

Christchurch Central Parking Plan

2015







Executive summary

Increased certainty about the current availability and future provision of parking in the Central City is important for providing confidence in the rebuild of a thriving Central City. It is important for those working in the city, those wishing to shop and visit attractions, and developers wishing to invest.

This Christchurch Central Parking Plan (the Parking Plan) enhances certainty by providing information about the current availability of parking within the Central City, along with information on future provision. Both on-street and off-street vehicle parking is included. Information on future cycle parking needs is also provided.

The Parking Plan is a non-statutory document and forms part of the *An Accessible City* (the transport chapter of the Christchurch Central Recovery Plan) work programme, shown in Figure E.1. An Accessible City will contribute to a greener, more people friendly and welcoming central city. The Parking Plan plays an important part in the larger plan for An Accessible City helping make it easier for people, cars, bicycles and public transport to get to Christchurch Central and move around. Further information on An Accessible City is available at:

http://ccdu.govt.nz/the-plan/an-accessible-city



Figure E.1: An Accessible City work programme.

There are six parts to the Parking Plan:

- A set of parking principles to guide the design and location of new parking facilities
- A short-term parking forecast tool (current to three year forecast)
- An operations plan
- A long-term parking model (forecast to year 2041)
- A cycle parking forecast
- A delivery plan

The findings of each of these six components have helped inform the development of the Parking Plan. What this information tells us is that currently there is sufficient car parking capacity to cater for existing demand (as at early 2015). However, there are some "hot spots", such as around the Christchurch Hospital area, where demand exceeds supply on certain days and at certain times. This Parking Plan sets out the measures that are being taken to ensure current adequate supply.

The long term parking model referred to above, uses the anticipated Christchurch Central Recovery Plan land uses in the Central City and wider Urban Development Strategy land use forecasts to project likely parking demands out to year 2041. The projected number of jobs and activities from the land use modelling are used to estimate future parking demands and map these against likely supply. In terms of future demand the next few years will see an increase in parking demand as construction activity and rapid land use change within central Christchurch occurs. Some of this increasing demand, especially from commuters, will be able to be met through increased use of walking, cycling and public transport infrastructure. However, some demand will also need to be met through the provision of new and replaced public and private car parking facilities. The parking principles in this Plan have been developed to help guide the design and location of new parking facilities.

Short stay parking encourages people to visit the Central City and helps to support access to business, hospitality and retail sectors. The recommended priority for the Council is to focus on the delivery of this short stay (visitors, up to three hours duration) parking rather than long stay (commuter, three or more hours) parking, to encourage visitors and to support businesses. This may be through the rebuild of Council's own parking buildings, the provision of other new parking areas, and / or by working with the private sector to deliver parking infrastructure or services. In the short term, while construction is underway, the development of temporary car parks on vacant sites remains the single most effective mechanism for increasing parking supply through to 2018.

The greatest demand for short stay parking is expected within the Core, particularly around the Retail Precinct, and the Health Precinct, shown in Figure E.2. To support these areas, the Council have already committed to replacing off-street parking at Lichfield Street to at least pre-earthquake levels (either by Council or by private investors) and The Crossing car park is now owned and to be constructed by the Carter Group. Council's Draft Long Term Plan includes funding for the replacement of parking which is recommended to support the anchor projects north of Cathedral Square. The Council and the Crown are also considering the parking and servicing needs of the individual Anchor Projects in the Central City.



Figure E.2: Forecast short stay (visitor) demand by 2041.

This Parking Plan sets out the Council's plan for monitoring and assessing parking demand and supply and sets out those principles that should guide future parking provision including the proposed focus on short stay provision. The Council will continue to work closely with the private sector to facilitate opportunities to deliver short stay parking facilities, especially at the priority locations identified in Figure E.3. As before the earthquakes, the majority of long stay parking to meet the needs of commuters and business will continue to be met within commercial developments. An Accessible City and the Recovery Plan contain provisions for this to be the case. There are also opportunities for developers who wish to build their own separate parking facilities for either long stay or short stay users.





The intention is that this Parking Plan will be of assistance to those wishing to access and invest in the city both now and in the future. The Parking Plan is a living document that will be updated as new information comes to hand. One of the aims of the Parking Plan is to improve the flow of information on parking. Up-to-date information will be provided on parking at the following Council website:

www.ccc.govt.nz/parking

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1. Introduction

The Christchurch Central Parking Plan (Parking Plan) provides information on existing and future parking provision within the Central City.

The Parking Plan is intended to help the Council, the Canterbury Earthquake Recovery Authority (CERA), the Christchurch Central Development Unit (CCDU) and the development and business communities alike, in gaining a shared understanding of ongoing parking needs and supply across the Central City during the recovery phase.

The Parking Plan summarises and brings together five key components of parking into one plan, these are illustrated in Figure 1.1.



Figure 1.1 Components of Christchurch Central Parking Plan.

The Parking Plan is a live document with supporting tools (models and maps) which identify the likely short stay (less than three hours) and long stay (three or more hours) parking demands, preferred locations and broad quantity of parking facilities needed to support key destination areas, and the Central City as a whole.

The Parking Plan and supporting information will be made available and kept live on the Council parking website at:

http://www.ccc.govt.nz/parking

1.1. Purpose

The Parking Plan provides clear information on expected parking demand and likely supply.

The purpose of the Parking Plan is to:

- 1. Provide the key source of information for the Council, Crown and development and business sector alike to coordinate the delivery and monitoring of off and on street parking provision (in both the short term and long term) throughout the Central City. This includes the provision of parking through anchor projects, private development and Council capital asset and operational programmes.
- 2. Provide clear information on parking demand and likely supply to the private sector, development and business community alike. The aim is to enable informed decisions about development and management of parking provision, and opportunities to be involved in the provision of private and public parking facilities within the Central City.
- 3. Coordinate communication and information to the Minister for Canterbury Earthquake Recovery, Councillors, the development and business sector and the community about policy setting and development opportunities in the Central City for parking.
- 4. Inform the An Accessible City Implementation plan over the delivery of parking projects to ensure good integration with the implementation of transport projects, the Public Realm Network Plan, Retail Precinct Plan and Anchor Projects.

1.2. Background

The Parking Plan forms part of the An Accessible City.

An Accessible City is the transport chapter contained within the Christchurch Central Recovery Plan and supports the vision of central Christchurch becoming the thriving heart of an international city. An Accessible City provides for a transport system that will be flexible and resilient and will accommodate future population and travel growth. The An Accessible City work programme illustrated in Figure 1.2. Further information on An Accessible City is available at: http://ccdu.govt.nz/the-plan/an-accessible-city



Figure 1.2: An Accessible City work programme.

Accommodating travel growth and access to central destinations without worsening traffic congestion is a significant challenge for the successful implementation of An Accessible City. Increases in bus patronage and those choosing to cycle to the Central City, along with associated growth in pedestrian movement, are being encouraged. However, people will continue to travel into the Central City by vehicle (car, taxi, truck) by necessity or by choice. Therefore, taking account of servicing needs, including for emergency services vehicles, means that parking and servicing provision is essential to support the transport needs of the new Central City.

Increased certainty around current and future parking and servicing provision is therefore important for those who need to travel to the Central City by vehicle and is particularly important for those developers and businesses who want to invest in the Central City.

Prior to the Canterbury earthquakes there were more than 36,000 car park spaces within the avenues.¹ More than 26,000 of these were off-street car parks and were mainly provided by the private sector as part of their business, or were residential parking. The Council managed a total of around 10,000 on-street car parking spaces.

¹ Traffic Design Group (2014) Long Term Parking Technical Report pg. D2

Of the 26,000 off-street car parking spaces, 5500 were in public off-street car parks. The Council managed 3000 of these and commercial operators managed the remaining 2500. The pre-earthquake supply is summarised in Table 1.1.

Parking type	Council managed	Privately managed		
On-street	10,000	0		
Off-Street	3000	23,000*		

*Some of these privately managed car park will have been available for public visiting shops/businesses (e.g. South City) and included 2500 publically available parking spaces managed by private operators.

Table 1.1: Parking supply before the Canterbury earthquakes.

Most of the 5500 public off-street car park spaces (Council and privately provided) have been lost due to earthquake damage. In their place a number of temporary public parking facilities have been established by both the Council, the Crown and third-party providers. Many of these temporary parking sites will be lost as buildings are constructed on these temporary parking sites. Therefore this loss of available temporary parking is a risk to confidence in, and the pace of, Central City recovery.

The significant rebuilding activity occurring in the Central City over the next few years does however provide a unique opportunity to look afresh at the Central City's parking needs. It also provides the chance to ensure parking provision is easily accessed and equally matched to business and visitor need and achieving the vision of the Christchurch Central Recovery Plan. The An Accessible City proposals for the transformation of Central City streets and the establishment of anchor projects will also reduce pre-earthquake levels of on-street parking, and so planning for future supply on and off street must take this into consideration. At the same time there is an urgent need to understand the long-term parking requirements of the Central City to help inform the design of the Anchor Projects and early private developments.

2. Parking Plan

2.1. Parking principles

Parking principles will help to guide the design and location of parking facilities.

To assist with implementation of parking in the Central City and to guide the expected outcomes of the Parking Plan, parking principles have been developed. The parking principles are to:

- Provide parking to support economic vitality.
- Council to prioritise public short stay parking (visitor and shopper) to support businesses.
- Ensure there is safe and easy access to all car parks.
- Design all forms of parking to integrate with the surroundings.
- Manage all forms of parking to achieve high utilisation and incorporate smart technology where appropriate (such as electric pricing, electric vehicle / cycle charging, wayfinding and occupancy monitoring systems).
- Minimise the on-street effects of servicing by providing service lanes.
- Taxi and coach parking to support key precincts.
- Cycle parking is provided in addition to vehicle parking to support travel choices.

These principles are discussed in more detail in Appendix A. Figure 2.1 illustrates how the parking principles can be applied to influence the design and location of parking facilities.



Figure 2.1: Parking principles.

When the parking principles are applied, public parking buildings will be located to ensure safe, direct and easy access, preferably from local distributor streets. Conflict between vehicles accessing the buildings and other road users, especially those walking and cycling, will be managed. The design of the building façade will integrate with the surroundings, with a preference for mid-block sites that have continuous active frontages at street level. For example, the building may be sleeved by retail activities. To manage the effects on the transport network and to increase utilisation, off-street public parking buildings may need to be smaller than before the earthquakes.

The careful selection of the location of parking facilities, along with improved wayfinding (signs/apps) will also ensure quicker and easier access with minimised congestion from reduced searching for vacant spaces. Car drivers will spend less time travelling around looking for a parking space and this will allow them to have more time to shop and visit businesses. Off-street short stay public parking buildings will therefore ideally be located to serve key destination areas within a five minute walking distance. In simple terms, people will be encouraged to park once and stay/shop longer.

2.2. Short term parking forecast tool

The short term tool allows Council to plan and identify when and where intervention is required to increase temporary parking capacity and improving utilisation.

The tool is a basic model of the current demand and supply projections for public parking within each of the parking zones out to 2018. The parking zones are illustrated in Figure 2.2. The outputs from the tool is illustrated in Figure 2.3.



Figure 2.2: Parking zones in the short and long term parking model.



Figure 2.3: Example of short term parking forecast tool, summary map of the first quarter of 2014.

The tool draws on information from quarterly physical parking surveys, the LINZ forward work planner (which includes construction timing information), construction worker demands, Anchor Project effects and the impacts of construction on on-street supply. The tool uses this information to produce heat maps of where utilisation is high and includes forecast information to 2018.

The data for first quarter 2014, shown in Figure 2.3, indicates that generally there is sufficient capacity across the parking stock (public and private) over the entire Central City to cater for the existing demand. However, there are some "hot spots" where demands currently exceed supply at times such as around the Christchurch Hospital and the Civic precinct. These hotspots are forecast to increase through to the fourth quarter 2015.

The tool can provide more detailed summaries and forecast's for each precinct. As an example of the information available, the demand and supply rates for the Retail Precinct are summarised in Table 2.1. The current demand and supply rates are very dynamic and will be constantly monitored and updated (every quarter) by the Council. The information from the monitoring and projections will be used to ensure more car parks can be added at the right place and time.

Parking type	Supply	Demand	Occupancy
On-street Metered	74	80	100%
On-Street Unmetered	10	14	100%
Off-Street	334	263	79%
Total	418	357	85%

Table 2.1: Demand and supply rates retail precinct, February 2015.

The tool can forecast the under supply and over supply of public parking facilities through to the end of 2018. The supply through this period is likely to diminish rapidly without intervention. The most significant factor contributing to this decline is the expected loss of on-street parking spaces associated with the SCIRT work programme (concluding in 2015) and increasingly the implementation of the enhancements to the public realm through wider footpaths, tree plantings and dedicated cycle lanes as well as gradual loss of temporary off street facilities as the rebuild intensifies. The cumulative impact is expected to result in the removal of up to 3900 on-street spaces. This is at a time when parking demand picks up. The demand generated by construction workers is also notable and is expected to peak at around 800 spaces towards the end of 2016.

The culmination of these effects will mean additional parking spaces are needed if the objective is to keep supply at or above demand. Importantly, there are opportunities to better manage the existing parking stock to improve the availability of parking spaces. If current car parks were better used, fewer additional car parks would need to be provided. For example if utilisation can be increased to 85 per cent then significantly less additional parking spaces would need to be provided. The provision of public or private temporary parking facilities remains the most effective way of meeting the changing demands being experienced now and expected over the next three years.

2.3. Operations plan

The Council needs to manage both its on-street and off-street public parking resource.

The Council needs to have a greater ability to respond to the fluctuating parking demands created by a rapidly changing city. There is also a need to manage and maximise all parking occupancy as a high priority to encourage business vitality, economic activity and accessibility. A car parking operations plan, primarily focussed on Council operated supply, will be prepared to focus initially on the short term to 2018. This will seek to develop policy and mechanisms to ensure the correct amount and type of parking is available when and where required. This can be achieved by:

- Flexible pricing and metering to optimise parking and achieve parking occupancy targets of approximately 85 per cent.
- Extension of the delegated authority to Council staff for operational decisions, such as pricing and locations.
- Extension and review of the current residential parking scheme to use new technology to administer and monitor the scheme.
- Extension of paid parking areas to the Avenues and other/or hot spots, excluding residential parking, to increase supply and control.
- New technology to improve parking management, including options for smart technology, electric charging, payment
 options, wayfinding and time of day management.

2.4. Long term parking model

The long term parking model is a live resource with a supporting technical report which identifies the likely locations and quantity of parking facilities needed to support key destination areas, in the Central City out to 2041.

The primary data in the model is the long term land use forecasts out to 2041, featured in both the Christchurch Central Recovery Plan and the Greater Christchurch Urban Development Strategy. The land use forecast in Figure 2.4, shows the expected increase in the number of people living, working and visiting the Central City. This data also provides indicative floor areas for a range of activity types as well as the forecast number of jobs associated with each activity.



Figure 2.4: Central City land use summary.

Long stay parking demands are influenced by the projected number of jobs, travel mode splits and demands change by the day of week, time of day, and location. Short stay parking demands are calculated by slightly different variables including the activity type, floor areas, parking demand rates (utilisation), location, time of day, and access to other transport modes. The long term parking model allows these variables to be tested to understand how they impact on the future parking demand.

The model provides the capability to assess the effects of different levels of parking supply, both on-street and off-street on the demand / supply relationship. The amount of on-street parking available within the city will change as key transport projects are developed and streetscape enhancements implemented. Off-street parking for both short stay and long stay needs is expected to be provided in a variety of forms both by private developers and by the Council.

A preliminary scenario of long term demand and supply based upon the proposals of the Central Christchurch Recovery Plan has been modelled. This provides the quantitative analysis to support the Parking Plan. The analysis is separated into long stay (more than four hours) and short stay (less than three hours) parking, mainly representing staff and visitor parking needs respectively. A range of numbers has been used for the future demand and supply relationship to allow for uncertainty around the different variables outlined above. The analysis has been summarised into the three parking zones outlined in An Accessible City: the Core, Inner and Outer Zones. These are shown in Figure 2.5.



Figure 2.5: Parking zones: outer, inner and core zones.

Residential parking

The land use forecasts project that approximately 18,400 people will live in the Central City by 2041, this is equivalent to 10,400 households. The large number of residential households proposed may increase demand for associated on-street parking irrespective of the likely attractiveness of such properties to low vehicle ownership given their central location and good access to new walking, cycling and bus networks. The residential parking requirements for new developments in the Central City are set in the District Plan. The District Plan requires no on-site car parking for residential activity within the Central City, other than disabled parking, If parking is provided, the parking area of a site shall be no greater than 50% of the Gross Leasable Floor Area of the buildings on the site. In the model, the parking supply in new residential developments is expected to be about 1 space per unit, this assumption is based on similar residential developments in New Zealand. When development occurs, if fewer off street spaces are provided within developments, and car ownership exceeds expectations in combination with commuter parking affecting residential areas, then intervention may be needed. The effects of long stay parking on residential streets will therefore be monitored and could be reduced with dedicated long stay parking buildings or consideration of new technologies for parking management or park and ride for commuter parking.

Long stay parking to year 2041

Long stay parking is typically used by employees and provides commuter parking for longer than four hours. The forecast number of jobs in the Central City by 2041 is illustrated in Figure 2.5. This shows that the highest number of jobs will be around the Core and the Health Precinct areas.



Figure 2.5: Location of jobs in forecast year 2041.

The most critical period for long stay parking is during the week in the middle of the day because this is the time at which most employees are at their workplace. The 2006 Census information indicates that 57 per cent of employees within the Central City drove to work, creating demand for car parking. To manage congestion, by 2041, the An Accessible City sets out a transport network to encourage more commuters to travel by bus, cycle and walking. The demand forecasts in the model therefore assume a 10 per cent shift in drivers to other modes of transport by 2041. This may be higher with improved public transport and cycling networks, therefore a 20 per cent shift in drivers has also been modelled to produce a range for the demand forecast. In reality, the analysis represents one scenario with variables which can be changed as more information becomes available or to test different scenarios.

An indication of the expected weekday, long stay parking demands and supply based on the 2041 land use information are provided in Figure 2.6 and Table 2.2. The analysis indicates that the demand for long stay parking is estimated to be between 20,600 and 22,800 spaces, based on around 64,000 jobs by 2041. This demand will be strongly influenced by the number and location of office workers who will account for about 60 per cent of employees in the Central City and 75 per cent within the Core. The demand for long stay parking will mostly be met through a mixture of private supply within individual developments and by more people travelling by public transport, walking and cycling.

Based on these supply assumptions, the model shows that there is likely to be a shortfall, of up to 2200 spaces, in the long stay parking supply within the Central City by 2041. The predicted shortfall in the Core could be between 4100 to 5100 spaces at peak time. This shortfall can largely be balanced by the on-street and off-street provision in the Inner and Outer Zone. This would mean that commuters would need to walk further from their car park to their destination. Opportunities for the introduction of park and ride or other innovative options to link the last leg of the journey such as cycle sharing could also be available if there was sufficient demand.

The shortfall in long stay parking supply arises because the model assumes a low rate of supply for office activity within the Central City, typically about 1 space per 100m² Ground Floor Area, and less in the Core, even though typical office supply rates in New Zealand are higher in the range of 2-3 spaces per 100m². Whilst the District Plan enables developers to provide up to 50 per cent Ground Leasable Floor Area as parking, the lower supply rates have been used in this model because they are consistent with the rates reported in early resource consents for office buildings within the new Central City. Ongoing monitoring of new resource consent applications and mode share will be used to test these forecasts and assumptions.

Long stay parking is mainly used by workers. It is expected that while there is a projected shortfall in long stay parking, improved cycling, walking and public transport networks and supporting travel demand management programmes will encourage a gradual change in the travel modes people are using. The model suggests that with a 10% reduction in the mode share for private car travel, employment within the Central City will still create a parking demand that is in excess of the forecast parking supply. However, with a 20 to 30 per cent reduction in mode share for private car travel, there would be sufficient parking within the whole Central City to meet the expected long stay demands.



Figure 2.6: Forecast long stay demand to year 2041.

Location	Demand	Supply	Potential		
		On-street	Off-street	Total	Shortfall
Core	8100 to 9100	-	4000	4000	4100 to 5100
Inner zone	2700 to 3000	100	4500	4600	(1600 to 1900)
Outer zone	9,800 to 10,700	2800	9200	12,000	(1300 to 2200)
Five Avenues (Total)	20,600 to 22,800	2900	17,700	20,600	0 to 2200

Table 2.2: Forecast long stay demand and supply of parking spaces (mid-day and mid-week by 2041).

Short stay parking to year 2041

The demand for short stay (visitor) parking demands will be driven by retail and hospitality activity as the Central City is reestablished. The peak demand period for these is at the weekend. Although demand will still be high during the week, it is expected to be lower than during the weekend because a high proportion of the customers are expected to be employees and residents who are already in the city and therefore do not need a parking space.

An indication of the forecast demand and supply for short stay parking at the weekend peak by 2041 is shown in Figure 2.7 and Table 2.3. A range is used to show the effects on the amount of parking needed if demand is increased and less private parking is supplied than expected.

Across the Central City, the modelled scenario shows a peak demand (at the weekend) for short stay parking of between 13,200 and 14,600 spaces. Retail and hospitality activities account for about 50 per cent of the demand and Anchor Projects account for a further 40 per cent of the demand. In the Core the peak demand is expected to be about 4,900 short stay spaces. The short stay parking will mostly be met through a mixture of private supply within individual developments, through the supply of on and off-street public parking and by more people travelling by public transport, walking and cycling.



Figure 2.7: Forecast short stay demand to year 2041.

Location		Demand	Supply			Potential Shortfall
			On-street	Off-street	Total	
Core		4900 to 5800	300	3100 to 3300	3400 to 3600	1500 to 2400
Inner zone		700 to 800	100	4500	4600	(3800 to 3900)
Outer zone		7500 to 8100	1200	6300 to 6600	7500 to 7800	600 to (1100)
Five	Avenues	13,200 to 14,600	1600	13,900 to 14,400	15,500 to 16,000	(900 to 3400)
(Total)						

Table 2.3: Forecast short stay parking demand and supply (weekend peak) by year 2041.

The number of public short stay parking spaces required is dependent upon the level of private off-street provision within the Core and the parking demand rate adopted. The demand rate for the retail activities within the Core is expected to be about 2.9 spaces per 100m² GFA because of the central location, however a higher rate has also been tested. Within the Core area, the off-street parking supply rate for individual retail and hospitality outlets is expected to be low or none at all because there is an expectation that public parking will be provided in specific locations, either privately or by Council. The model also assumes that around 1,200 short stay public spaces will be provided in the southern part of the Core (Lichfield Street and the Crossing parking buildings).

The model indicates that with the assumed supply, there is a potential shortfall of between 1500 and 2400 short-stay parking spaces within the Core but there is also a likely oversupply of between 900 and 3400 spaces within the rest of the Central City (Inner and Outer zones). The high level of demand within the Core is driven by the Retail Precinct containing a higher quantity of retail and hospitality type activities. The demand for parking in the northern part of the Core is related to the proposed civic and entertainment facilities located there.

There is an opportunity for some of the excess short stay demand in the Core to be met within the inner zone. This will involve customers having to walk a little further to their destinations. The ideal walking distance is a five minute walk to short stay parking facilities.

The shortfall could also be mitigated to some extent by increasing the number of Council-operated parking spaces within the Core and by encouraging more shared use of private parking facilities by both time of day and by day of week. This includes those primarily serving weekday long stay parking needs, to perhaps cater for the extra short stay parking demands at weekends. The demand for car parking could also be reduced through the provision of more choice of travel modes and through the increased number of people living within the Central City.

The short stay demand for the retail parking zone (a larger area than the Retail Precinct) is approximately 2700 spaces at the weekend peak. To inform the Retail Precinct Plan further analysis was undertaken to determine the expected parking demand and supply for the Retail Precinct (bounded by Durham, Hereford, High and Lichfield Streets) as defined in the Christchurch Central Recovery Plan. This is a smaller area than the retail parking zone. This analysis is available to accompany the long term parking model.

Preliminary parking locations assessment

Based on the initial analysis, blocks have been identified where additional parking supply by 2041, would be needed to meet the expected long term parking demands for the new Central City at the end of reconstruction. These are shown in Figure 2.8.

The locations identified are intended to reflect the parking principles and transport networks outlined in An Accessible City. The locations identified for long stay parking facilities are chiefly along the northern boundary of the inner core, close to the Innovation Precinct and Stadium, and between the Health Precinct and Metro Sports Facility. Short stay parking will be needed across the core area and the Health Precinct and Metro Sport Facility. Short stay is especially important in the Retail Precinct where the greatest shortfalls are expected.



Figure 2.8: Indicative locations of where future off-street parking buildings (private or Council owned) would best support demand.

The provision of parking facilities at these indicative locations may be either by the Council, by the Crown through Crown led Anchor Projects, or by the private sector. Implementation of parking facilities needs to be staged and monitored as the rebuild progresses and as decisions on parking are made.

The Council's priority is to focus on the delivery of short stay (visitor) parking rather than long stay (commuter) parking to encourage visitors and to support businesses. This may be through the rebuild of its own parking buildings, and provision of other parking facilities and / or by working with the private sector to deliver parking infrastructure and services. To support these areas, the Council have already committed to the replacement of the Lichfield Street parking building (by Council or by private investors) and The Crossing car park is now owned and is being constructed by the Carter Group. The size and location of parking facilities need to reflect the parking principles, especially to provide safe and easy access from local distributor streets and to support the transport networks outlined in An Accessible City.

Further investigations are needed into other opportunities to support the Central City, considering locations around the Civic, Performing Arts, Health Precincts and Metro Sports Facility. A parking facility immediately north of Cathedral Square could help to replace the Manchester street parking building and to support the core north and other Anchor Projects such as the Central Library, the Square, and Convention Centre.

Long stay parking can be delivered through both private developments either ancillary to individual developments (up to 50 per cent of gross leasable floor area), by private parking facility providers and by a reduction in demand due to commuters to the Central City using other transport modes. The locations identified and parking analysis provides information to inform the development and business sector of where and how much additional long stay facilities would support demand.

Park and Ride (bus or cycle)

Park and ride facilities on the edge of the Central City could also have a role in meeting the long stay, commuter parking demand. Bus services and / or cycle share schemes could link parking facilities on the periphery to offices and destinations within the Central City, especially in the core area. The development of Park and Ride sites would need to take into consideration the wider network perspective, so that the parking supports both the Central City and also demand from other centres (such as Sydenham). Council would work with the private sector to deliver this solution over the longer term. The immediate priority is to focus on providing short stay parking to support visitors to the central city, particularly the Retail Precinct.

At this stage, there are many unknowns and in particular, there is some uncertainty regarding the actual parking provision by commercial developments throughout the city. Consent information is being monitored and as more information becomes available in development proposals, the parking model inputs will be monitored and can be updated to refine the parking demand and location analysis.

2.5. Cycle parking

The numbers of people cycling in Christchurch are projected to triple by 2041. Cycle parking is therefore a key component of the Parking Plan.

The Parking model estimates that there will be a total car parking demand (both long and short stay) of approximately 36,000 spaces in the Central City by 2041. The demand forecasts have been used with the transport mode share projections in An Accessible City to calculate the estimated proportion of parking demand for cycle parking in the Central City. An Accessible City aims to achieve a tripling of cycling trip numbers in the Central City by 2041. This will equate to an 11 per cent cycling mode share (a tripling) or 7.4 per cent mode share (a doubling) by 2026.

The long term (2041) demand for cycle parking in the Central City is estimated to be around 4000 cycle spaces (2400 long stay and 1700 short stay) in order to support these projected mode shares. The medium term (2026) demand is estimated at 2800 cycle park spaces (1600 long stay and 1200 short stay).

Similar to car parking, short stay cycle parking is needed to support visitors to the central city and long stay cycle parking is needed to support employees and commuters. According to the Christchurch Cycle Design Guidelines², the most important aspect for short stay cycle parking is being in an easy and convenient location for the user, for example, close to a shop entrance. Short stay cycle parking may be as simple as providing a cycle hoop. Long stay cycle parks should be secure, covered, ideally have a locker and potentially showering facilities. Ideally these should be provided at the place of work. More information on the design of cycle facilities can be found in the Cycle Design Guidelines and Appendix C.

The supply of cycle parking will be provided by a mix of individual businesses, the Council and the Crown (through Anchor Projects). The City Plan outlines cycle parking requirements (visitor and employee parking) for private developments in the Central City. Similar to car parking, additional cycle parking to that provided within private developments will also be needed for people cycling. Many individual retail and small businesses are unlikely to be able to provide their own on-site cycle parking.

² Christchurch City Council (2013) Cycle Design Guidelines

The quantity and location of short stay cycle parking should reflect the demand generated from activities on each street. Short stay spaces are especially needed within the streetscape where buildings in the street have no road frontage setback (such as Victoria Street). The location of short stay cycle parking will be considered within the implementation of transport projects, streetscape and public realm improvements and private developments for each street. In some areas there will be a high demand for both short stay and long stay cycle parking facilities, especially within the Core.

The supply and location of long stay cycle parking needs to provide secure and high quality cycle parking facilities at locations where it is perceived there will be the highest demand. Parking buildings and the Anchor Projects also provide an opportunity to integrate safe, secure cycle parking facilities.

These secure parking facilities would ideally be supported by one or two 'cycle hub' facilities which can provide excellent facilities such as showers, lockers, changing rooms, towels, laundry service, mechanic facilities, DIY tools, cycle shop, full time staff during normal hours, 24 hour access cards and air conditioning. Good quality 'cycle hub' facilities in a central location, coupled with secure long and short stay cycle parking facilities across the Central City will provide for the needs of people travelling longer distances. Some Anchor Projects (particularly the Metro Sports Facility, Bus Interchange, Central Library and Stadium) and key parking buildings provide good opportunities to integrate a cycle hub and secure cycle parking facilities.

The long stay demand and potential location of cycle facilities by parking zone in 2041 are illustrated in Figure 2.9. A detailed discussion of the types and locations of the facilities by each zone is provided in Appendix B.



Figure 2.9 The potential locations of long stay cycle parking by 2041.

3. Delivery plan

The Parking Plan provides information and modelling to identify where the principle parking demands (short and long stay) are likely to be in the short and long term.

The Council, the private sector, and to the lesser extent the Crown, all play a key role in delivering parking provision. The delivery plan identifies priority locations and 10 priority actions.

3.1. Council and the Crown's provision of public parking

The priority for the Council is to support the delivery of short-stay parking, this may be through the rebuild of its own parking buildings and provision of other parking areas and or by working with the private sector to deliver parking.

Priority locations

Priority locations for providing short stay parking are shown in Figure 3.1. Some of these locations may also be suitable for providing long stay parking.

The short stay demand for the retail parking zone (a larger area than as defined by the Retail Precinct in the Christchurch Central Recovery Plan) is approximately 2700 spaces at the weekend peak. As discussed in section 2.4, this demand for parking will be met through a mixture of private supply within individual developments, through the supply of on and off-street public parking and by a reduction in demand for car parks by encouraging more people to travel by public transport, walking and cycling.

Short stay, off-street, public parking supply will be needed to support the retail parking zone. The replacement of the Lichfield Street and the Crossing parking facilities will meet some of this short stay demand. Rather than one of two larger parking facilities, the optimal solution is to spread the supply over a number of smaller facilities (400-700 spaces). This improves access and ensures that the transport network remains efficient.

Further opportunities for short stay facilities around the Performing Arts Precinct (to assist in replacement of the Manchester street parking building), Health Precinct, Civic and Metro Sports will be investigated. The design of all facilities should be in line with the parking principles to ensure their efficient operation, as outlined in section 2.1. The Council will continue to work closely with the private sector to facilitate opportunities to deliver short stay parking facilities, especially at these priority locations.



Figure 3.1: Priority locations of for short term parking supply.

The Council and the Crown are also considering the parking and servicing needs of the individual Anchor Projects in the Central city. The projects vary greatly in their purposes and therefore parking needs, but all seek to contribute to the access principles of An Accessible City.

A key focus is to identify potential 'quick wins'. These are early decisions that will support investor and property owner confidence in the central city rebuild. These considerations parallel the development of the Parking Plan, and have been informed with the best information available at the time.

The Lichfield Street and the Crossing parking buildings are the first quick wins to be identified. The Council has committed to ensure public parking is provided at these sites. The Council will continue to work with the private sector on other opportunities where early decisions are needed, particularly for the priority sites in Figure 3.1.

On-street parking

The Council will continue to provide on-street parking where necessary and possible. However, there are likely to be significantly lower numbers of on-street spaces on many streets especially in the Core, than pre-earthquake. This is because more street space will be required for additional landscaping and new and enhanced pedestrian and cycle facilities. Remaining on-street parking will be prioritised for disabled parking, taxis, service vehicles and short-stay visits, rather than for commuters.

Short term provision through temporary parking

The development of temporary car parks on vacant sites remains the single most effective mechanism for increasing parking supply to 2018. This will, however, become increasingly difficult as rebuilding progresses. The pursuit of additional parking supply and better utilisation of existing parking will be undertaken in a strategic manner assisted by the short term forecasting tool and operations plan, as outlined in section 2.2 and 2.3.

The provision of logistical and resource advice to maximise the productivity of the existing parking resource and the development of additional car parks in strategic locations are key areas in which the Council needs to focus its attention. To enable staff to quickly respond to increasing and differing demands for parking and improve the short term metered parking occupancy rates, the setting of all metered parking fees has been delegated to the appropriate staff within the Council.

3.2. Private provision of public parking

The Council continues to encourage private interest in parking provision.

Short stay parking

The demand for short stay parking will most likely at times exceed what Council will be providing in some Central City parking zones. Much of this remaining demand will be met by reserve capacity in nearby zones, mechanisms to achieve better shared utilisation of all available parking stock (for example, time sharing the resource) and by private suppliers, as was the case before the earthquakes. The Council therefore continues to encourage private interest in short stay parking provision.

Long stay parking

As before the earthquakes, the majority of long stay parking to meet the needs of commuters and business will likely continue to be met by commercial developments. The An Accessible City provisions provide developers with much more discretion about how much employee parking they believe is right for their developments. Developers will be encouraged to consider parking demands for their developments and then choose the quantum of parking they will provide - up to 50 per cent of Gross Leasable Floor Area (GLFA). Where parking requirements cannot be met on site then developers might choose to liaise with other developers over opportunities for developing or leasing long stay car parks.

An Accessible City includes significant improvements to other transport options for workers to access the Central City. Increased walking, cycling and bus use, particularly by office employees, will affect the long stay parking demand. Park and ride facilities on the edge of the central city, could also have a role in meeting the long stay, commuter parking demand across the central city.

Developers will be encouraged to provide accessible sites, by all modes, to reduce the underlying need for expensive car parking, while retaining the option to provide tenant parking to developments if they wish. Developers may choose to undertake an Integrated Transport Assessment to determine appropriate levels of parking to suit an individual development's needs. An Integrated Transport Assessment (ITA) is a comprehensive review of the potential transport impacts of a proposed development. Guidelines for undertaking Integrated Transport Assessment are available on the Council website.

Opportunities

There are opportunities for developers who wish to build their own parking facilities for either long stay or short stay users. The parking model shows where long term demand is likely to be and potential locations for parking facilities, as shown in Figure 3.2.

Private sector investment in the provision of parking buildings is encouraged, and potential developers should contact the Council's Parking Unit of the Council in the first instance. It will coordinate feedback and welcome an open dialogue to ensure good provision of parking across the city. The Council will continue to make Parking Plan information available to the private sector to help inform investment decisions. All parking facilities should be designed to reflect the parking principles as outlined in section 2.1.



Figure 3.2: Indicative locations of parking supply.

3.3. Priority actions

Ten priority actions have been identified to progress the Parking Plan over the short term.

The Parking Plan sets out the long term vision for parking in the Central City. The Parking Plan and parking models need to be kept live and information regularly updated as the rebuild progresses. Parking, planning and management will continue to evolve through the recovery phases. The staging of implementation is illustrated in Figure 3.3.



Figure 3.3. Recovery timeframe and delivery of parking.

Ten priority actions have been identified to progress the Parking Plan over the short term. Council funding for parking provision will be considered in the An Accessible City programme business case and the Council Long Term Plan and Annual Plans.

#	Action	Indicative timing	Lead			
1	Quick wins: Progress commitment to decisions on Lichfield Street and to gather options for central city parking provision through an Expression of Interest process.	2015	CCC			
2	Temporary Parking: Short term forecast tool quarterly monitoring and recommendations of temporary facilities required to address shortfalls in parking in the short term. Integrated short Every quarter C term parking into LINZ tool Every quarter C<					
3	 Priority locations (Performing Arts, Health / Metro Sports, Civic and Retail): Expression of Interest process to gather information on options for public parking provision and recommendations to Council. Facilitate investment by private sector in parking provision. 	Varies between anchor projects	CCC CERA			
4	 Parking model: Integrate short and long term parking model. Develop management protocol, share model, and develop update process. Update model as monitoring information becomes available. 	2015/16	CCC			
5	 Monitor: Private supply of parking within developments. Further test supply assumptions as more information becomes available. Supply of parking through the Anchor Projects. Mode split at regular intervals and its effect on long stay parking demand. 	Quarterly then annually	CCC CERA			
6	 Communications plan: Update parking website and make parking information available. Communications, engagement meetings with interested parties, through existing forums. 	2015/16	CCC CERA			
7	 Operations: Prepare Operations Plan, workshop with Council, and Council approval. Undertake a customer survey of parking needs to inform design of spaces. 	2015/16	CCC			
8	 Accessibility: Develop accessibility model to test the relationship between the location of parking facilities on demand in different zones (e.g. outer zones and residential areas). Traffic signage and cycle signage to parking and link to the wider AAC signage plan. Investigate car clubs and park and ride options 	2016 / 17	CCC CERA			
9	 Cycle parking: Investigate opportunities with Anchor Projects and within parking buildings for cycle hub and secure long stay cycle parking facilities, Investigate commercial models for providing cycle hubs. Provide short stay cycle parking on key cycleways in the Central City as part of the AAC Transport Projects implementation. 	Ongoing	CCC			
10	technologies	2015/16				

3.4. Governance and management

The lead agency for the delivery of the Parking Plan is the Council. The Council and CERA will work closely with the private sector, who play a key role in delivering public parking.

The Council are the lead agency for the delivery of the Parking Plan because they are the Road Controlling Authority and responsible for decisions on Council parking facilities and parking management. Delivery of parking will be monitored and reported through a joint Council and CERA governance structure. This enables joint decision-making and ensures road controlling authority requirements are carried out.

The Council and CERA also work closely with the private sector, who play a key role in delivering public parking. The Council seeks to enhance information and engagement between the three groups to ensure delivery of parking is coordinated and timed to support the rebuild of the Central City. This relationship is illustrated in Figure 3.4.



Figure 3.4: Delivery relationships.

Management of the parking plan

The information in the Parking Plan and within the parking models needs to be kept 'live' to ensure that information about the demand and supply of public and private parking remains current. This includes adding to existing information around Anchor Projects, temporary parking and planned public parking facilities. The models also need to be updated as new land use information is known, such as the Urban Development Strategy land use scenario. A management protocol will be developed to ensure that the model can be shared and used to inform parking decisions. When the model is updated, information within the Parking Plan and on the website will also be updated by the Council.

3.5. Communication of information and engagement

Parking provision is a high priority for many involved in the Central City rebuild.

There is currently a high level of demand for information on parking provision and a strong desire for increased certainty around current and future supply. Developers in particular want a clearer picture on parking provision and the Council's and Crown's intentions.

A key purpose of the Parking Plan is to provide information about the demand and supply of parking within the Central City and to identify and communicate the Council and Crown's intentions in parking provision. The Council, in a close partnership with CERA, will lead this engagement.

In the early stages of delivery, the Parking Plan will inform the public with information to assist them in understanding the parking problem, options, opportunities and solutions. Early information and key messages to the public about parking has already been provided through Frequently Asked Questions on the website, further information will be provided through the:

- Website
- Frequently Asked Questions
- Information leaflet or maps
- Briefings with interested parties
- Media releases.
- Wayfinding

Once decisions on the Council owned parking facilities are made, the parking projects will move into the design and construction phase. Public consultation will be an important part of this process under the Local Government Act 2002. A new project engagement plan will be established in preparation for public consultation.

Appendices

Appendix A: Parking principles

To assist with implementation of the general policy for parking, a range of parking principles have been developed to guide the expected outcomes of the Christchurch Central Parking Plan.

These parking principles are:

- Provide parking to support economic vitality.
- Council to prioritise public short stay parking (visitor) to support businesses.
- Locate all forms of parking to provide safe and easy access.
- Design all forms of parking to integrate with the surroundings.
- Manage all forms of parking to achieve high utilisation and incorporate smart technology where appropriate (such as electric pricing and electric vehicle and cycle charging).
- Minimise the on-street effects of servicing by providing service lanes.
- Taxi and coach parking support key precincts.
- Cycle parking is provided in addition to vehicle parking to support travel choices.

The basis of these principles is described below along with potential actions and results. Further discussion of each of the principles is included in the long term technical report.

Provide parking to support economic vitality

To ensure an effective recovery, it is essential that people can travel conveniently to key destinations within the Central City by a range of travel options, including by car, cycle and motorcycle. This will require parking for all modes to be provided throughout the Central City.

To satisfy the demand for parking, a large part of the Central City parking supply will need to be provided on-site as part of commercial development. Council-managed parking facilities will also be provided to support the short stay parking requirements, particularly for key precincts and destination areas. On-street parking will also be available, although at reduced levels compared with the pre-earthquake provision.

In some cases, the use of temporary demountable parking structures will be considered to provide for a flexible response to the rebuild.

Council to prioritise public short stay parking (visitor) to support businesses

Short stay parking encourages people to visit the central city and helps to support people accessing the business, retail and hospitality sectors. The Council's priority is to focus on supporting the provision of short stay parking to encourage visitors and to support businesses. Long stay parking is mostly associated with all day employee parking. Long stay can be delivered through both private developments and by a reduction in demand due to commuters to the Central City using other transport modes. This supports the direction and transport networks outlined in An Accessible City.

Locate parking to provide safe and easy access

Public parking buildings need to be located so that they can be accessed safely and efficiently from the supporting street network. Conflict between vehicles accessing the parking buildings and other road users is to be minimised to support travel by a range of travel options.

It is preferred that public parking buildings are located with access directly from local distributor streets. Accessing the appropriate type of street will minimise conflicts with other travel modes. Where practical, the parking buildings will also be located on the perimeter or outside of the Central City core to minimise the movement of vehicles within the Core. The use of way - finding technologies will assist drivers to locate available parking efficiently, minimising unnecessary vehicular movement on the street network.

Design parking to integrate with the surroundings

Parking buildings can dominate the surroundings and affect activity along their street frontage. Designing building facades to integrate with their surroundings can address the visual effect.

There is a preference for parking buildings to be located on mid-block sites that have continuously active frontages at street level that provide for other uses. The scale and layout of parking buildings should contribute to the usability and attractiveness of a facility, particularly for short stay users in and close to the Core, and users with special requirements such as those who are disabled.

It is anticipated that new parking buildings will typically be smaller than before the earthquakes. However, they need to be costeffective with an economy of scale that justifies the implementation of state-of-the-art operational facilities. If they are too small they will be inefficient and may introduce more access intrusion to street frontages than is necessary.

The quality of the parking design can be as important as the quantity of spaces provided. Vehicle and parking technology will change over time, and the parking facilities should be future proofed to allow for those changes. Some parking and access design related provisions are included in the CCRP, although these typically only address minimum requirements and cannot be relied on by themselves to deliver a quality outcome. It will be important to have professional design assessment addressing traffic engineering and urban design best practice to achieve state - of - the - art design and integration.

Manage parking to achieve high utilisation and incorporate smart technology where appropriate (such as electric charging)

Greater utilisation of parking is to be achieved through planning, design, smart technology and management. Parking demand varies across the day and over the course of a week in each of the key precincts as different activities vary their contribution to the parking demands. Effective management of the parking resource will support these varying demands, whilst minimising the overall number of parking spaces required throughout the Central City.

Operational management procedures will provide the flexibility to influence the utilisation of vehicle parking spaces by means such as variable pricing, and prioritisation of spaces for particular parking stay durations.

In locating and designing parking buildings, opportunities for shared use parking will be assessed. Where there is a primary use for a parking facility, spare capacity at times of low demand may be managed to provide parking to support other nearby activities. This is expected to be particularly achievable for some anchor projects where their peak use will be either irregular or fall outside of the general Central City peak parking times. At other times it is anticipated that any spare capacity will be utilised to service parking demand from nearby activity. Options to incorporate smart technology, electric charging, one payment options will be incorporated where appropriate to make parking facilities easy and attractive to use,

Minimise on-street effects of servicing

Within the Core and Inner Zone, the development and use of dedicated service lanes will be encouraged to minimise the on street effects of loading activity. As service lanes and access disrupt the active frontage of streets, integrated development is encouraged so that service access and service areas can be shared. Where service vehicles need access off pedestrian-only or shared space streets, their use will be discouraged during shopping and office hours. Access off main distributor streets will also be discouraged at peak travel times to ensure the road network operates efficiently.

Emergency vehicle access will be maintained at all times.

Taxi and coach parking support key precincts

Taxi facilities will be required as part of the development of key precincts and Anchor Projects within the Central City. Coach drop off areas that service key developments such as hotels and the convention centre will be encouraged. To minimise effects on the surrounding area, coach layover areas will preferably be located where there are opportunities for public space to be shared, rather than allocating dedicated parking space.

Cycle parking is provided to support travel choices

Cycle parking will be required at convenient locations throughout the Core and other destination areas. These should be secure, covered where possible, and located at a range of key destinations. Building developers should provide cycle parking in their buildings in line with the District Plan requirements. Secure cycle parking is planned at the new Bus Interchange and at the super stops near the Hospital and on Manchester Street, so that people can easily travel by a combination of cycling and public transport.

Appendix B: Cycle parking approach

The calculations and figures used are based on the figures from the long term parking model.

The Parking Plan determines there will be a car parking demand of 35,700 spaces in the Central City. To calculate the estimated cycle parking demand in the Central City, the projections from the Parking Plan have been coupled with the transport mode share projections from CERA.

By 2041, CERA is aiming to triple the number of cycling trips undertaken in the Central City. This will equate to an 11 per cent cycling mode share. Using these figures it has been forecast that by 2026 the number of Central City cycling trips would have doubled, equating to a 7.4 per cent mode share.

Cycle parking demand

Generally, it is assumed that the long term (2041) demand for cycle parking in the Central City will be approximately 4000 cycle parks. This can be broken down to 2400 long stay cycle parks and 1700 short stay cycle parks.

The medium term (2026) demand is estimated to be approximately 2800 cycle parks. This can be broken down as 1600 long stay and 1200 short stay cycle parks. The table B.1 and Figure B.2 show the cycle parking demand for each parking zone.

The demand for short stay cycle parking will be provided by a mix of individual businesses, the Council and the Crown (through Anchor Projects). The cycle parking requirements for private developments have not been altered from those in Accessible City Chapter of the CCRP. In precincts where it is likely that there will be high private cycle parking provision then this has been accounted for and explained.

As outlined in the Christchurch Cycle Design Guidelines the most important aspects for short stay cycle parking (assuming the design is of adequate standard) is being in a 'quick' and convenient location to suit the user's needs, for example, close to a shop entrance. Long stay cycle parking should be secure, covered, ideally with locker and potentially showering facilities within places of employment. More information on cycle facilities can be found in the Christchurch Cycle Design Guidelines.

Precinct		2026		2041		
	Short Stay 2026	Long Stay 2026	Total 2026	Short Stay 2041	Long Stay 2041	Total 2041
Retail	201	394	591	299	586	879
Core North	125	103	212	186	154	316
Civic	47	155	192	70	230	285
Innovation	45	80	118	67	118	174
East Frame	41	20	53	60	29	79
Victoria	24	55	76	35	81	95
Museum	52	25	74	77	38	110
City West	1	1	2	1	1	2
Kilmore	32	87	118	48	129	175
City North	22	62	85	32	92	126
City North East	8	12	20	12	18	30
City East	37	75	112	55	112	167
Stadium	27	18	23	40	27	34
CPIT	69	69	140	102	102	207
City South	121	135	249	180	200	370
South Frame	36	65	100	54	96	147
Metro Sport	68	74	126	101	110	187
Health	199	208	407	296	309	605

Table B.1: Long and short stay parking demand 2026 to 2041.

Short stay cycle parking

Before the earthquakes Christchurch Central City had approximately 500 short stay cycle parks. In order to meet the projected 2026 demand for short stay cycle parking the number of short stay cycle parks required would be approximately 1200 stands. Figure B.1 shows the demand for short stay cycle parks for each of the precincts.

As outlined in the Christchurch Cycle Design Guidelines, the most important aspects for short stay cycle parking is ensuring they are in convenient locations to suit the user's needs, for example, close to a shop entrance. A comprehensive study from Copenhagen suggests that between 30 or 50 metres would be the maximum distance that people would be willing to walk from cycle parking to their end destination. Having short stay parking located more than 50 metres away from a destination will likely lead to people using street furniture to park their bikes. Using street furniture as cycling parking has an impact on the streetscape and can damage the street furniture.

International best practice is to provide covered short stay cycle parking. In order to promote cycling as a utilitarian form of transport then it is important to make cycle as attractive as possible, providing dry conditions to leave bikes improves the appeal of cycling. The advantages of providing covered cycle parking is that it prevents bicycles from rusting, and helmets (often left with a bike) and seats do not become wet whilst they are parked. Where there are verandas attached to shop frontages it may be possible to extend the veranda to cover the cycle parking without additional shelters. Examples of covered cycle parking can be found below.

Cities across the world are seeing an increase in cycling levels. In order to facilitate this cities are retrofitting the existing urban environment to accommodate short stay cycle parking. Cycle parks are often located in 'spare' urban space as a result of this retrofitting, which often has a negative effect on the urban environment. Locating on-street cycle parking poorly can also have safety implications. Too close to the road and there is a danger of people being hit by cars, too close to the main pedestrian thoroughfare and people may inadvertently walk into handlebars sticking out. With the rebuild of Central City streets there is an opportunity to plan the street environment to accommodate cycle parking into street design from the outset. Doing this would provide areas which are well designed and able to house more cycle stands if required in the future.

A good approach is to agree upon how and where cycle parking should be located in the street environment across the city so it is easily recognisable to cyclists. An ideal location for cycle parking would be between the path and the road, where on-street parking bays are currently located. Where possible, cycle parking areas should be an extension of the pedestrian area rather than being at road level. There should be ramped access onto the roadway to allow easy access to the area from the cycle lane.

The distribution of the cycle parks is an important consideration. Fifty metres is the maximum distance people are willing to park from a destination for short periods. To ensure that the Central City is adequately covered by cycle parking, and given the relative uniformity of the streets grid form (each block being 200m x 100m), the most effective way of achieving an even distribution would be to stagger cycle park locations along both sides of the street. This would equate to four cycle park locations for every 200 metre street section (two locations on both sides of the road) and two cycle park locations for every 100 metre street section. This means that no destination along the street will be more than 50 metres away from a cycle park on a single side of the street. Having the cycle parks staggered on either side of the road will ensure people not have to cross the road to reach their final destination. Using the Retail Precinct as an example, 34 different locations for cycle parking would be required across the precinct with enough room for six bikes at each location (or three cycle stands). This would meet the predicted demand of 201 cycle parks.

The staggered approach of cycle stands assumes an even distribution of land use. However, there may be sections of streets where there is an increased demand for short stay cycle parking, or sections where there is less demand. For this reason it is important that the specific location for each cycle stand group is carefully planned. Cycle fix-up stations are also becoming more familiar in urban environments.

Examples of on-street cycle facilities



Covered cycle parking with cycle information (Treehugger.com, 2008)



Fix-up station , Cashel Street (CCC, 2013)

Long stay cycle parking

The overall approach is to provide secure cycle parking of a high standard at locations where it is perceived there will be a high demand for long stay facilities. These secure parking facilities will be supported by a centralised 'cycle hub' facility which will provide facilities such as showers, lockers, changing rooms, towels, laundry service, mechanic facilities, DIY tools, cycle shop, full time staff during normal hours and 24 hour access and air conditioning. These will be similar to facilities found overseas. By having a good quality cycle hub facility in a central location, coupled with secure cycle parking locations across the city, it will provide for the needs of cyclists coming from far afield who need to shower and get changed in a central location. The satellite stations would then allow for cyclists who have final destinations relatively close (but not within walking distance) to the cycle hub to cycle the short distance across the city to the nearest secure parking facility to their destination. Here they will be able to feel comfortable about having their bike locked up for a long period.

The long stay demand and potential location of cycle facilities by parking zone are:

Core North

The Core North Precinct would provide an ideal location for the cycle hub facility. A high quality facility in this central location would not only directly serve the Core North precinct with the desired number of long stay cycle parks but would also absorb some of the high demand for long stay cycle parking generated by the northern part of the retail precinct as well as the East Frame. A facility in this area would also be well placed to serve cycling tourists. The rebuild of the Central Library provides a good opportunity to incorporate a cycle hub facility.

The estimated demand for this facility would be approximately 200 spaces for long stay users. Approximately 100 short stay spaces may also be included to accommodate a high demand for short stay parking. Although this facility is not proposed to be the largest in the Central City (in terms of parking provision) it is envisaged it will have the role of being the city's cycle hub.

Bus Interchange

The land use surrounding the Bus Interchange is predominantly retail. This has traditionally provided short stay cycle parks for customers rather than secure facilities for staff. This means that it is unlikely that long stay cycle parking facilities will be provided as part of these developments. It is likely the majority of the long stay demand will be provided in a single facility.

The Bus Interchange is likely to serve the cycle parking needs of the southern part of the Retail, South Frame and Innovation Precincts, and of course the people with bicycles using the bus network. The facility at the interchange should be secure.

30 Christchurch Central Parking Plan The demand for cycle parks within this area is estimated to be 600 spaces by 2041. The Bus Interchange is under construction and it is unrealistic to expect this development to cater for the total 2041 cycle parking demand. The Bus Interchange will initially open with 100 cycle parks. It is estimated that an additional 300 secure long stay cycle parks should be provided in this area to meet the medium term demand in 2026. It is important the Bus Interchange's design is flexible, ensuring the space can be expanded for additional cycle parking in the future. Ideally this should be part of any leasing contracts for businesses in the Interchange.

There would also be a need to cater for a small number of short stay cycle parks. It is suggested that 293 short stay cycle parks would be required in the retail precinct. It is likely that the cycle stands positioned in functional locations dotted around the Retail Precinct would be better suited to meet the majority of this demand although some short stay cycle parking will be required at the Bus Interchange.

Museum/Civic

The Museum and Civic Precincts are relatively small therefore a facility located in either the Museum or Civic Precinct would serve both locations. There may be opportunities for this facility to be shared with an off-street parking building in this area. The estimated demand for long stay cycle parking in these precincts would be 268 spaces. Office developments in these Precincts should provide some staff cycle parking, therefore a lower level of long stay cycle parking will be needed to meet the demand. An estimated long term figure would be approximately 150 cycle parks.

Metro Sports/Health

The proximity of the Metro Sports and Health Precincts means it is possible to look at cycle parking demands for both these facilities at the same time. The majority of the cycle parking demand in the health precinct will be generated by the hospital. It is likely that the hospital will provide adequate long stay cycle parking for its staff. However there will also be ancillary businesses located in the Health Precinct and the need to cater for long stay visitors to the Health Precinct. An obvious location for a long term cycle parking facility would be the new Metro Sports Centre as this would allow for the potential of combining the showering and locker facilities which will already form part of the Metro Sports development.

Taking into consideration that the hospital will provide long stay cycle parking for its staff, it is estimated a long stay cycle parking facility at the Metro Sports Facility should provide approximately 200 to 300 spaces to meet the 2041 demand. To meet demand in 2026, 100 long stay cycle spaces should be provided (depending on the provision which the hospital provides). It is predicted there will be a high demand for short stay cycle parking at the Metro Sports Centre. This should also be catered for as part of the Metro Sports development.

Stadium/ City East/CPIT

The nature of the stadium development offers potential to provide secure cycle parking to meet the demands of the stadium as well as a proportion of the City East and CPIT precincts. It is likely the stadium development will not be fully utilised unless there is an event taking place, which will usually occur outside normal working hours. The site therefore offers a good opportunity to provide secure cycle parking facilities which could cater for the surrounding areas during working hours whilst also providing cycle parking at the stadium during events.

CPIT does provide cycle parking for some of its staff and students. However, there are other businesses located in this area which may not be adequately catered for. There may be an opportunity to negotiate with CPIT to allow its secure cycle parking to be used for general public use. If this option is taken forward then it would negate the need for secure cycle parking on the south east corner of the stadium development. The City East precinct has two predominant land uses, residential developments which are located towards the north and small business units located towards the south. Residential developments should provide for secure cycle parking provision. The cycle parking provided towards the north east corner of the stadium development would cater for any business requirements.

It is recommended that the stadium should provide for approximately 50 – 100 long stay cycle parking spaces. Ideally these should be split between the north east and south east corners of the site in order to accommodate the CPIT precinct and the City East Precinct. This level of provision would also serve the stadium during events.

City South

The nature of developments in the City South Precinct (retail/ small businesses) means it is unlikely that secure cycle parking will be provided by individual businesses. A secure facility would therefore provide for this Precinct, preferably in a central or slightly eastern location (some demand to the west of the Precinct will be accommodated by the Metro Sports). The estimated long term demand in the precinct is 200 spaces. However, Metro Sports will accommodate some of this, therefore a secure facility with lockers should be provided for approximately 150 long stay cycle spaces. Figures indicate there is a high demand for short stay parks in this area.

Victoria/ Kilmore/ City North

It is estimated there will be long stay demand for 300 cycle spaces in the Victoria/Kilmore/City North Precincts. The majority of this area, particularly City North and Victoria Street, is likely to be retail and smaller scale businesses and these are unlikely to provide long stay cycle parks. There is the highest demand for cycle parking in Kilmore Street. It is envisaged a single facility will be adequate to serve these areas.

The City North East precinct has not been considered for cycle parking as this area will predominantly be residential development. According to the District Plan, residential developments should provide cycle parking. The City West precinct has not been considered as there is very little demand for cycle parking in this area.



Figure B.1 The types of facilities and potential locations to accommodate the long term cycle parking demand.