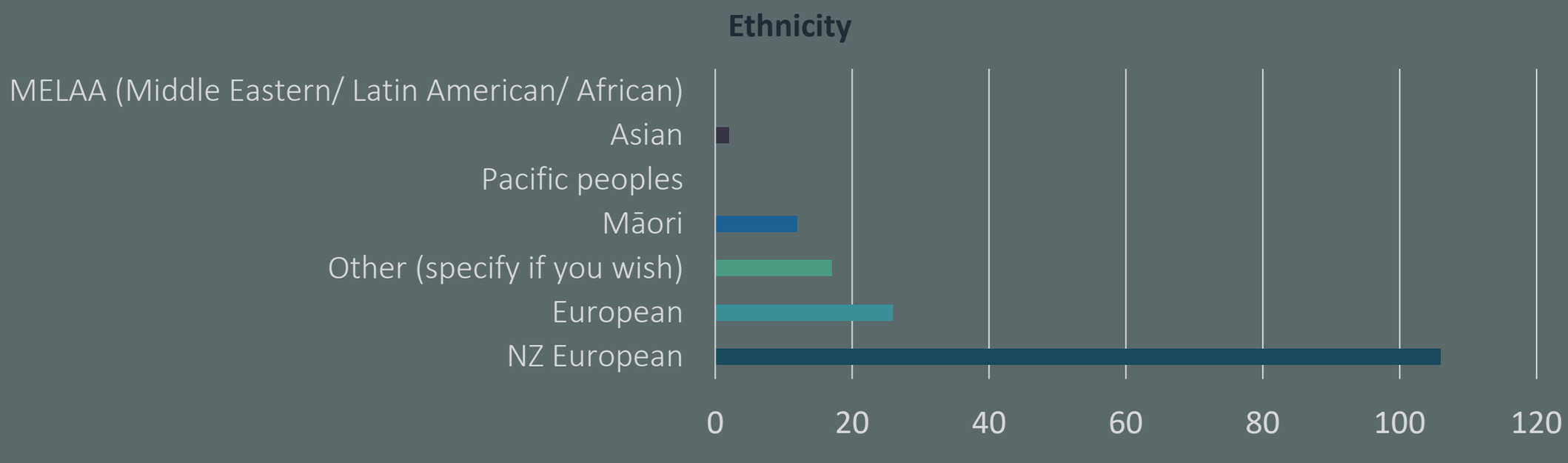
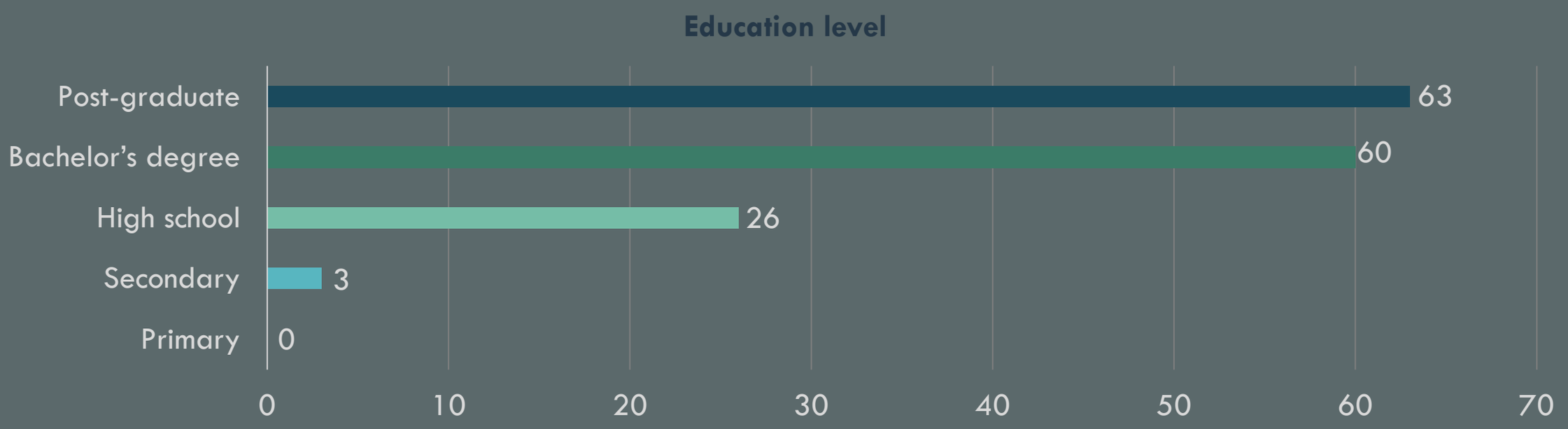
Q-3 Cyclist's Ethnicity



Q-4 Cyclist's Education Level



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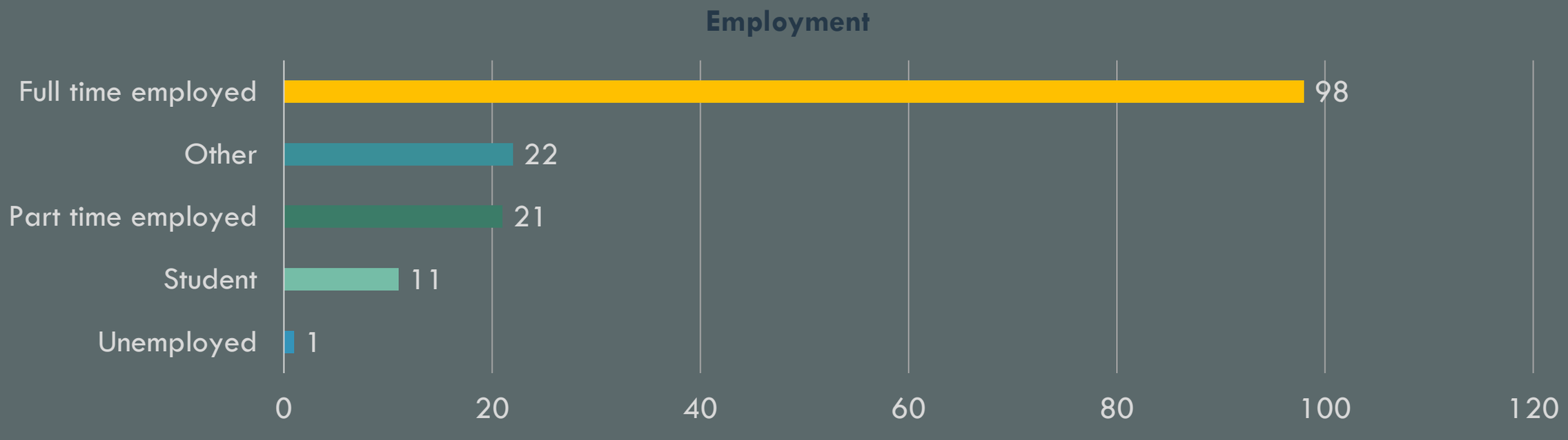
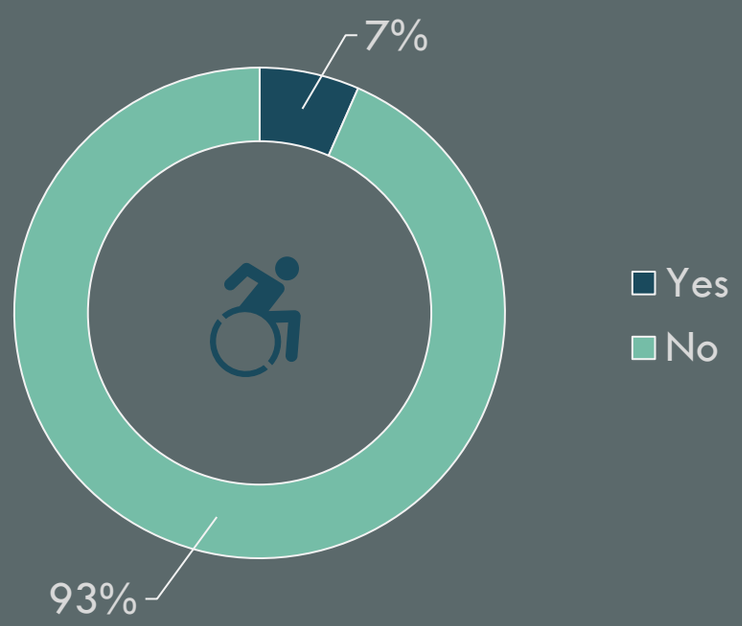
Q-5 by Employment



Q-6 Do you identified as disabled?



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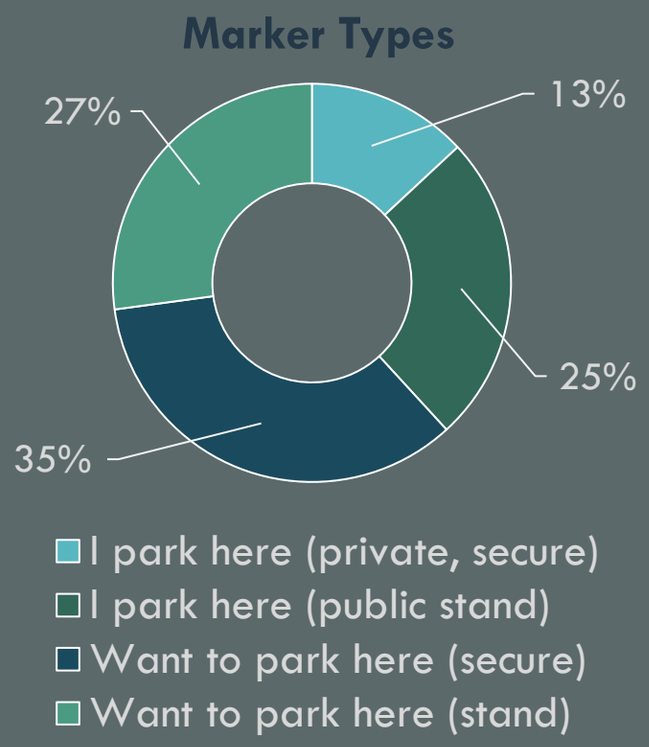
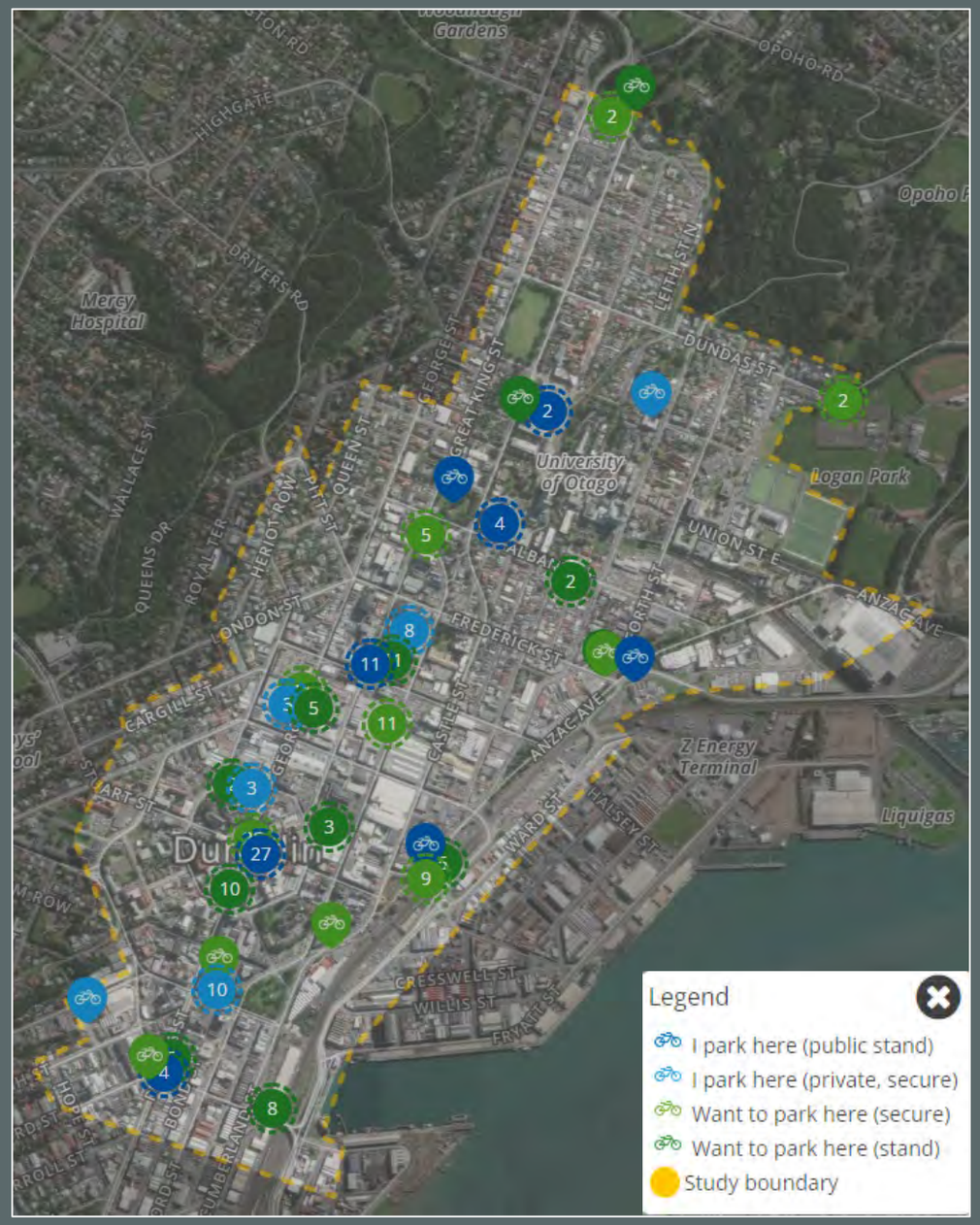
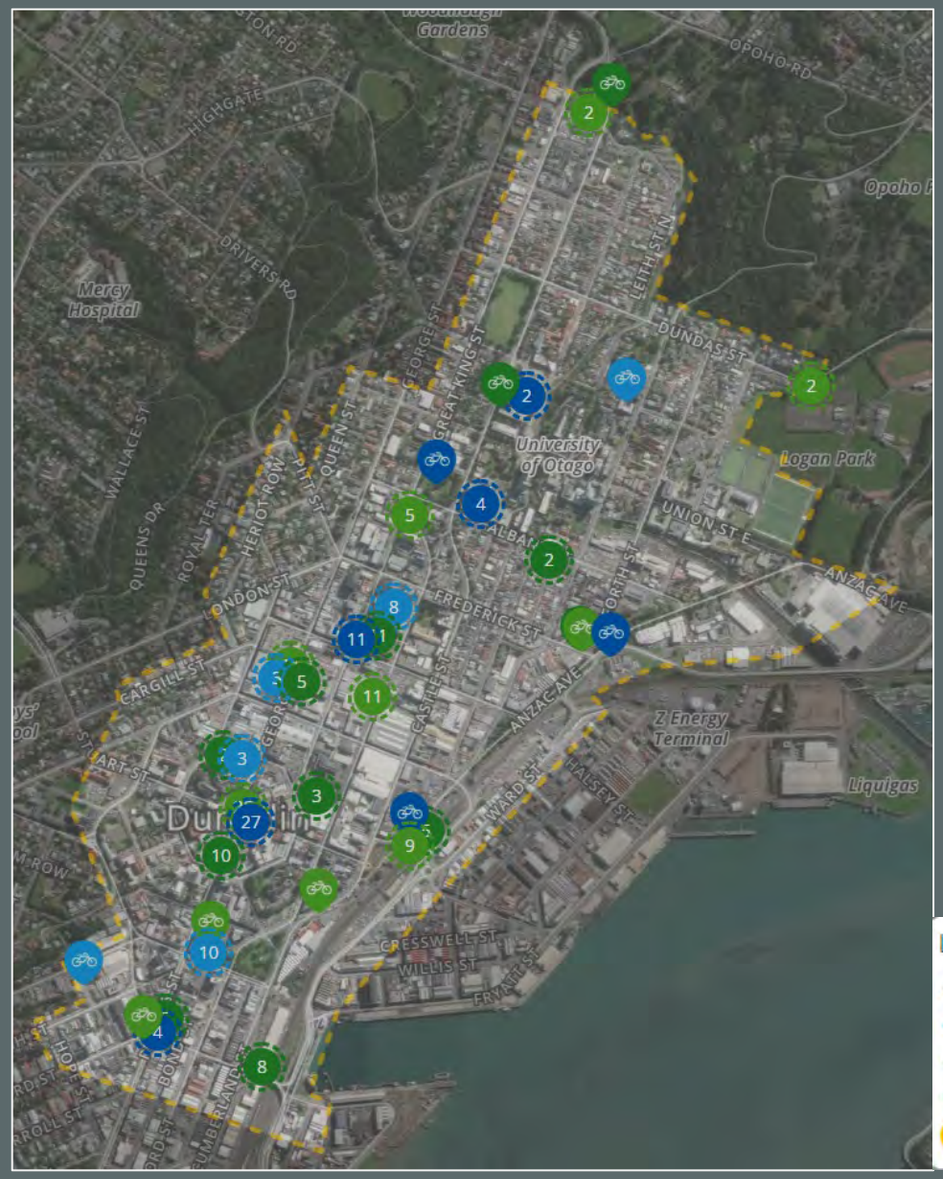
B. Interactive Map

- An interactive map shows the key locations where people have marked drop-pins where they currently park their bikes and where they want to park.
- We used four marking options:
  - I park here, public stand
  - I park here, private stand
  - I want to park here, private stand
  - I want to park here, public stand
- The map and a heat map beside clearly show that the Octagon and the surrounding core central city area was the most popular location for bike parking facilities
- The Octagon and its surroundings are popular due to their proximity to all key employment, retail, and social activities and business growth opportunity
- The second largest number of responses were for the current health precinct area e.g., Medical School and Hospital.





B. Interactive Map



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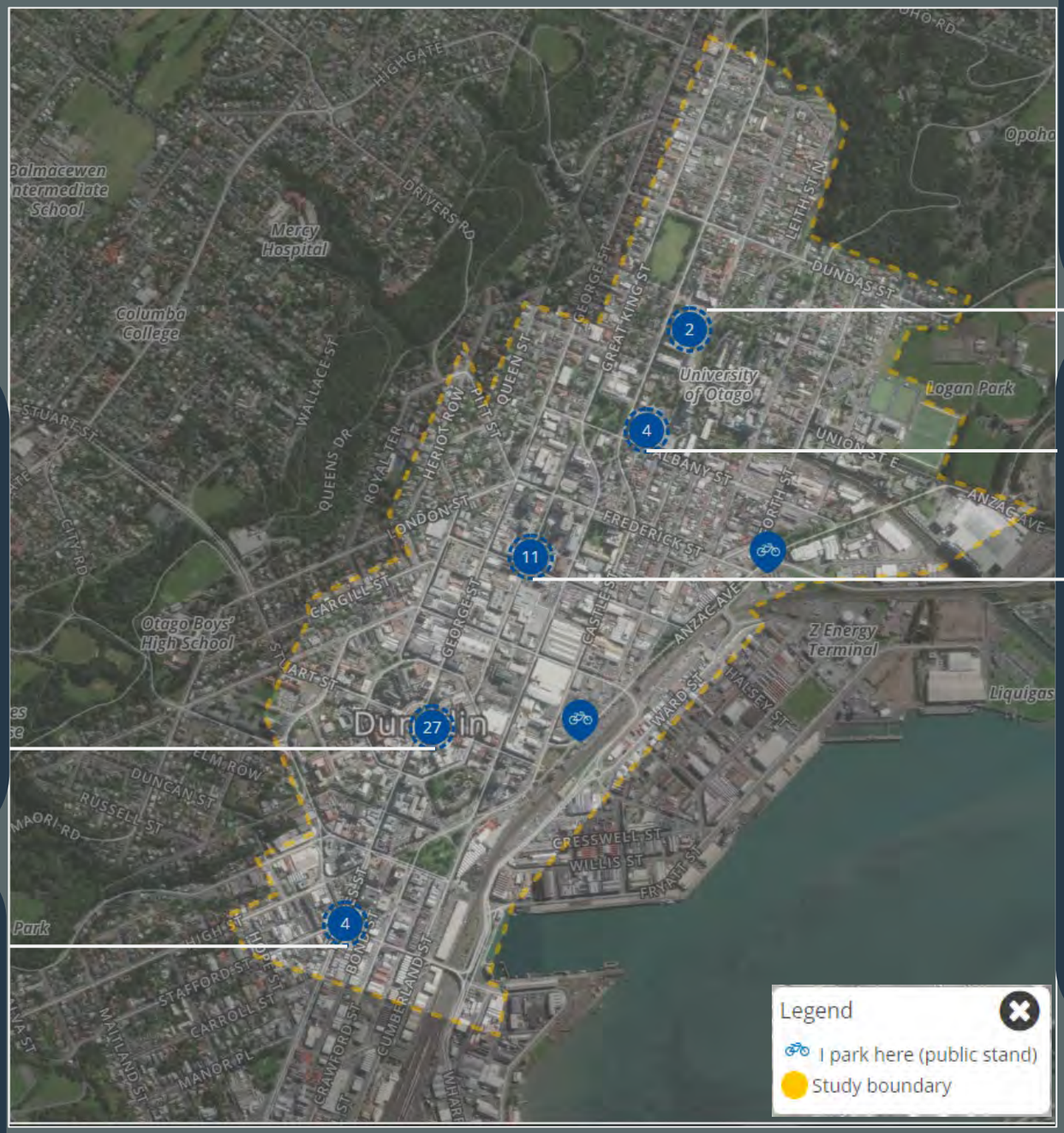
B. Interactive Map

- This map shows key locations where people have marked, **I PARK HERE, USING PUBLIC STAND**
- They have provided their suggestions, concerns and issues.

- The Octagon and the surrounding area had the highest demand for bike parking where people park at various locations- the Octagon, Stuart St, Central City library, Railway station, Taste Nature, George St, museum etc.
- Stands under the library are being used to store building materials making bike parking less accessible.

- Stands are not well designed and need to be safe.
- This parking is not really optimised for cyclists.
- The lockup is poorly secured, and it is lying on its side. The position is not optimised for cyclists.



- The existing parking facilities are over- utilized with no system to alert users of availability.
- The garage under the Science Library and cycle parking under sceience-3 is under-utilized.
- Convenient location for University, schools and hospital access that is sheltered and weatherproof.

- Museum stand can be bigger and more secure.
- Current bike rack has minimal capacity.
- Integrate with Uni to provide covered parking and e-bike charger.
- Excellent stands, more please!!! but minimal capacity, not secure and lack of other bike services/ infrastructures and needs more integrated with local traffic flow.
- Stands should be within short walking distances from all key destination places.

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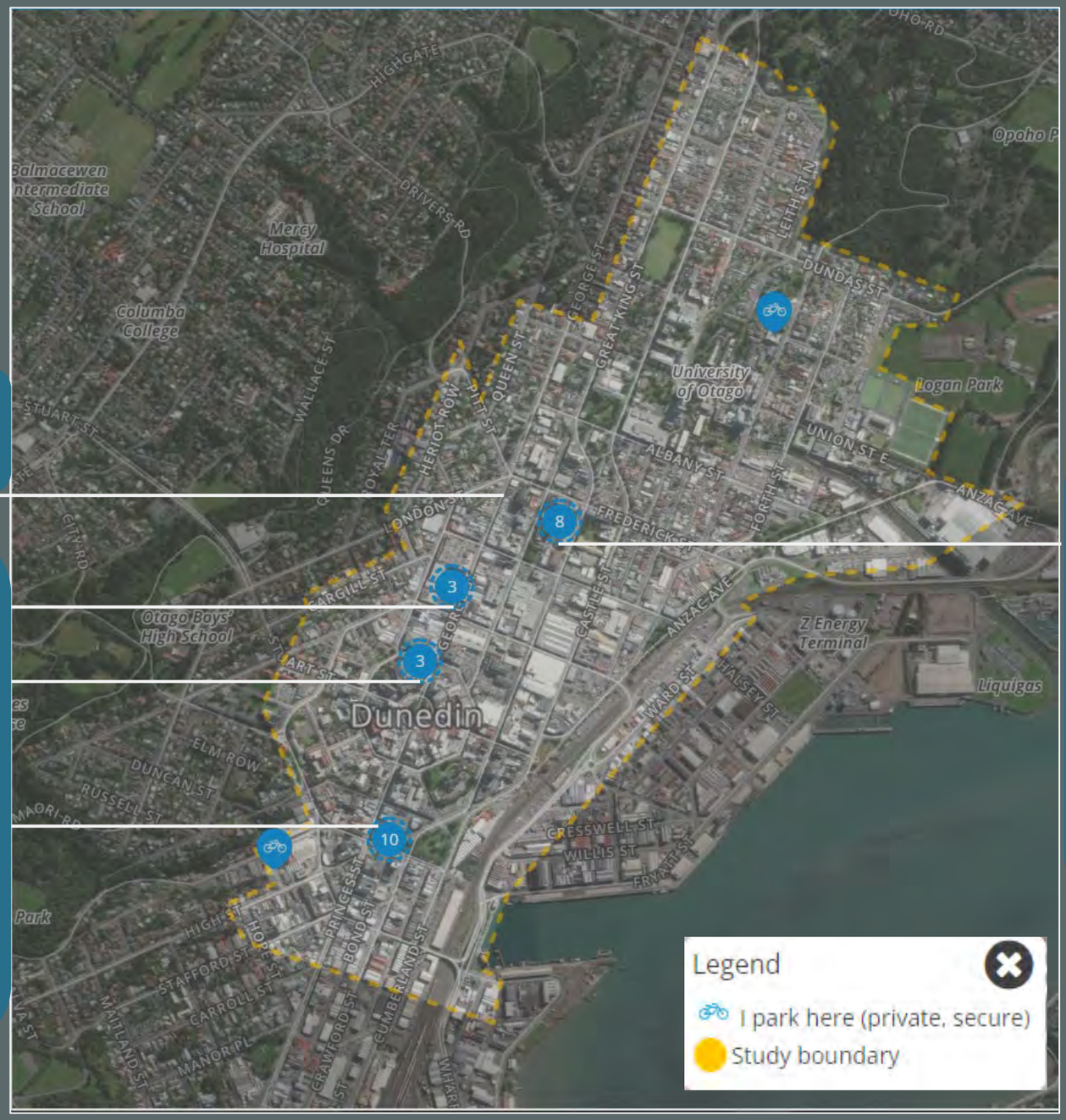
B. Interactive Map

- This map shows key locations where people have marked, **I PARK HERE, USING PRIVATE OR SECURE STAND**
- They have provided their suggestions, concerns and issues.



- Using lamp post to lock bike, due to limited parking on George St

- Usually park at private buildings or workplace as public bike parks are not sheltered or don't meet specific requirements
- Prefers secure workplace parking and private parking, near John Wickliffe House, Fisher & Paykel, and ACC building that are sheltered and have storage.

- Southern DHB is sheltered but more staff and public parking needed.
- Parking at the hospital and have sheltered bike stands but has limited capacity
- Current parking rack is not sheltered, limited capacity, no e-bike services or charging stations, issue of bike damage by gutter overflowing water.

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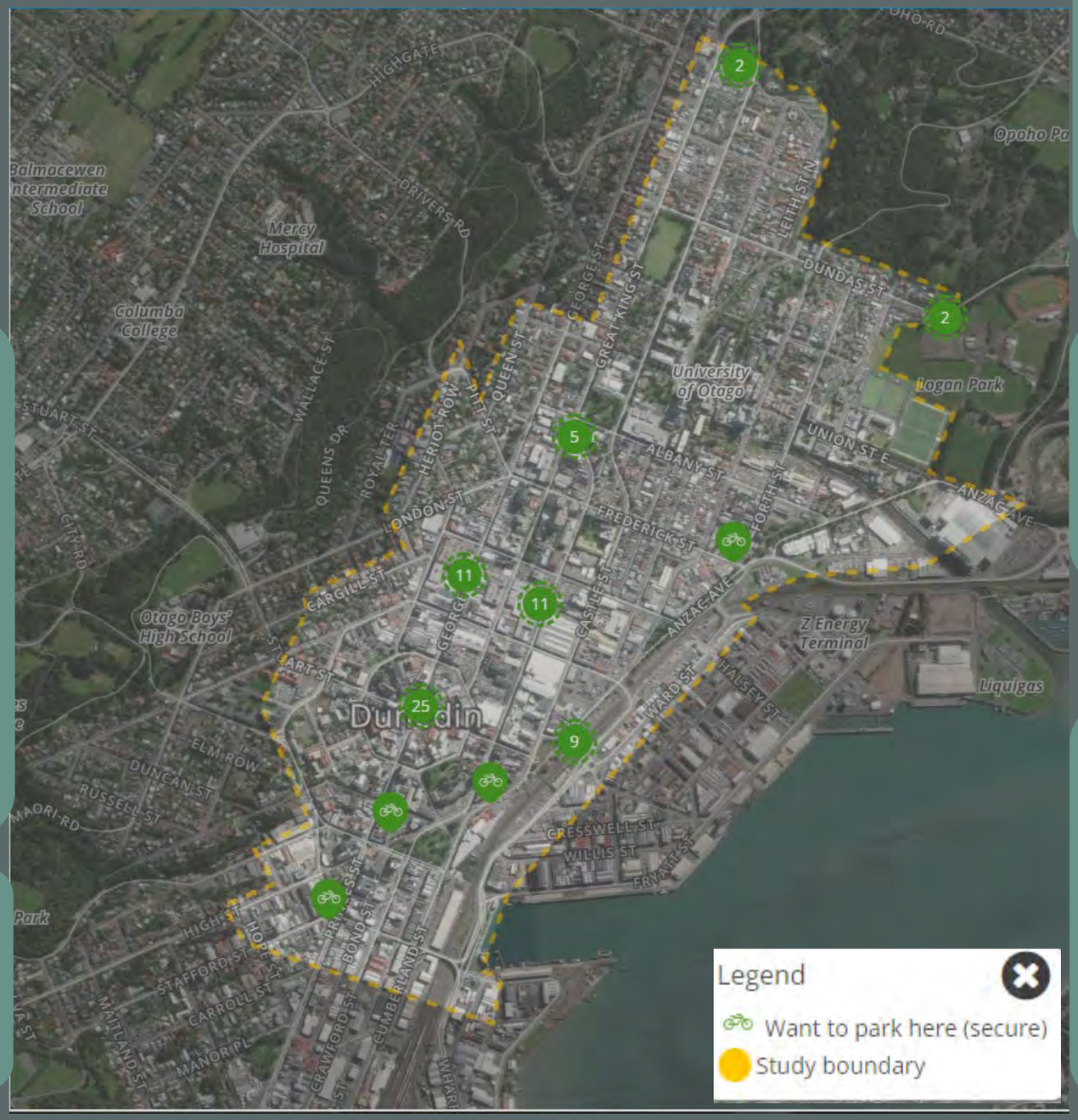
B. Interactive Map

- This map shows key locations where people have marked, **I WANT TO PARK HERE, USING SECURE /PRIVATE STAND**
- They have provided their suggestions, concerns and issues below.



- People are interested to have secure bike parking at the bus hub, the supermarkets, the Octagon, near Ross Creek, the Botanic Gardens, Moray Place, Thomas Burns or St Andrew Street carpark, the Museum area, Logan Park, Knox Precinct and Northern George St shops and retail area, as well as University, the Wilsons Building and Mega zone.

- Secure bike parking for meetings, markets, shopping, recreational activities, indoor activities in heritage buildings and for the hospital.

- Ideally central secure parking during evenings and weekends which is well designed, well-lit and safe.
- Parking for the New Dunedin Hospital with security and bike stands for staff and public. Stands throughout the campus as current parking is limited for staff.

- Integrated bike parking with basic amenities such as toilets and showers that are located near public, social and recreational destinations, the new hospital and the Town Hall

- Accessible and secure parking with locky docks for who have flexible work routines.
- Integrate locky docks system with bee card in the central area's key transport nodes and with passenger rail that allows bikes.

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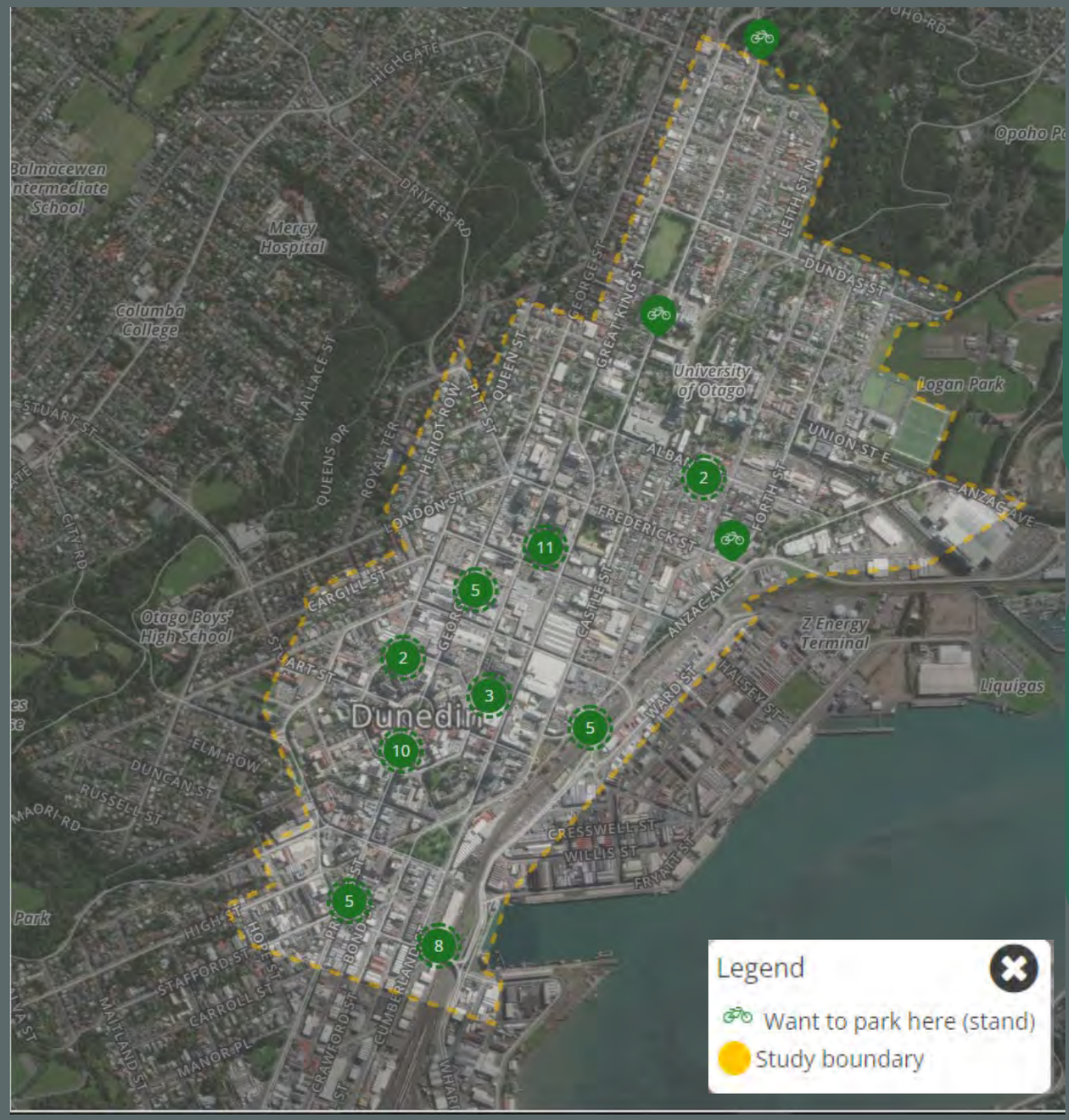
B. Interactive Map

- This map shows key locations where people have marked, **I WANT TO PARK HERE, USING PUBLIC STAND**
- They have provided their suggestions, concerns and issues below.



- Bike stand needed near public parks and gardens

- For accessing the CBD area; specifically, during weekends and on occasions of various social and recreational events

- A few marked locations that people suggest public bike stands are needed, such as the hospital, farmers market, main public places and key routes

- Public stand near well-known cafes, supermarkets, shopping centres; and around the central business district and a few residential precincts of the city.

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Social Media Feedback

Bike Hub close to university and on the southern end of the North ground.

North Dunedin, South of botanical Gardens needs free carparks and bike hub. Unused student flats could be used parking area.

Need Bike facilities that include a spanner, screwdriver and a bike pump close to University, the museums reserve and the middle of George st.

Covered bike lock area. Tools and air pumps with all attachments like in Arrowtown. Bike wash area. Lockers for bike gear. CCTV Cameras.

Use existing council owned parking buildings, like on Great King Street. Use some carparks for bikes, with an hourly fee based on parking space needed if the bike is secure.

Around the University.

Bike hubs with charging stations for ebikes.

A hub in the city with more bike parks in South Dunedin and Mosgiel too.

In the CBD, a monitored and enclosed parking space, some tools, a work stand and pump.

A path between the hospital up to Roslyn/ Belleknowes/ Mornington. Preferably one that zig zags sideways to decrease the gradient.

Parking at the university not that great, at the hospital is only available for staff. Bike park at the lower Octagon or the railway station.

Lower Octagon would be a good spot for bike park as it is an empty space currently.

Bike hubs at the bottom of hills. We need suburban bike lock ups.

Do not limit cycle parks to a highlighted area for Princes Street. Parks needed at the Oval and Manor Place.

Key:

- Project Scope
- Social Media Feedbacks
- Locations of Interests of specific comments

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Stakeholders' Feedback

DISABLED PERSONS ASSEMBLY NZ

- DPA welcomes the Council's proposal and have a concern regarding wide-ranging accessibility to biking amenities and services.
- Seeking services such as bike stands, suitable heights, toilets and parking slots that can accommodate three-wheeled and modified transport modes that are favoured by disabled adults and children
- Looking for features for wayfinding, signage and safety for pedestrians and cyclists
- Signage and information about the cycle hub should be accessible for all users and in accessible formats
- Recommends that accessibility features be incorporated into the cycle hub such as bike stands which can accommodate three-wheeled bikes and other adapted bicycles, accessible toilets, good lighting, and height adjustable seating, amongst other features.

AA OTAGO SUBMISSIONS

Supports Central City Bike Hubs proposal, but concerned about their locations and numbers and prefers to be close to the city cycleway network.

JOINT FEEDBACK FROM OTAGO UNIVERSITY AND TE WHATU ORA SOUTHERN

Affirming support for the project and keen to host a bike hub and supporting businesses

wsp

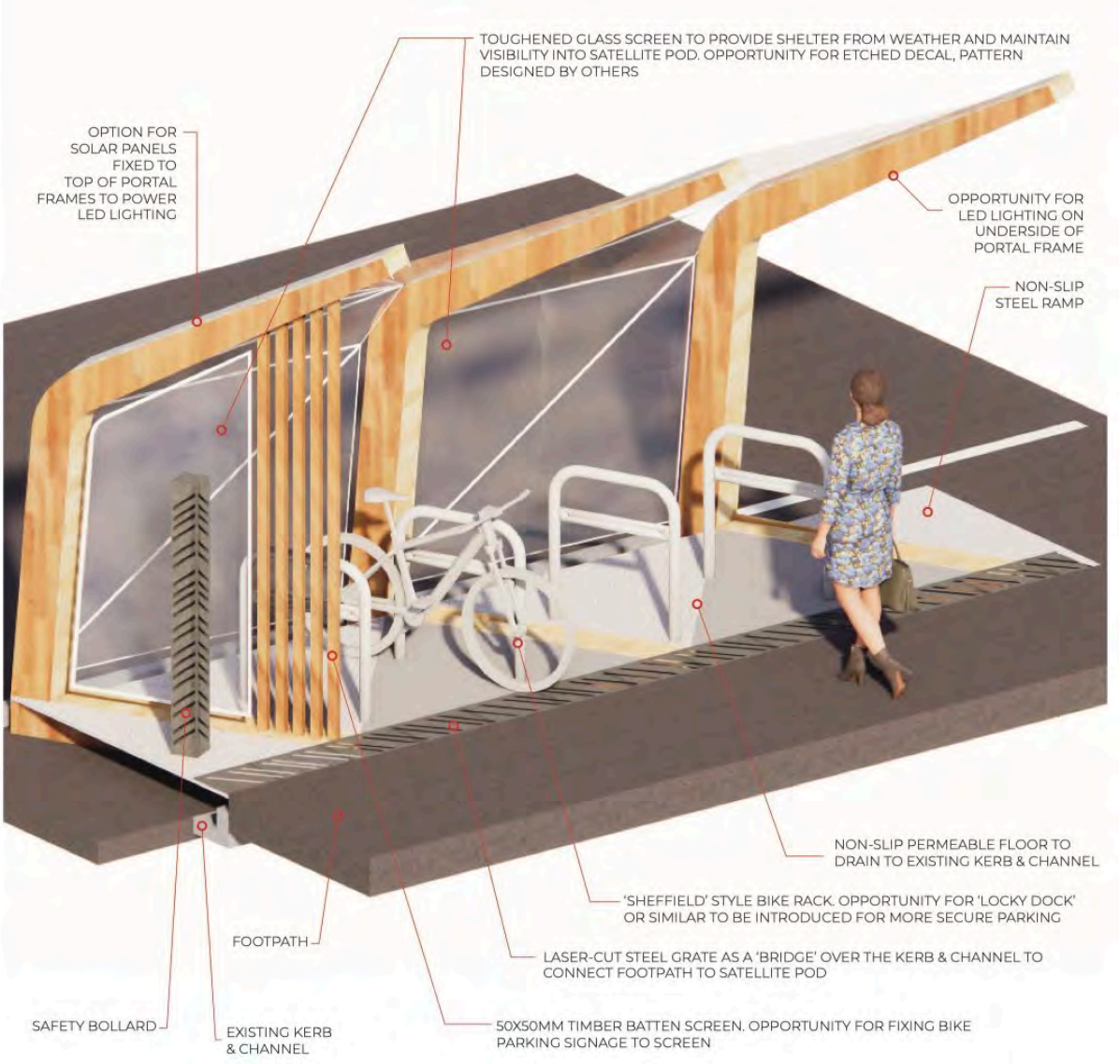
DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

Conclusions

1. The engagement undertaken shows that half the people who responded to the survey travel into the central city by bike most days or a few days per week.
2. There are a range of reasons why people were travelling into the central city. The most common answer was with commuting for work or education, and this likely links in with the time of duration bikes are parked in the city with commuters requiring the longer parking periods.
3. Interestingly, it is noted that 'leisure' and 'exercise' responses combined add up to similar number of respondents as regular commuters.
4. Of those parking their bikes in the central city a high proportion of cyclists are securing their bikes to street furniture such as lamp posts, power poles and public seats
5. A third of respondents found parking in their desired location very full which made it difficult to find a spot to park. Almost half of the respondents find that there are as many spare spaces as used ones.
6. The most common reasons for not biking into the central city were; its not convenient/not suitable due to personal circumstances, because infrastructure and parking isn't safe and because the topography of Dunedin is difficult to bike.
7. When asked about end of trip facilities the respondents ranked toilets/showers and personal gear lockers the highest, followed by wayfinding signage and bike repair.
8. There is a clear desire from the community for improved **safe and secure** bike parking. This is especially relevant for people who use bikes after dark and in less densely populated areas in the city.
9. The key features of a hub should include:
   - Close to key locations and distributed across the central city
   - Wayfinding signage and route planning maps
   - Bike maintenance/repair tools
   - Suitable for a range of bike types. Cargo and ebikes
   - Secured entry parking facilities- noting some respondents were happy to pay for the service
   - Allowing visitors (tourists) and casual users to use secure bike parking facilities.

Appendix G Design concept

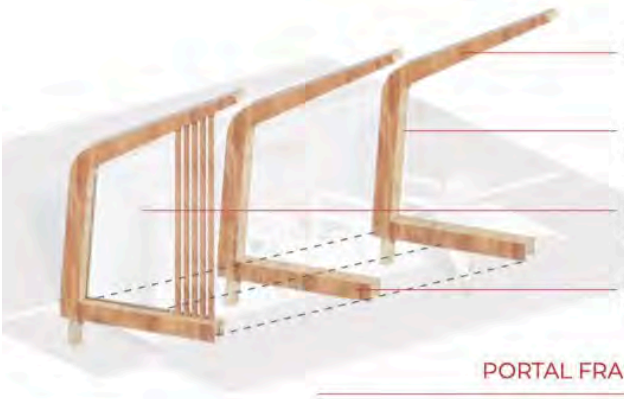
DRAFT FOR DISCUSSION WITH AUKAHA



EXAMPLE OF SATELLITE POD IN A PARALLEL CARPARK

2. CONNECTING CYCLISTS FROM THE ROAD TO THE FOOTPATH

DRAFT FOR DISCUSSION



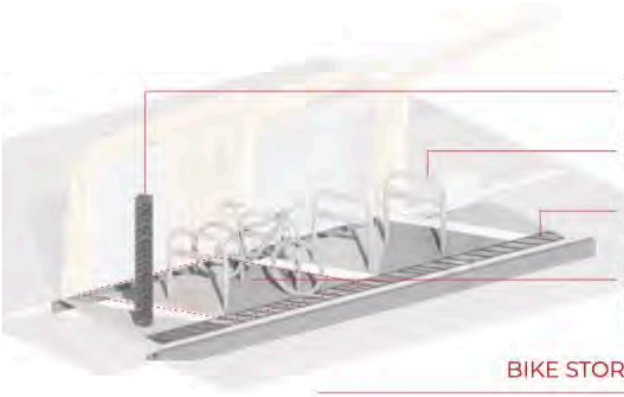
3X LAMINATED VENEER LUMBER (LVL) PORTAL FRAMES

OPPORTUNITY FOR ROUTED PATTERNING ON INTERNAL FACE OF LVL PORTAL FRAMES. DESIGNED BY OTHERS

END SCREEN IS SEPARATE ELEMENT THAT CAN BE ATTACHED OR DETACHED DEPENDING ON ARRANGEMENT OF SATELLITE PODS

STEEL FRAME AT BASE OF PORTAL FRAMES TO ALLOW FOR EASY MANEUVERABILITY WITH FORKLIFT OR SIMILAR

PORTAL FRAMES



SAFETY BOLLARD. OPPORTUNITY FOR LASER-CUT PATTERNS, DESIGNED BY OTHERS

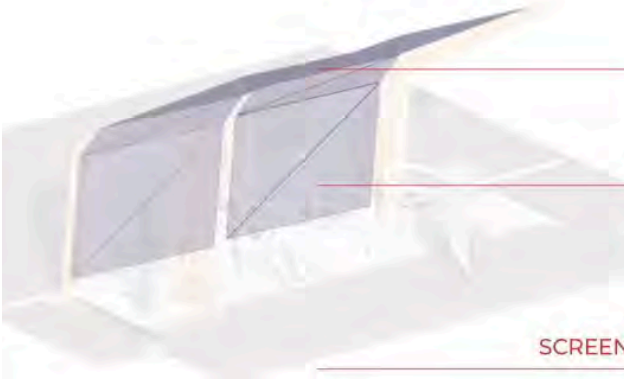
'SHEFFIELD' STYLE BIKE RACK. OPPORTUNITY FOR 'LOCKY DOCK' OR SIMILAR TO BE INTRODUCED FOR MORE SECURE PARKING

LASER-CUT NON-SLIP STEEL 'BRIDGE'

EACH BAY BETWEEN PORTAL FRAMES IS CUSTOMISABLE AND ABLE TO ADAPT TO THE SPECIFIC ARRANGEMENT OF SATELLITE PODS. I.E. IF 2X PODS ARE ARRANGED PARALLEL, ADDITIONAL STORAGE CAN BE ADDED TO 'BRIDGE' BETWEEN THE TWO PODS

BIKE STORAGE

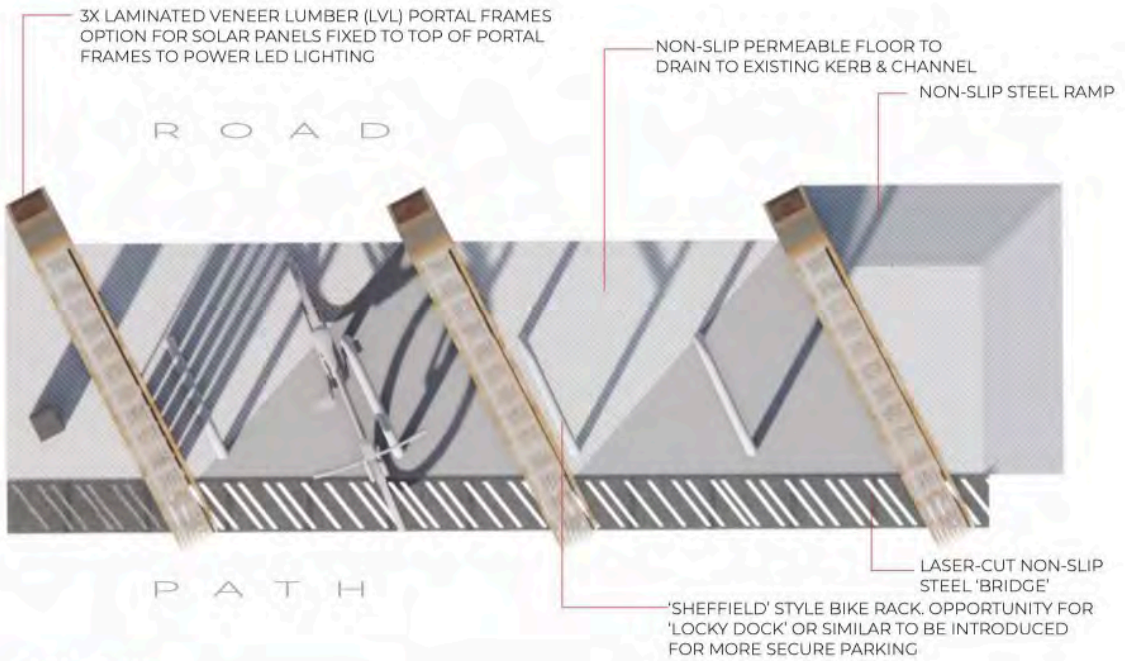
GLASS / PERSPEX CAN BE FIXED TO STRUCTURES TO CREATE SHELTER



TOUGHENED GLASS ROOF TO PROVIDE SHELTER FROM WEATHER AND ALLOW NATURAL LIGHT INTO THE SATELLITE POD

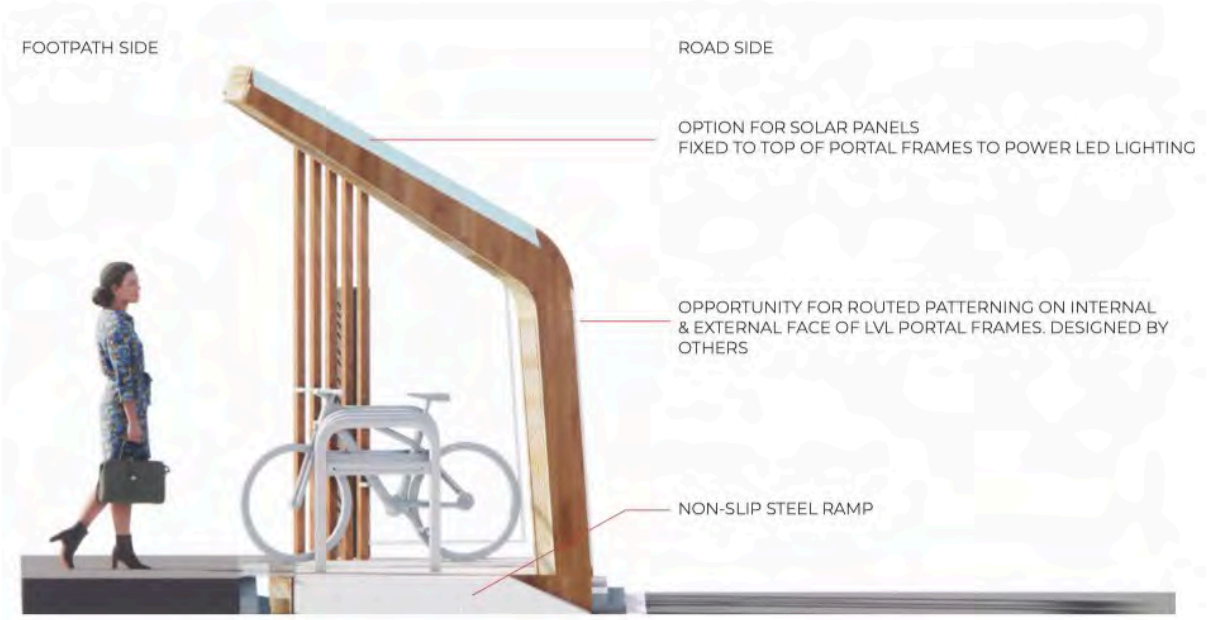
TOUGHENED GLASS SCREEN TO PROVIDE SHELTER FROM WEATHER AND MAINTAIN VISIBILITY INTO SATELLITE POD. OPPORTUNITY FOR ETCHED DECAL, PATTERN DESIGNED BY OTHERS

SCREENING

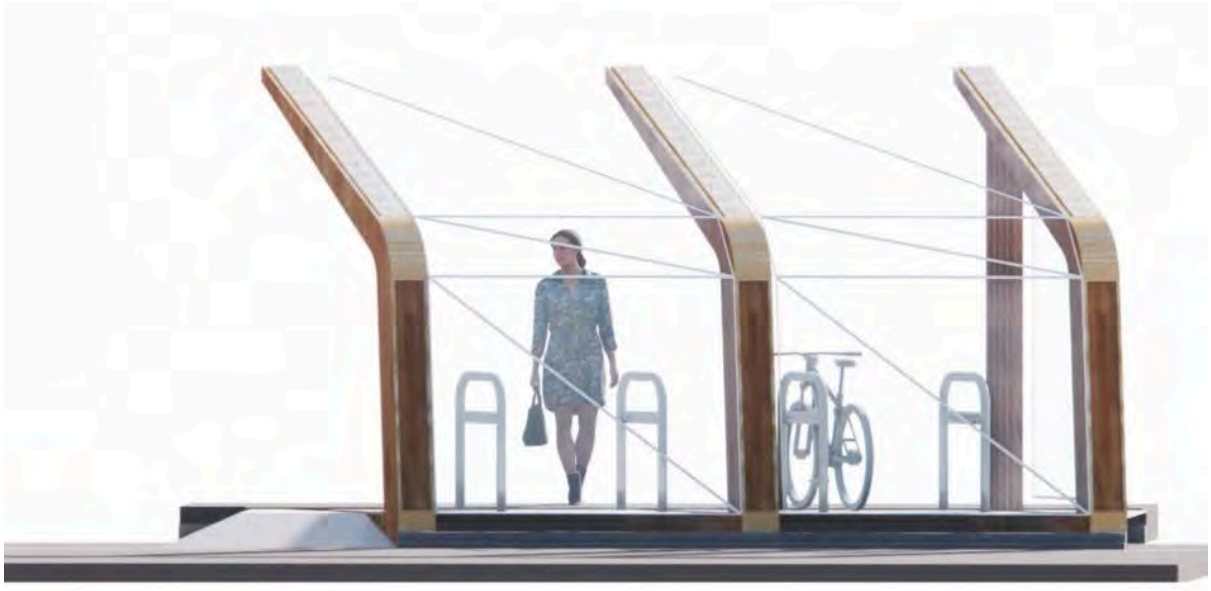


PLAN VIEW

VIEW FROM FOOTPATH



SIDE VIEW



VIEW FROM ROAD

CONNECTING HUB CONFIGURATIONS

20-BIKES (VERTICAL)

- MIRRORED SATELLITE PODS
- OPTION FOR FULLY-ENCLOSED KEY-CARD ENTRY HUB WITH ENTRY & EXIT POINTS TO AVOID CPTED RISKS
- ALTERNATIVE OPTION FTO USE 'LOCKY DOCKS' OR SIMILAR FOR SECURE BIKE STORAGE WITHOUT THE NEED TO ENCLOSE THE HUB
- ADDITIONAL ROOF PANELS CAN BE ADDED TO CREATE FULLY SHELTERED HUB

20 BIKES (HORIZONTAL)

- ADJACENTLY-ORIENTATED PODS ALLOWS FOR ADDITIONAL FLOOR MODULE TO BE ADDED WITH 2 ADDITIONAL BIKE RACKS (EQUAL TO 20 BIKES)
- CAN BE POSITIONED ACROSS MULTIPLE PARALLEL PARKS IN A STREET ENVIRONMENT OR ALONG A PUBLIC FOOTPATH AWAY FROM THE STREET

40-50 BIKES

EXAMPLE OF SATELLITE PODS USED TO CREATE CONNECTING HUB

INDICATIVE ONLY EXAMPLE LOCATION: 260 GREAT KING STREET, DUNEDIN IS

6-CD109.70 | SATTELITE BIKE PODS
www.wsp.com | November 2022

Appendix H Cost estimate

Cost estimate Cycle Pod with Ramp

Date:	17-Nov-22	Author:	Peter Kortegast			
Item	**Description**	**Unit**	**Qty**	**Rate**	**Total**	**Notes**
1	Preliminary and General costs	LS	1	$ 2,000	$ 2,000	Fabrication, Transport, Project Mgmt
2	Installation traffic control	Day	0.5	$ 1,200	$ 600	
3	Steel box base frame powder coated	LS	1	$ 5,000	$ 5,000	
4	FRP decking with stainless bolts	m2	8.8	$ 750	$ 6,600	
5	Ramp	LS	1	$ 1,000	$ 1,000	
6	Glass panels	Ea	5	$ 1,000	$ 5,000	
7	Glue Laminated beams	Ea	3	$ 1,500	$ 4,500	
8	Cycle Racks	ea	4	$ 600	$ 2,400	Stainless sheffield type stands
9	Removable bollard	Ea	1	$ 3,500	$ 3,500	
10	Weathering steel plate detailed	m	5.5	$ 300	$ 1,650	
11	Laser cut patterns on gluelam beams	LS	1	$ 2,000	$ 2,000	
12	Glass panel details	Ea	2	$ 600	$ 1,200	
13	Solar panels & lighting	LS	1	$ 5,000	$ 5,000	Or provisional sum for mains connect
14	Parking sign	LS	1	$ 1,500	$ 1,500	Customise NZTA sign specifications
15	Hazard end sign	LS	1	$ 200	$ 200	
				Subtotal	**$ 42,150**	
				Contigency approx 20%	$ 7,850	
	Estimated construction cost (excludes Prof design fees, includes GST)				**$ 50,000**	m2 rate 6x2.1=12.6m2 equates to $4,000/m2.
	It is estimated that with scale and making and installing several cost could reduce by 20% and the design contingency could be re					
			Suggested values:	LOW	$ 35,000	*These are costs for a Satellite hub;*
				MEDIUM	$ 40,000	*assume triple these for Connecting hubs*
				HIGH	$ 50,000	*we have used the high value to be conservative*

Operational cost estimate

Date:	15/12/22	Author:	John Lieswyn			
Item	**Description**	**Unit**	**Qty**	**Rate**	**Total p.a.**	**Notes/ assumptions**
O1	Stand replacement	per stand	14	$ 600	$ 8,400	Replacing damaged stands, 10% per year; not needed for Locky Docks
O2	Cleaning	per year	1	$ 10,000	$ 10,000	Estimated marginal cost on top of bus stop shelter cleaning
O3	Management	per month	12	$ 225	$ 2,700	Locky Dock 10 unit $225/mo
O4	Periodic Renewal Cost	per 10 yrs	1	$ 18,000	$ 18,000	Assumed cost for regular upgrade every 10 yrs: to be confirmed

Appendix ICultural Values Assessment

The following assessment table is for the short list sites and a few others originally considered in the short list development.

This assessment was received by Council on 20 October 2022, and was prepared by:

Makareta Wesley-Evans

Kaitautoko | makareta@aukaha.co.nz

Level 2, 266 Hanover Street, Dunedin 9016 | PO Box 446, Dunedin 9054

I am the Kaitautoko for the Mana Taiao team and I have written out a Cultural Values Assessment (CVA) for the SDFT Bike hub and park n Ride.

This document has been supported by Rūnaka members from Te Rūnaka o Ōtākou.

Location	Mana whenua	Potential impact	Recommendation
Otago Museum			
Nohoaka	Not near an active or known Nohoaka	N/A	
Statutory acknowledgment areas	No statutory acknowledgements	N/A	
Wāhi tūpuna (Ancestral landscapes)	No Wāhi tūpuna landscapes in this location.	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near a wetland	N/A	
Margins of water courses	Not near any water courses	N/A	
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per – PDP-Accidental Discovery Protocol.
Biodiversity	Flora Trees line the pathways around the museum Fauna Bird species occupy the reserve sometimes Fish No fish species at this site		
Heritage Building	Yes		
Hunter Centre carpark			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No known areas of statutory acknowledgement areas	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of wāhi tūpuna in this area	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water courses	Not near any water courses	N/A	

Location	Mana whenua	Potential impact	Recommendation
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per – PDP-Accidental Discovery Protocol.
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	No		
Frederick St/SH1 carpark			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No known statutory acknowledgements	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of Wāhi tūpuna in this area	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water courses	No margins of water courses	N/A	
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per – PDP-Accidental Discovery Protocol.
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	No		
SDHB Kindy (on street)			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No known statutory acknowledgements	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of Wāhi tūpuna in this area	N/A	

Location	Mana whenua	Potential impact	Recommendation
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetland areas		
Margins of water courses	No margins of water courses		
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per – PDP-Accidental Discovery Protocol.
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	No		
DHB historic pool building			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No known statutory acknowledgements	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of wāhi tūpuna in this area	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water courses	Not near any margins of water	N/A	
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per - PDP-Accidental Discovery Protocol.
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	Yes		

Location	Mana whenua	Potential impact	Recommendation
Great King Street carpark			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No statutory acknowledgements	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of any wāhi tūpuna in this area	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water courses	Not near any margins of water	N/A	
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per – PDP-Accidental Discovery Protocol.
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	No		
Harrop Street carpark			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No statutory acknowledgements	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of any wāhi tūpuna in this area	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water courses	Not near any margins of water	N/A	
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per – PDP-Accidental Discovery Protocol.

Location	Mana whenua	Potential impact	Recommendation
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	No		
Upper Moray Place carpark			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No known statutory acknowledgements	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of any wāhi tūpuna in this area	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water courses	No margins of water courses	N/A	
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per – PDP-Accidental Discovery Protocol.
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	Yes		
Lower Moray Place carpark			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No statutory acknowledgments	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of any wāhi tūpuna in this area	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water courses	No margins of water courses	N/A	

Location	Mana whenua	Potential impact	Recommendation
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per – PDP-Accidental Discovery Protocol.
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	Yes		
Building between one-way pair			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No statutory acknowledgments	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of any wāhi tūpuna in this area	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water courses	No margins of water courses	N/A	
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per - PDP-Accidental Discovery Protocol.
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	No		
Queens Garden SH1			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No statutory acknowledgments	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of any wāhi tūpuna in this area	N/A	

Location	Mana whenua	Potential impact	Recommendation
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water	No margins of water courses	N/A	
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per - PDP-Accidental Discovery Protocol.
Biodiversity	Flora There trees surrounding the reserve Fauna Bird species visit the reserve most days Fish No fish in this area		
Heritage Building	No		
Under Jetty St overpass			
Nohoaka	No known Nohoaka	N/A	
Statutory acknowledgment areas	No statutory acknowledgments	N/A	
Wāhi tūpuna (Ancestral landscapes)	No signs of any wāhi tūpuna in this area	N/A	
Water quality	Works is not proposed within a waterway		
Wetlands	Not near any wetlands	N/A	
Margins of water	No margins of water courses	N/A	
Māori heritage and archaeological values	NZAA Nothing site specific Kā Huru Manu maps Nothing site specific KTKO CMP Viewer Nothing site specific	N/A	We should recommend that the applicant comply with protocols as per – PDP-Accidental Discovery Protocol.
Biodiversity	Flora No flora in this area Fauna No fauna in this area Fish No fish in this area		
Heritage Building	Yes		