ENVIRONMENT AND INFRASTRUCTURE COMMITTEE AGENDA

THURSDAY 4 APRIL 2013

AT 9AM

IN COMMITTEE ROOM 1, SECOND FLOOR, CIVIC OFFICES, 53 HEREFORD STREET

Committee: Councillor Claudia Reid (Chair)
Councillors Sally Buck, Jimmy Chen, Barry Corbett, Aaron Keown, and Sue Wells

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PART A - MATTERS REQUIRING A COUNCIL DECISION
PART B - REPORTS FOR INFORMATION
PART C - DELEGATED DECISIONS

INDEX

ENVIRONMENT AND INFRASTRUCTURE COMMITTEE 4. 4. 2013

1. APOLOGIES

Nil.

2. DEPUTATIONS BY APPOINTMENT

Nil.

3. BRIEFINGS

3.1 CYCLE DESIGN GUIDELINES

Ruth Foxon, Policy Planner – Transport, will be in attendance to update the Committee on the Cycle Design Guidelines.

4. COMMITTEE REPORT ON CYCLE DESIGN GUIDELINES

General Manager responsible:	General Manager Strategy and Planning, DDI 941-8281
Officer responsible:	Unit Manager, Transport and Research, Strategy and Planning Group
Author:	Ruth Foxon, Policy Planner – Transport, Transport team, Strategy and Planning Group

PURPOSE OF REPORT

1. This report seeks the Environment and Infrastructure Committee's recommendation to the Council to approve the Cycle Design Guidelines (**Attachment 1**).

EXECUTIVE SUMMARY

2. The Cycle Design Guidelines (the Guidelines) are a non statutory document to influence both the design of new cycle facilities in Christchurch and future reviews of the engineering standards in the *Infrastructure Design Standards,* the SCIRT *Infrastructure Recovery Technical Standards* and the *City Plan*.

3. The Guidelines are the first action to be implemented from the *Christchurch Transport Strategic Plan*. At a Council Meeting on 12 July 2012 the Council resolved to: *Ask staff to work with the Environment and Infrastructure Committee to develop Christchurch specific cycle design guidelines.*

4. The *Christchurch Transport Strategic Plan* (2012) recognises that investment in safe cycling is a priority for the city. It proposes the development of an extensive network of cycleways, along with supporting programmes to encourage Cantabrians to cycle as part of their every day travel and activities. In line with the *Christchurch Transport Strategic Plan* and Central Christchurch Recovery Plan, these Guidelines have been developed to shape the design of new cycle facilities in Christchurch.

5. Whilst all streets need to cater for cycling, these guidelines focus on streets that are part of the *Christchurch Transport Strategic Plan's* future cycle network. The aim is that the streets on the cycle network will provide a high level of safety and comfort for those cycling as well as catering for all cycling abilities and users by providing three different types of cycle friendly facilities: major, local and recreational cycleways.

6. The Guidelines outline the design principles and design concepts that will lead the implementation of the future cycle network. The design principles represent best practice and provide a starting point for all future designs. They are intended to inform designers on the appropriate type of cycle facility in different street environments, which will attract new people to cycle. In order to ensure that the guidelines are an easy to navigate reference document, each of the four main sections (major, local and recreational cycleways and parking facilities) have been designed to be independent of one another. This approach will make it easier to use the document, with all of the relevant information for a particular cycleway type or facility being found within a single section.

7. The guidelines will improve consistency in the design and implementation of new cycle facilities in Christchurch. The detailed design of each cycleway may change based on the local environment and context. The Guidelines are not intended to be detailed technical engineering standards or provide details on where cycleways will be located. However, the Guidelines will be used to inform a future addendum to the technical engineering standards in the Council's *Infrastructure Design Standards* (June 2010) and the future review of the transport provisions in the *City Plan*.

8. The Guidelines were prepared with the Environment and Infrastructure Committee through two workshops. The first workshop confirmed the scope and content of the Guidelines and the second focused on selecting the preferred design options for each cycleway type, transition facilities and other cycle facilities.

4 Cont'd

9. The guidelines have been developed to follow six main criteria to:

    - deliver the cycling actions within the *Christchurch Transport Strategic Plan*
    - encourage more residents to cycle
    - be specific for the needs of Christchurch
    - be safe, realistic and achievable for Christchurch
    - be based on best practice examples (national and international)
    - adhere to the New Zealand road user rules.

10. Research into cycling policy, cycle guidelines and infrastructure from both New Zealand and overseas was carried out in framing these guidelines. This was done to ensure that Christchurch's cycling network will take advantage of international best practice.

11. Both safety and peer reviews of the guidelines have been completed. Proposals that are new to New Zealand will be trialled and monitored in the Christchurch context in partnership with the New Zealand Transport Agency, before decisions are made on their wider application.

FINANCIAL IMPLICATIONS

12. The Guidelines aim to provide a framework for the future design of cycleways in Christchurch. Approval of the Guidelines is not a commitment to the delivery of any cycle project. Future cycleway projects and associated budgets will be determined through the Three Year Plan, future LTP's and Annual Plans.

Do the Recommendations of this Report Align with 2009-19 LTCCP budgets?

13. Yes, the guidelines will assist in achieving a number of the Community Outcomes under the LTCCP and support the Council's recovery programme for transport infrastructure and cycle projects in the draft Council Three Year Plan.

LEGAL CONSIDERATIONS

14. The Guidelines will assist the Council in carrying out its functions under the Local Government Act 2002. As noted above, adopting the Guidelines does not create an obligation on the Council to deliver any cycle project, or to make specific provision for any projects in the Three Year Plan, or future Long Term Plans.

Have you considered the legal implications of the issue under consideration?

15. Yes. As noted above.

ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS

16. The Cycle Design Guidelines are one of the first actions from the *Christchurch Transport Strategic Plan* which is in line with the City and Community Long-Term Planning and Policy activity in the current LTCCP (2009-19), and the draft Council Three Year Plan.

17. The Guidelines align with the following draft 2013 Community Outcomes:

- **Liveable City:** providing a system that offers transport options to meet the needs of people and businesses; providing people with access to economic, social and cultural activities; promoting an increase in journeys made by foot, cycle and public transport; facilitating streetscapes that enhance the look and function of the city.
- **Healthy Environments**: encouraging environmental enhancement and reduced emissions.
- **Strong Communities**: improving the safety of the transport system and encouraging physical activity through active transport.

4 Cont'd

Do the recommendations of this report support a level of service or project in the 2009-19 LTCCP?

18. The guidelines are part of the implementation of the *Christchurch Transport Strategic Plan* which aligns with the Urban Development Strategy. In the City and Community Long-Term Policy and Planning Activity there is the following performance standard - *Development of policy and plans to implement the Council's components of the Greater Christchurch Urban Development Strategy (UDS) Action Plan* with a level of service to develop a suitable work programme each year.

19. The implementation of the Guidelines will assist in achieving a number of Council outcomes under the LTCCP and Levels of Service within the Streets and Transport activity.

ALIGNMENT WITH STRATEGIES

20. The Guidelines have been developed as a first implementation action and align with the vision of the *Christchurch Transport Strategic Plan*. The Guidelines will also be used to inform the future review of the transport provisions in the *City Plan* to align them to the *Christchurch Transport Strategic Plan*.

Do the recommendations align with the Council's strategies?

21. Yes, see above.

22. Under the Canterbury Earthquake Recovery Act the Council's strategies and plans must not be inconsistent with the Recovery Strategy for Greater Christchurch or any Recovery Plans. The Recovery Strategy includes a specific objective in the Built Environment area to: *'Develop resilient, cost effective, accessible and integrated infrastructure, buildings, housing and transport networks, by: developing a transport system that meets the changed needs of people and businesses and enables accessible, sustainable, affordable and safe travel choices'*. The Guidelines are consistent with this objective.

CONSULTATION FULFILMENT

23. The Guidelines have been developed in collaboration with the Environment and Infrastructure Committee. Two workshops were held with the committee. The first on 6 September 2012 confirmed the scope of the Guidelines. The second on 4 October 2012 focused on cycle facilities and design options which should be considered in the Guidelines.

24. In order to strengthen the comprehensiveness of the Guidelines stakeholders, further contributed to the development of these design options. A workshop on the draft guidelines was held with NZTA, CERA, SCIRT, Sports Canterbury, Spokes, University of Canterbury, Canterbury Public Health, Bike NZ and the Ministry of Awesome on 12 November 2012.

25. To ensure Council staff engagement in the process, a number of project workshops have been held to inform the development of the Guidelines. These have included representatives from urban design, transport planning, transport engineering, safety and signal engineering. An external safety and peer review was undertaken of the draft guidelines.

26. The Guidelines were subsequently drafted (see **Attachment 1**) and are now before the Committee to recommend to the Council for approval. Further to the Council's approval, the document will be designed to a similar presentation format as the *Christchurch Transport Strategic Plan*.

STAFF RECOMMENDATION

It is recommended that the Environment and Infrastructure Committee recommend that the Council approve the Cycle Design Guidelines as in **Attachment 1** to this report.

Christchurch Cycle Design Guidelines

2013

Christchurch City Council

Acknowledgements

We would like to thank the contributions from ViaStrada and other contributors including Glen Koorey, Spokes, NZTA, Canterbury Public Health, Bike NZ and Ministry of Awesome.

Photographs have been supplied by Glen Koorey, ViaStrada David Falconer and Gemma Dioni.

Christchurch City Council

Christchurch Cycle Design Guidelines

2013

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ISBN *goes here*

Foreword

Kia ora koutou

The council has a unique opportunity following the Canterbury earthquakes to make Christchurch a cycle city by developing a safe and connected cycle network.

Mayor Bob Parker and Jo Parker in a bike race along Madras Street Christchurch.

The Christchurch Transport Strategic Plan (2012) recognises that investment in safe cycling is a priority for the city. It proposes the development of an extensive network of cycleways, along with supporting programmes to encourage Cantabrians to cycle as part of their every day travel and activities.

The guiding principle of these guidelines is that we need to consider catering for cycling in every street. Having said that, these guidelines focus on streets that are part of the future cycle network (in the Christchurch Transport Strategic Plan), which will provide the best opportunity to encourage more people to cycle more often.

These guidelines illustrate how new cycleways should look and feel. They include recommended design principles and design concepts of how cycleways can fit into different types of street environments in Christchurch.

I am pleased to be able to take this first step in seeing our ideas come to fruition and working towards placing Christchurch as a premiere cycling city.

Kind regards

Mayor Bob Parker

Contents

1. Introduction

How do we encourage more people to cycle more often?

Research shows that 15 per cent of people regularly cycle, and a further 32 per cent seriously think about cycling[1]. In a nationwide study, potential cyclists strongly stated that they wanted to travel separately from motor vehicles and to be able to cross safely at intersections[2]. Improving the visibility of cycling and providing good cycling facilities is needed to achieve high levels of cycling.

The vision of the Christchurch Transport Strategic Plan is to keep Christchurch moving forward by providing transport choices to connect people and places. To achieve the vision, the Christchurch Transport Strategic Plan makes a strong statement about the importance of cycling in the city as it is rebuilt by creating a connected cycle network to make it easier for residents to cycle. The Accessible City chapter of the Central Christchurch Recovery Plan also promotes enhancements to the quality and connectedness of cycling opportunities in the Central City as one of the key measures crucial to recovery.

The guiding principle of these guidelines is that all streets need to cater for cycling, however the focus is on the routes that are part of the Christchurch Transport Strategic Plan's future cycle network in Figure 1.1.

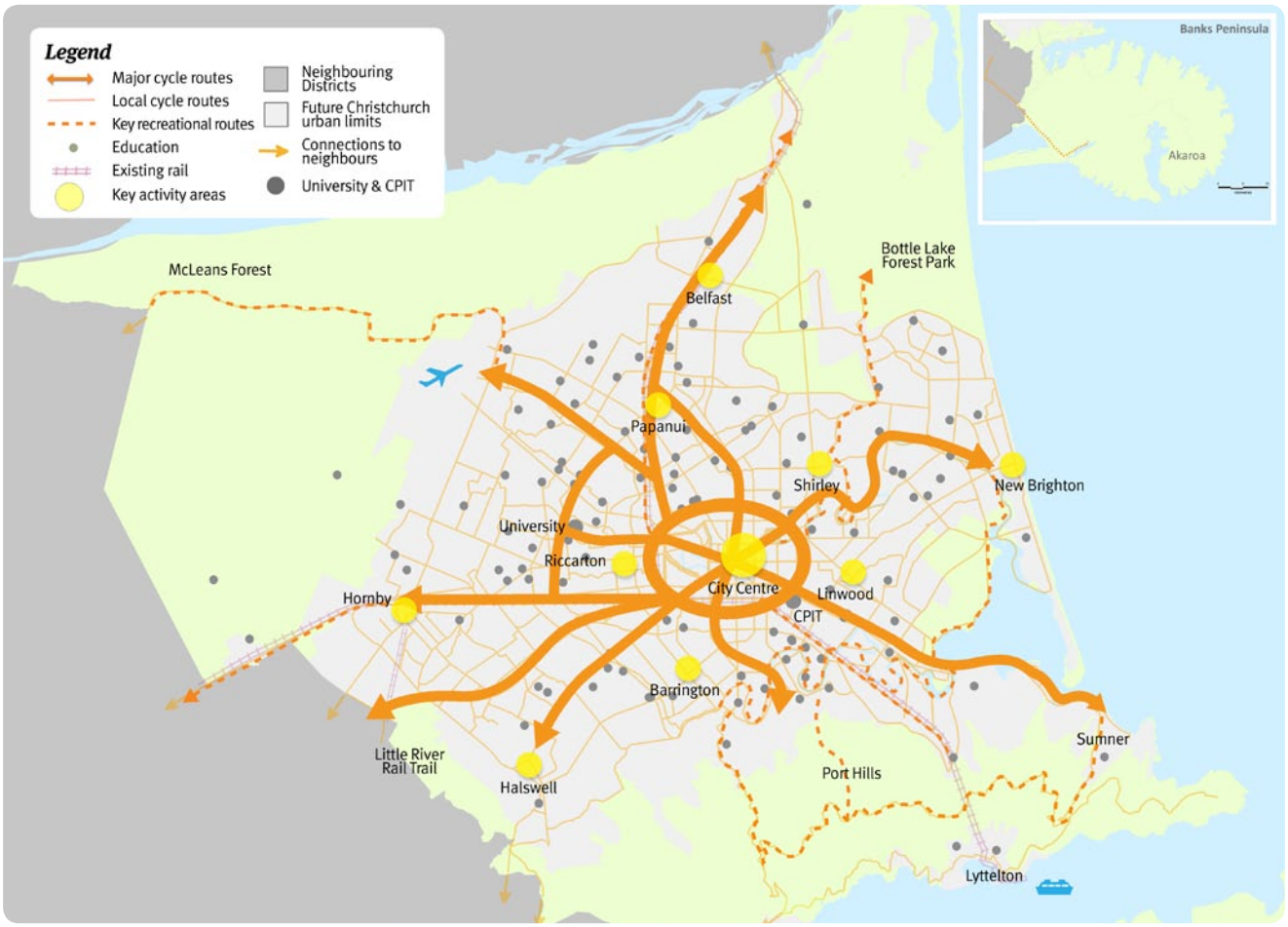


Figure 1.1. Future cycle network: major, local and recreational cycleways (Christchurch Transport Strategic Plan).

[1] *Land Transport New Zealand (2006) Research Report 294: Increasing cycling and walking: an analysis of readiness to change.*

[2] *New Zealand Transport Agency (2011) Research Report 449: Assessment of the type of cycling infrastructure required to attract new cyclists.*

1.1. *Purpose and use of the guidelines*

The purpose of these guidelines is to influence both the design of new cycle facilities in Christchurch and future reviews of the detailed engineering standards in the Infrastructure Design Standards, the SCIRT[3] Infrastructure Recovery Technical Standards and the City Plan.

The guidelines outline the design principles and design concepts that will guide the implementation of the future cycle network outlined in the Christchurch Transport Strategic Plan. The principles represent best practice in cycle design and provide a starting point for all designs. The actual design (detailed design) of each cycleway may change based on the local environment and context. The guidelines are not technical engineering standards, nor do they provide details on where cycleways will be located. However, the guidelines will be used to inform an addendum to technical engineering standards in the City Council's Infrastructure Design Standards (June 2010). The guidelines will also be used to inform the future review of the transport provisions in the City Plan.

These guidelines include recommended widths for some cycleways, although it is acknowledged that it may not always be possible to achieve these. Ultimately a good design takes into account contributing factors, such as who uses the cycleway, safety and the local context of the street. Further details are outlined in section 2 (page 14) of this document.

The guidelines have been developed to follow six main criteria to:

- Deliver the cycling actions within the Christchurch Transport Strategic Plan
- Encourage more residents to cycle
- Be specific for the needs of Christchurch
- Be safe, realistic and achievable for Christchurch
- Be based on best practice examples (national and international)
- Adhere to the New Zealand road user rules.

Encouraging more people to cycle.

Research into cycling policy, cycle guidelines and infrastructure from both New Zealand and overseas was carried out in developing these guidelines. This was done to ensure that Christchurch's cycling network will take advantage of international best practice.

While some of the proposals in this document are aspirational and may be new to New Zealand, these guidelines are realistic and achievable. Experts in urban design, transport planning and engineering, safety and signal engineering all contributed to the development of the guidelines, as have key stakeholders including the New Zealand Transport Agency, Sports Canterbury, Spokes and the Ministry of Awesome.

Because some of the proposals contained within the guidelines are new to New Zealand they will be trialled in the Christchurch context in close cooperation with New Zealand Transport Agency, before any permanent decisions are made on their wider application.

[3] *Stronger Christchurch Infrastructure Rebuild Team*

1.1.1. *How to use this document*

In order to ensure that the guidelines are as user friendly and as easy to navigate as possible each of the four main sections (major, local and recreational cycleways and parking facilities) have been designed to be independent of one another. This approach will make it easier for users to use the document, with all the relevant information for a particular cycleway type or facility being found within a single section.

1.2. *Design context*

The context for each proposed cycleway is integral to developing an appropriate cycleway design. These guidelines establish a set of principles to ensure a consistent design approach for each type of cycleway.

- **Major cycleways** should aim to cater for both adults and children (10 years and over). They should provide safe links to popular destinations and key activity centres and offer the highest level of service to cyclists. Some major cycleways will seek to include 'flagship' elements that will make a strong statement about the city's cycle status and will encourage people to take up cycling.
- **Local cycleways** will improve cycle connectivity across the city, especially to schools and within residential neighbourhoods. Initiatives may include: improving the standard of local cycle lanes and carriageway surfaces, speed and traffic management, introducing shared paths, slow streets and neighbourhood greenways, to improve safety and amenity for cyclists on local streets.
- **Recreational cycleways** will provide safer leisure routes for recreational, family cycling and sport.

They also recognise that flexibility is important in allowing each cycleway design to reflect the environment through which it passes. For the purpose of this document a cycleway is defined as a route which is prioritised for cycling.

One of the first steps in the design of cycle facilities is to understand the design context. This should take into account four key factors: cycleway design objectives; the type of cycleway (major, local and recreational) and corresponding primary cycle users; the spatial environment around the cycleway; and how the cycleway fits within the wider transport system and road user hierarchy (the transport context). In addition, the design should also consider other relevant standards. These are illustrated in Figure 1.2.

Top: Example of a flagship element. Bottom: Safe cyclists are happy cyclists.

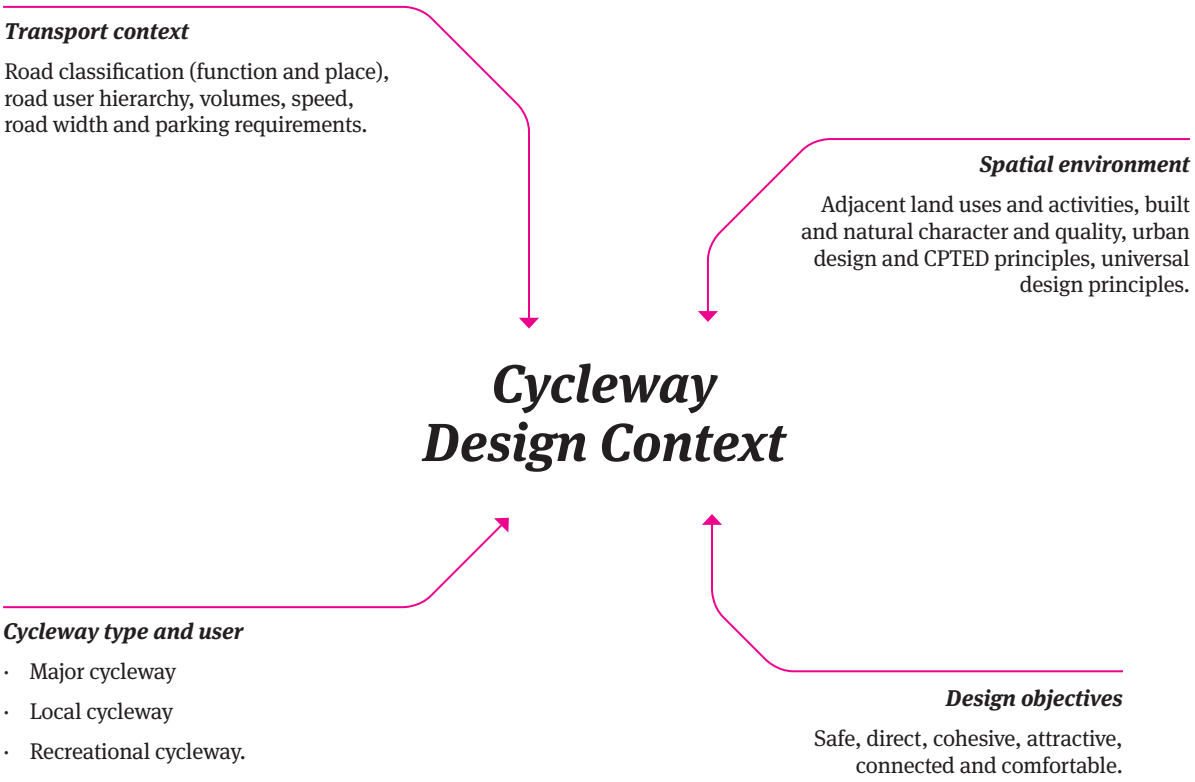


Figure 1.2. Cycleway design context.

1.3. Design objectives

All cycleway designs should provide:

- Safety: cycle routes should be safe and be perceived as safe, provide personal security and limit conflict between cyclists and other users.
- Directness: cycle routes should be direct, based on desire lines and result in few delays door to door. Cycle parking facilities should be in convenient locations.
- Coherence and connectivity: cycle routes should be continuous and recognisable, link all potential origins and destinations and offer a consistent standard of protection throughout.
- Attractiveness: cycle routes should integrate with and complement their surroundings, enhance public security, look attractive and contribute positively to a pleasant cycling experience.
- Comfort: cycle routes should be smooth, non-slip, well maintained and free of debris, have gentle slopes and be designed to avoid complicated manoeuvres[4].

1.4. Spatial environment

Designs need to consider the streetscape and street character. This is made up of the legal road and the land use next to the road including buildings, local activities (eg: schools and parks), property access and landscaping.

To achieve high quality cycleway designs a number of additional principles need to be considered: the New Zealand Urban Design Protocol design qualities (the 7 'C's) Crime Prevention through Environmental Design (CPTED) and mobility access. The principles are wide ranging but include achieving high levels of cycleway safety by making them direct and with good sightlines, consideration of vulnerable users (including those people with mobility impairments), using materials that reflect the character of the local environment and ensuring that the cycleway has a high level of accessibility to both cyclists and those encountering or crossing the cycleway.

[4] *Land Transport NZ (2005) Cycle Network and Route Planning Guide*

The width of cycleways will depend on the expected number of users, the environment and other streetscape elements. Another factor to be considered in any width investigation is the growing numbers of cargo and electric bicycles.

These guidelines give example design concepts using the typical 20 metre road widths in Christchurch, while also recognising that designs need to be flexible enough to accommodate the space constraints imposed by narrower local streets or wider arterial roads. A balance is required to accommodate the desirable area for all streetscape elements within the road corridor width.

The following elements are important to all designs:

- Cycle, pedestrian, traffic and public transport movement (including the needs of mobility impaired)
- Property access
- Parking
- Street trees and garden planting
- Places to stop and interact with the environment.

Other spatial elements which also need to be considered are:

- Cycle and pedestrian crossings
- Intersections
- Driveways or entry and exit points to properties
- Bus stops
- Street lighting
- Paving and surface materials
- Wayfinding (signs and markings)
- Landscaping, street furniture or artwork
- Fencing
- Storm water drainage
- Maintenance and refurbishment.

Generally wider cycleways are needed for safety reasons in areas with:

- Major cycleways and/or
- High cycle volumes and speeds and/or
- High pedestrian volumes or areas where pedestrians stop on the path and/or
- High vehicle volumes and speeds and/or
- High recreational cycling use.

All new streets, or any street undergoing improvement, need to try and achieve the recommended cycleway widths. The calculation of cycleway widths excludes the additional space needed for drainage (guttering or kerb and channel). On existing streets there is often limited width available for cycleways. Therefore a reallocation of road space may be required. Space can be allocated to a cycleway by reallocating existing space such as moving on-street car parking to an alternative location, using berm widths for cycleways, and/or reducing the width of traffic lanes or footpaths. It is not ideal to have each element of the streetscape at minimum width for significant distances. If this is likely in an emerging design then another route for the cycleway needs to be investigated.

Top: Example of street trees and plantings.
Bottom: Example of a shared cycle and pedestrian path.

1.4.1. *Wayfinding, signs and markings*

Good cycle signs and markings (independent to road signs) need to identify cycle lanes for both visiting and local cyclists. Signs and markings need to be an integral part of all cycleway designs.

Signs inform road and pathway users about destinations, routes, street and suburb names, distances and other useful information. Signs or markings should help direct cyclists to key destinations around the city with short, clear messages or maps.

It is intended that a separate wayfinding plan will be developed to support this document.

Example signage.

1.5. *Transport context*

On major cycleways, the priority needs to be providing space for cycling and as a result alternative routes may need to be provided for other road users.

This principle is supported by the Christchurch Transport Strategic Plan which promotes the use of a road user hierarchy (prioritising different road users on different routes). On some routes cycling has priority and on others motor vehicles or public transport might have priority. This approach acknowledges that it is not always possible to achieve desirable widths for all road users on one road.

When preparing a cycleway design, consideration of the transport context is important. This includes the classification of the street, how it functions, which user has priority, and the places the street passes through.

Figure 1.3 identifies which cycleway designs are likely to be suitable for different street environments and provides a reference to the relevant section in these guidelines. This links with the new road classification outlined in the Christchurch Transport Strategic Plan. The new road classification follows the 'link and place' philosophy. 'Link and place' acknowledges that streets have combined uses of both being transport corridors as well as places for people to shop, live and work. The development of the new road classification will also be promulgated into the review of the Infrastructure Design Standards.

In addition the Accessible City chapter of the Christchurch Central Recovery Plan includes more information about providing for cyclists in the Central City.

1.5.1. *Relevant standards, documents and good practice review*

There are a range of strategic plans, local standards and national standards which have influenced these guidelines. These include:

Cycle Planning

- Christchurch Transport Strategic Plan (2012) Christchurch City Council
- Christchurch Central Recovery Plan – An Accessible City – (2013) CERA

Design Standards – Christchurch City Council

- Infrastructure Design Standards (2010)
- Construction Standard Specifications (2002 and amendments 2012)
- Lane Design Guide (2007)

New Zealand Standards

- Traffic Control Devices Manual – NZTA
- New Zealand Road User Rules
- Land development and subdivision engineering (2010) NZS 4404
- New Zealand supplement to the Austroads guide to traffic engineering practice part 14: Bicycle: NZTA

		Link and place type – new road classification[5]						
		Routes	Routes	Street	Streets	Streets	Streets	Ways
Cycleway type	Cycle design concept	All place types	Rural	Urban commercial centres/CBD	Urban residential	Urban business / Industrial	Rural / Semi-rural	All place types
Major cycleways	Shared paths		Section 2.1.1					Section 2.1.1
	Neighbourhood greenway				Section 2.3.1			
	Slow streets			Section 2.2.5	Section 2.3.1			
	Separated cycle path	Section 2.2.1	Section 2.4.1	Section 2.2.1		Section 2.4.1		
	Intersections	Section 2.5		Section 2.5	Section 2.5	Section 2.5		
	Crossing treatments	Section 2.7.1		Section 2.7.2		Section 2.7.2		Section 2.7
	Bus stops	Section 2.6		Section 2.6	Section 2.6	Section 2.6		
	Transitional			Section 2.8	Section 2.8	Section 2.8		
Local cycleways	Off-road shared paths			Section 3.1.1	Section 3.1.1			Section 3.1.1
	Shared paths				Section 3.3.3			
	Neighbourhood greenway				Section 3.3.1	Section 3.3.1	Section 3.3.1	Section 3.3.1
	Slow streets			Section 3.2.2	Section 3.3.1	Section 3.3.1	Section 3.3.1	
	Cycle lanes	Section 3.4		Section 3.2.3 3.4	Section 3.3.2	Section 3.2.3 3.3.2 3.4	Section 3.4	
	Intersections	Section 3.5	Section 3.5	Section 3.5	Section 3.5	Section 3.5	Section 3.5	
	Bus lanes	Section 3.6		Section 3.6		Section 3.6		
Recreation cycleways	Off-road leisure route		Section 4.1		Section 4.1		Section 4.1	Section 4.1
	On-road sport route	Section 4.2			Section 4.2	Section 4.2	Section 4.2	Section 4.2

Figure 1.3. Cycleway design by street environment

[5] *New road classification in Christchurch Transport Strategic Plan*

2. Major cycleways

2. Major cycleways

Major cycleways need to be designed for all cycle users (aged ten years and over) offering a safe, enjoyable experience that will encourage more people to cycle more often. The proposed routes for the major cycleways are illustrated in Figure 2.1. The exact alignment (which roads they take) of these will be investigated further at the detailed design stage.

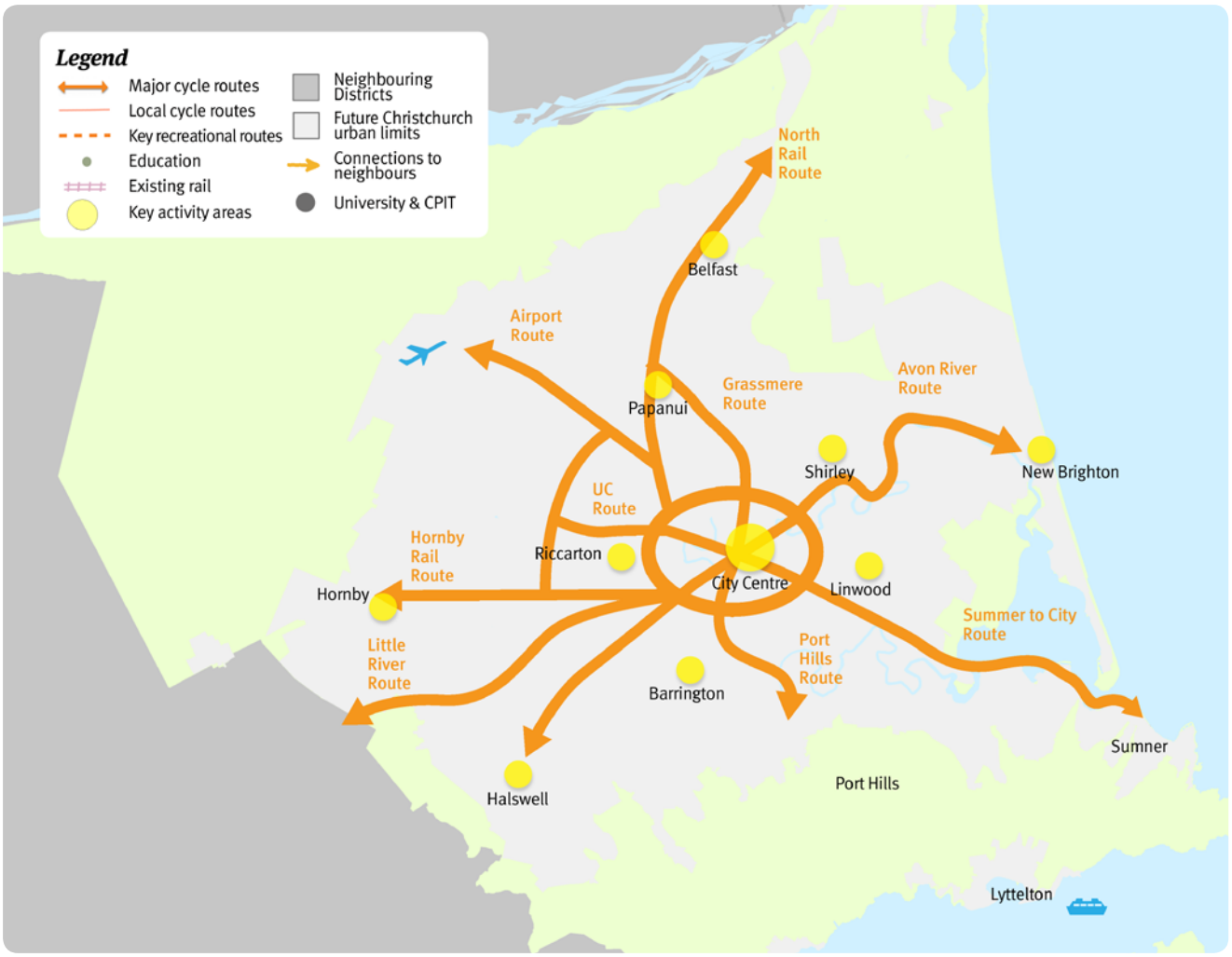


Figure 2.1. Future major cycleways (Christchurch Transport Strategic Plan)

The treatment of major cycleways (such as shared paths, separated cycle paths, neighbourhood greenways or slow streets) will change along the route as the cycleways pass through different environments. Electronic cycle counters should be incorporated on all major cycleways to monitor bicycle volumes and improve data. This section outlines the major cycleway design concepts and principles for each environment it encounters:

1. Parks, reserves and waterways
2. Urban commercial centres
3. Residential streets
4. Arterial roads and distributor streets (routes)
5. Intersections
6. Bus stops
7. Crossings busy roads.

2.1. *Major cycleways through parks, reserves and waterways*

Major cycleways in parks, coastal edge, greenspace, rail and river corridors are ideally wide, sealed, shared paths with some separation from pedestrians when located on high volume pedestrian or cycle routes. This design offers direct and highly visible connections, while providing a safe, high amenity environment.

2.1.1. *Major cycleways/Parks, reserves and waterways/ Shared paths: Design principles*

- Be sensitive to the park setting and character of the path.
- Wider shared paths are safer and therefore major cycleways need to be as wide as possible. Additionally they need to cater for current and future cycle and pedestrian peak-time volumes.
- Where shared paths have higher volumes ideally there needs to be separation of pedestrians and cyclists. Separation can be achieved by a landscaped area or contrasting surface texture separating the cycle and pedestrian paths. When considering the appropriate treatment relating to volumes, path widths and separation then 'Vic Roads (2012) Cycle Note 21' should be referred. This provides further guidance on undertaking a path capacity and safety width assessment.
- The shared path should be wide and strong (construction depth) enough to allow service vehicles access for maintenance.
- Either side of the shared path should be clear of obstacles to allow for overtaking and to minimise the impact of any cycling errors especially at times of high use (approximately one meter either side of the path). This extra space can be provided by using more permeable surfaces at the edges such as turf cells.
- The design of the shared path should be appropriate to the expected speed of cyclists using the path (approximately 15 km/hr for expected users). Consideration to sight lines, signs, markings, path alignment and gradients is important.
- Surface types need to be smooth while retaining traction. Smooth sealed paths (using universal building materials such as asphalt or aggregate concrete) are preferred.
- The design should create awareness of other path users by providing good on-path markings (such as aluminium role markings) with messages to indicate the presence of both pedestrians and cyclists. Surface texture treatments can also be used to raise awareness of other users and encourage more considerate use of shared paths. For further guidance on conflict minimisation then 'Austroads (2006) Research Report: Pedestrian and cyclist conflict minimisation on shared paths' should be referred to.
- Consideration of Crime Prevention Through Environmental Design (CPTED) principles and ensure accessibility for all users (including suitability for young cyclists, visibility for hand cycles and older people) is important. A non-motorised user audit should be undertaken.
- The needs of mobility and visually impaired users needs to be considered in all designs.
- Where paths are located close to water, over water or along banks extra safety considerations need to be taken into account. For appropriate treatments designers should refer to the 'Austroads Guide to Road Design – Part 6A – Pedestrian and Cyclist Paths, Sections 7.7.1 and 7.7.2'.

From top to bottom: Example of a texture separated pathway, landscape separation and on-path markings.

Design concept
(Major cycleways – Parks, reserves and waterways)

2.2. *Major cycleways through urban commercial centres*

In commercial centres major cycleways are ideally separated cycle paths which offer an attractive and more comfortable environment for cycling. The design should allow for both free-flowing pedestrian movement and easy access for cycling to and through the centre. As commercial centres present many hazards and distractions for users, separated cycle paths help reduce the hazard.

Separated cycle paths can take a variety of forms depending on the individual centre's context. The preferred form of separation is the style of facility found in Copenhagen, which is discussed in more detail in section 2.2.2. Where this is not appropriate other options are kerbed, planter or painted separation (discussed in sections 2.2.3 and 2.2.4). In some commercial centres creating a slow speed (shared) environment can reduce the need for separation (discussed in section 2.2.5).

2.2.1. *Major cycleways/Urban commercial centres/ Separated cycle paths: Design principles*

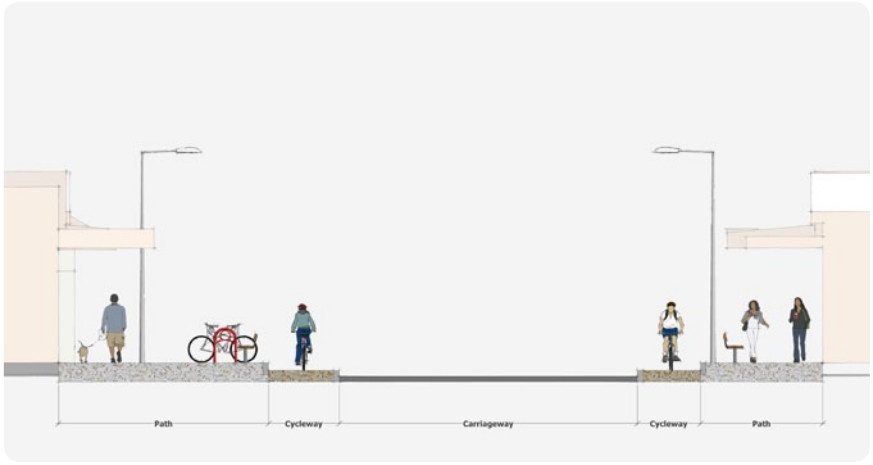
These design principles apply to all forms of separated cycle paths: Copenhagen, kerbed, planter and painted separation.

- In commercial centres pedestrians need to have the highest priority. Designs may be combined with other streetscape elements to create a slow speed environment which improves both pedestrian and cycle connectivity and safety.
- Separated cycle paths ideally need to be located between the footpath and traffic lane providing separation between the two different road users. Where the cycle path is located next to on-street car parking, a separation strip can be included to protect the cyclists from car doors opening.
- The design of the separated cycle path needs to be integrated as much as possible into the commercial centre so that the cycle infrastructure becomes part of the character of the centre rather than a through route. In commercial centres with distinctive character, the separated cycle path should reflect the unique character of the environment. An example of this may be to use alternative textures to improve visibility other than green surfacing.
- At T-intersections the separated cycle path needs to cross the side road on the carriageway to give through cyclists right of way over the intersection. Signs may be needed to emphasise who has priority.
- At main pedestrian crossings, platforms raised to footpath level indicate that pedestrians have priority at the crossing. The cycle path needs to cross over the platform using shallow gradient ramps.
- Coloured surface treatments increase the visibility of the separated cycle path at conflict points. In Christchurch the preferred colour is green.
- Mobility parking spaces could be incorporated into the design by introducing in-kerb ramp access from the parking space to the footpath.
- Designs could consider including cycle friendly features, such as hand and/or foot rails at stopping locations along the route.
- Separated cycle paths on either side of driveways or intersections need to be kept clear of obstructions (including parked cars) and provide a good visibility splay to improve inter-visibility.
- Separated cycle paths ideally need to be kept away from solid boundary fences to improve inter-visibility between path users and exiting vehicles. This is very important for vehicles reversing out of a driveway as the driver cannot see the path users. Permeable or open fences can improve visibility further.
- Designs should consider the network, safety and landscape implications where kerbs are moved to create separated cycle paths.

2.2.2. *Major cycleways/Urban commercial centres/ Copenhagen separated cycle paths: Design principles*

In addition to the design principles for separated cycle paths, Copenhagen designs also need to consider the following principles.

- Copenhagen style cycle paths have kerbs that separate the cycle path from both the traffic lane and the footpath. The footpath kerb height is smaller (approximately 20mm) than the traffic kerb.
- Copenhagen cycle paths ideally need to be wide enough for cyclists to pass one another (a desirable width of 2.4m on both sides of the road).
- A Copenhagen cycle path should have a limited number of vehicle crossing points along the street frontage. The number of driveways or entrances needs to be assessed and where there are multiple crossings which cannot be removed or adapted then another separation type (kerbed or painted) is recommended.
- Copenhagen cycle paths often need more space than other forms of separation. Therefore they are most successful where there is no on-street car parking or where car parking is only on one side of the street. The re-allocation of car parking and detailed design of any scheme design should seek community engagement and consultation.
- Where there is on-street car parking there should also be a separation strip (0.6 – 1m) between the parking and the cycle path. This offers the cyclist protection from car doors being opened. This separation may be textured (materials such as cobbles) to encourage cyclists to keep in the cycle path and not ride in the 'door zone' on the separation strip. Parking meters may also be accommodated in the separation strip if there is sufficient room.



Design concept major cycleways - urban commercial copenhagen cycle path cross section.

- The cycle path has a continuous grade over entrances and driveways to increase the inter-visibility of approaching cyclists.
- At T-intersections the cycle path crosses the side road on the carriageway to give cyclists right of way over the intersection. Signs may be needed to emphasise who has priority.
- In the lead up to and where the cycle path crosses an intersection a change in texture or green surfacing is desirable to increases the visibility of a potential conflict point.
- A mountable kerb or ramp provides easy access to cycle parking or information points where these are located on the footpath.
- Cycle path construction is strong enough to accommodate service vehicles or rubbish trucks on the cycle path.

Design concept
(Major cycleway – Urban commercial centre – Copenhagen separated cycle path)

Design concept
(Major cycleway – Urban commercial centre – Copenhagen separated cycle path)

2.2.3. *Major cycleways/Urban commercial centres/Kerb separated cycle paths: Design principles*

In addition to the design principles for separated cycle paths, kerb separated designs also need to consider the following principles.

- Kerb separated cycle paths are located on the carriageway with a kerb buffer (0.6 to 1m) to separate the cycle path from the traffic lane or on-street car parking.
- The separated cycle path ideally needs to be wide enough for cyclist to pass one another (approximately 2.4m on both sides of the road).
- The cycle path is located on the carriageway to give through cyclists priority at T-intersections.
- Intermittent gaps placed in the kerb separation allow cyclists to make right hand turns, allows pedestrians to cross and facilitates drainage.
- To enhance the streetscape of the centre, plants or trees can be included in the kerbed separation. Where there is on-street parking, planting should be placed so it does not prevent cars doors opening or obstruct visibility. Trees are preferable to plants where there is adequate width in the kerbed separation for roots and good visibility. Designs should refer to Tree Planning in Streets Policy (Christchurch City Council).
- A mountable kerb or ramp provides easy access to cycle parking or information points where these are located on the footpath.

Example of a kerb separated cycle path.

Design concept
(Major cycleways – Urban commercial centres/Kerb separated cycle paths)

2.2.4. *Major cycleways/Urban commercial centres/Painted separated cycleways: Design principles*

Copenhagen style or kerb separation is preferable to painted separation because it offers a higher level of protection for the cyclist from other vehicles. Painted separation, however, provides a good lower cost, retro-fit option. In addition to the design principles for separated cycle paths, painted separated designs also need to include the following principles.

- Painted separated cycle paths need to be located on the carriageway with a painted chevron (a saw-toothed painted section of around 0.6 to 1m) to separate the cycle path from the traffic lane or on-street car parking (the cycle lane will be located between the kerb and any on-street parking).
- The cycle path ideally needs to be wide enough for cyclists to pass one another (approximately 1.8m to 2m on both sides of the road).
- The cycle path needs to be part of the main thoroughfare to give through cyclists priority at T-intersections.
- Vertical edge markers, planters or sculpture could be considered in the painted separation to make it more visible, encourage vehicles to stay off it and improve safety on the cycle path. Where there is on-street parking, any physical features must be placed so they do not prevent car doors opening.
- A mountable kerb or ramp could be included to provide easy access to cycle parking or information points where these are located on the footpath.

Example of a painted separated cycle path in Melbourne.

Design concept
(Major cycleways – Urban commercial centres – Painted separated cycleways)

2.2.5. *Major cycleways/Urban commercial centres/Slow streets: Design principles*

Slow, shared streets with enhanced landscapes in commercial centres can support economic vitality as well as provide safe cycle and walking connections without the need for separation. Slow streets are most appropriate in the Central City or in some suburban centres. The design principles are:

- Slow streets often have low traffic speeds and volumes. They may often be single-lane two-way streets where cyclists (and pedestrians) can easily and safely mix with slower traffic.
- Slow streets should encourage walking, cycling and active shop frontages such as cafes and seating areas. The designs may seek to discourage unnecessary through-traffic to improve the safety and comfort of walking and cycling.
- Narrow roads, reduced sightlines and activities near the carriageway edge could be used to help reduce the speed and volume of vehicles using the slow street.
- Designs should reflect the local character of the street and building frontages.
- A high standard of design and quality features in its landscaping, surface treatment, street furniture and lighting are recommended.

Design concept
(Major cycleways – Urban commercial centres – Slow streets)

2.3. *Major cycleways through residential streets*

In urban residential streets, major cycleways will ideally be neighbourhood greenways which create a slow, safe environment where bicycles, vehicles and people can comfortably mix. The quality of the environment and amenity of the residential street is also enhanced through this design.

2.3.1. *Major cycleways/Residential streets/Neighbourhood greenways: Design principles*

Neighbourhood greenways are a form of street treatment where simple measures such as lower speeds, traffic restraints, wayfinding, crossing treatments and landscaping are used to create an environment that is friendly for walking and cycling. They need to be considered on routes which connect people to community facilities such as schools, parks, shops and other key destinations in a neighbourhood[6]. Designs need to consider the following principles:

- Neighbourhood greenways are ideally suited to slow speed and low volume residential streets.
- Cyclists and pedestrians will be given a higher priority in designs than other traffic, so that cyclists can comfortably share the full carriageway of the street.
- The design and appearance of the street is designed to encourage low traffic speeds (less than 30km/h) and low volumes, maximising safety for cyclists and pedestrians.
- Neighbourhood greenways can feature a range of different street treatments including: street entrance or exit restrictions; median islands at intersections with cycle gaps to prevent vehicles from continuing along the neighbourhood greenway; mid-block or street-end closures for vehicles with by-passes for cycling; diagonal diverters at intersections to prevent through traffic; contra-flow cycle lanes; lower speed limits; and other traffic calming measures (eg: raised platforms, narrow lanes, or chicanes with cycling bypasses etc).
- Clear signs or markings on the street are important to make wayfinding easier.
- Neighbourhood greenways ideally have priority at intersections so that they are well connected and are easy for cyclists and pedestrians to navigate. Where priority is not possible the route should be clearly marked to make sure cyclists can find their way.
- In some neighbourhood greenway designs, there may be reduced access to the street or reduced on-street car parking for landscaping. Each design will need to consider access and parking early in the scheme and where appropriate consult the community.
- Where neighbourhood greenways restrict vehicle numbers and flow, the network impact on the surrounding areas needs to be considered. Temporary road changes can be used to test the impact of re-routed vehicles and assist to move towards more permanent traffic calming.
- In new subdivisions a narrow residential street design can naturally slow the traffic.
- Vertical elements (trees or street furniture) can provide visual enclosure to the street reducing sight lines and therefore speed.
- Emergency vehicles still need access to the street so the design needs to include left in/ left out access or removable bollards.
- On busier residential streets, where it is not possible for volumes or speeds to be reduced, separated cycle paths, cycle lanes, shared paths or cycleways on the berm could be provided. See section 2.2.1 and 2.2.3 for further guidance on separated cycle paths.

Top: Example of a neighbourhood greenway crossing. Middle and bottom: Example of diverters for cycles and pedestrians only (Vancouver).

[6] *Koorey (2011) Neighbourhood Greenways: Invisible Infrastructure For Walking And Cycling*

Design concept
(Major cycleways – Residential streets – Neighbourhood greenways)

2.4. *Major cycleways through arterial roads and distributor streets*

On arterial roads and distributor streets there is often a greater priority on traffic movement which can discourage cycling by all but the most experienced. Major cycleways in these environments are ideally separated cycle paths to create an environment where all road users feel safe and more comfortable to cycle.

2.4.1. *Major cycleways/Arterial roads/Separated cycle path: Design principles*

- Separated cycle paths ideally need to be located at the carriageway level between the footpath and traffic lane. They should provide separation (0.6-1m) from the traffic and pedestrian movement by kerbs or painted separation (similar to section 2.2.1).
- The separated cycle path ideally needs to be wide enough for cyclists to pass one another, make corrective manoeuvres and allow for growth in demand (approximately 2.4m on both sides of the road).
- Where the cycle path is next to on-street car parking, an extra separation strip needs to be included to protect cyclists from car doors opening.
- The design should consider putting planting, landscaping or artworks in the separation strip to enhance the streetscape.
- Coloured surface treatments can be used to increase the visibility of the separated cycle path at conflict points. In Christchurch the preferred colour is green.
- Separated cycle paths on either side of driveways or intersections need to be kept clear of obstructions (including parked cars) and provide a good visibility splay to improve inter-visibility.
- Intermittent gaps placed in the kerb separation allow cyclists to make right hand turns, pedestrians to cross and facilitates drainage.
- At main pedestrian crossings, platforms raised to footpath level indicate that pedestrians have priority at the crossing. The cycle path should cross over the platform using shallow gradient ramps.
- Separated cycle paths ideally need to be kept away from solid boundary fences to improve inter-visibility between path users and exiting vehicles. This is very important for vehicles reversing out of a driveway as the driver cannot see the path users. Permeable or open fences can improve visibility further.

Example of a kerb separated cycle path.

Design concept
(Major cycleway – Arterial roads – Separated cycle path)

2.5. *Major cycleways through intersections*

Controlled intersections and T-intersections are challenging for cyclists. Major cycleways that cross these intersections need to be designed to protect the cyclist and provide a greater level of comfort. Where possible, roundabouts should be avoided. A Dutch intersection or a cycle Barnes dance offer the highest level of protection and comfort at intersections. However these designs are a new concept in New Zealand and will need to be trialled before wider use.

In the meantime, other intersection treatments such as protected cycle lanes provide a level of increased safety and comfort for cyclists.

2.5.1. *Major cycleways/ Intersections/Dutch intersection: Design principles*

The Dutch intersection is a new approach to intersection design in Christchurch and potentially offers the highest level of protection to cyclists. The design principles are:

- Dutch intersection designs are appropriate where separated cycle paths approach an intersection. The design features corner islands to provide separation between cyclists and vehicles at the intersection. This separation also improves inter-visibility between drivers and cyclists. The pedestrian crossing facilities and signals are separate from the cycle path.
- The size of the corner island is variable depending on the size and angles of the intersection (corner splay). The corner islands size can help to slow turning vehicles which also improves safety for both cyclists and pedestrians.
- The design of the intersection needs to consider left turning vehicles. To allow larger vehicles to turn safely, the stop line for the entry lane may need to be set back. If this is needed, the intersection capacity and the pedestrian crossing placement can be affected.
- Green coloured surfacing can be used to improve the visibility and legibility of the cycle path on the approach and through the intersection.
- Ideally the design should include separate bollard-style cycle signals that provide a countdown to the cycle crossing phase. Signal phasing can also incorporate advanced cycle starts or exclusive vehicle turning phases to reduce the conflict.
- All Dutch intersection designs must be officially trialled and monitored in agreement with NZTA before implementation across the major cycleway network.
- Designing traffic signals is a specialised discipline. All designs need to engage a signal engineer for both the design and peer review. The signal design also needs to be reviewed by the Road Controlling Authority.

Top and bottom: Examples of Dutch intersections.

Design concept
(Major cycleways – Intersections – Dutch intersection)

2.5.2. *Major cycleways/ Intersections/Cycle Barnes Dance: Design principles*

An alternative design to the Dutch intersection is the cycle Barnes Dance. The pedestrian Barnes Dance is already used in New Zealand. However, the combined cycle and pedestrian Barnes Dance is a new concept in New Zealand and would need to be trialled in Christchurch. The design principles are:

- The cycle Barnes Dance gives an exclusive green phase for cycle movements at a signal controlled intersection. The approach is similar to a pedestrian Barnes Dance but for those cycling. The design is suitable at intersections with large cycle volumes or where a number of cycleways come together at one intersection.
- The controlled intersection ideally has a separate signal phase for pedestrian crossing, which follows the cycle phase.
- The network impact of an additional cycle phase on the intersection capacity needs to be considered. If a high level of service for traffic is to be maintained on one route (for example on arterial), the pedestrian and cycle phase could be combined.
- Ideally the cycle Barnes Dance will use a separate cycle signal to the main traffic signals, such as a small bollard-style signal placed at cyclist height. This makes the green phase obvious to only cyclists and reduces confusion with drivers. The cycle signal can also include a timed countdown to cross.
- The cycle Barnes Dance designs must be officially trialled and monitored in agreement with NZTA before implementation across the major cycleway network.
- Designing traffic signals is a specialised discipline. All designs need to engage a signal engineer for both the design and peer review. The signal design also needs to be reviewed by the Road Controlling Authority.

Example of a cycle Barnes Dance.

Design concept
(Major cycleways – Intersections – Cycle barnes dance)

2.5.3. *Major cycleways/ Intersections/Intersections with protected cycleways: Design principles*

Before official approval of Dutch Style and cycle Barnes Dance intersections (sections 2.5.1 and 2.5.2) or in instances where they are not possible to implement then protected cycle lanes should be used. The design principles are:

- Protected cycle lanes offer the cyclist improved protection by providing temporary separation from vehicles on the approach to the intersection. This is especially recommended at known conflict points such as left-turning traffic lanes.
- Temporary separation can be achieved by vertical edge markers (such as uprights), raised delineators (such as rumble strips or small kerbs) or painted chevrons.
- Where a protected cycle lane is introduced it is important not to reduce sightlines of pedestrian crossings and any vertical edge markers need to be carefully maintained.
- Introducing an exclusive cycle signal phase or delaying the left-turning and/ or the on-coming right-turning vehicles to allow the cyclist a head start at intersections can provide further priority and safety for cyclists.
- Designing traffic signals is a specialised discipline. All designs need to engage a signal engineer for both the design and peer review. The signal design also needs to be reviewed by the Road Controlling Authority.

Example of a vertical edge marker.

Design concept
(Major cycleways – Intersections
– Intersections with protected cycleways)

2.5.4. *Major cycleways/ Intersections/T-intersections: Design Principles*

Major cycleways that encounter T-intersections ideally will give continued priority, inter-visibility and protection for cyclists. The design principles are:

- Approaching a T-intersection, on the through route, the separated cycle path needs to be as wide as possible and to improve inter-visibility, parking around the intersection should be restricted. A small kerb radius (3-5m) could also be used to slow turning vehicles. This is shown on design concept 1 (Separated cycle path at T-Intersection).
- A green coloured surface across the intersection will improve visibility and awareness of the cycleway. The green surface should begin on the approach and end after the intersection.
- At the top of the T-intersection, where traffic signals already exist, a separate cycle signal should be considered to allow cycles to continue through the top of the T-intersection when the main traffic signals are red. A green phase for pedestrians will trigger a red cycle signal. This is illustrated in design concept 2 (T-intersection cycle signals allows cycles to continue through the intersection). The cycle signal must be officially trialled and monitored in agreement with NZTA before implementation across the major cycleway network.
- The design needs to consider the potential conflict with driveways or entrances across the T-intersection.
- At the top of the T-intersection, if cycle signals are not appropriate then a cycle by-pass on the footpath can allow cyclists to continue to cycle through, even when the main vehicle signals are red. However, the space required for pedestrians/cyclists waiting to cross the intersection needs to be considered.
- Other ways to reduce conflict at T-intersections are by only allowing left in/ left out manoeuvres to reduce the vehicle volume, installing traffic signals, or using corner islands to slow down turning vehicles and provide space for cyclists.
- Major cycleway T-intersection treatments need to consider the implications of slowing or restricting vehicles on the surrounding streets.

Top: Example of a cycle bypass. Bottom: Example of a cycle signal.

Design concepts
(Major cycleways – Intersections – T-intersections)

1. Separated cycle path at T-Intersections.

2. T-intersection cycle signals allow cycles to continue through the top of the intersection.

2.6. *Major cycleways through bus stops*

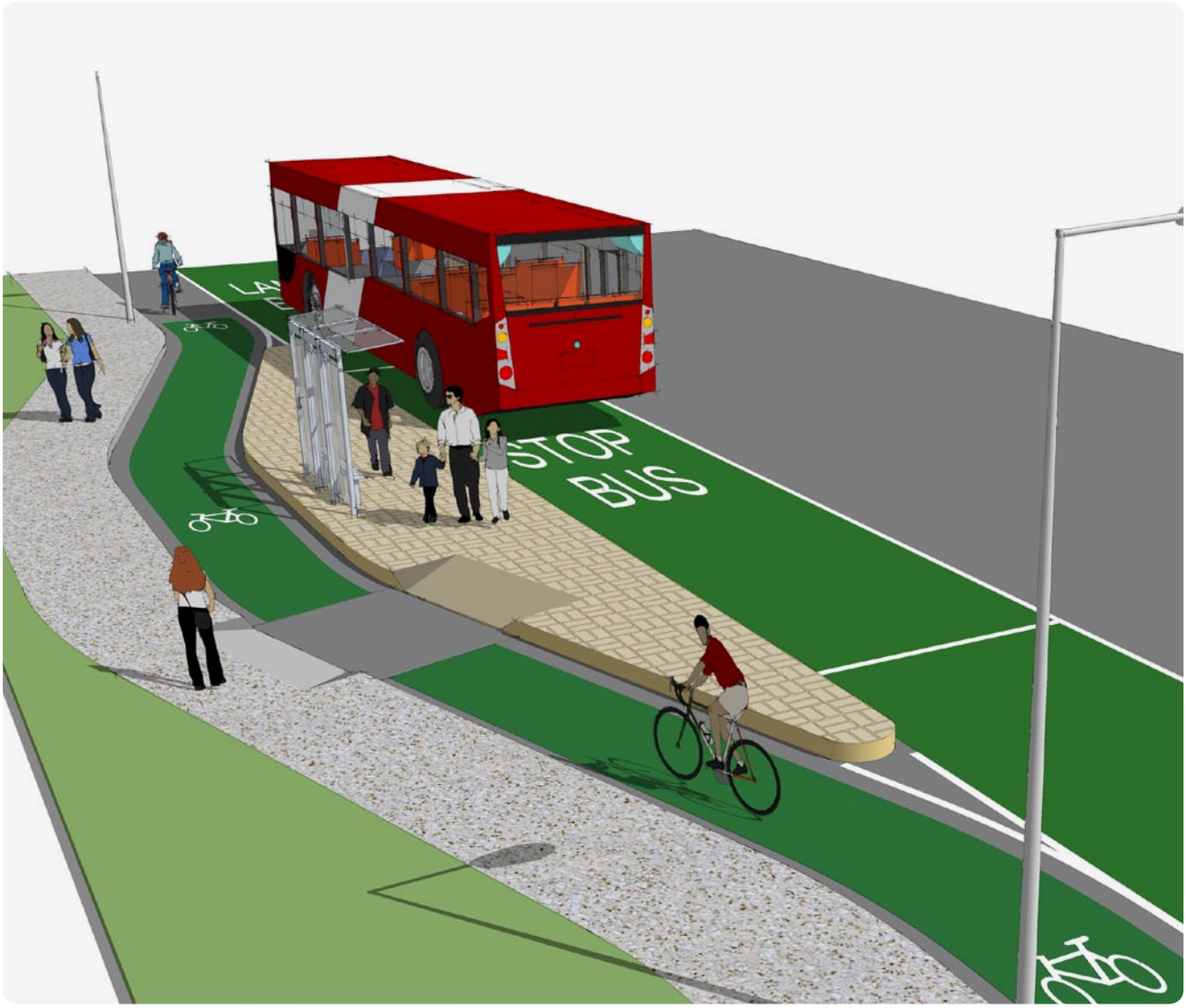
Major cycleways that share part of their route with bus services will ideally have a separated cycle lane at bus stops. The frequency of bus services will influence the design. On high frequency routes an island bus stop design is ideal. On lower frequency routes an inline bus stop design is appropriate.

2.6.1. *Major cycleways/Bus stops/ Island concept: Design principles*

On high frequency bus routes island bus stop designs are recommended. The design principles are:

- On high frequency bus routes (where buses run every 10 to 15 minutes during peak times) a cycle by-pass around the bus stop using an island provides both cycle priority and increased safety (illustrated in the design concept). The design needs to consider space for pedestrians and waiting bus passengers and be large enough to accommodate expected numbers.
- The design (including signage and markings) needs to encourage pedestrians to look for and give way to cyclists when crossing between the bus stop island and the footpath. The signs, markings and surface treatments need to encourage cyclists to slow down through the bus stop. Any potential conflict between cyclists and crossing pedestrians need to be addressed.
- The size of the island ideally will be large enough to accommodate current and future waiting passenger numbers.
- The width of the bus stop island needs to take into account the size of any shelter, slope of ramps, the location of kerbs and the number of bus passengers.
- This design requires space. Where there is not enough footpath width to accommodate an island then ways of expanding the space should be investigated such as land purchase, reducing the width of the main carriageway, or a shared by-pass.

Design concept
(Major cycleways – Bus stops – Island concept)



2.6.2. *Major cycleways/Bus stops/ Inline concept: Design principles*

Major cycleways sharing routes with low frequency bus services (less than one bus every 15 minute) can use an inline concept rather than a bus island. The principles are:

- The inline concept provides cyclists with a choice of ways to navigate around a bus that is stopped. Cyclists on a major cycleway approaching a stopped bus can use a shared (with pedestrians) by-pass, overtake the bus using the main traffic lane or stop and give way to the bus.
- The design, signage and markings needs to encourage cyclists to slow down and give way to buses entering the bus stop.
- The design needs to consider the level of conflict between cycles, buses and waiting pedestrians.
- The length of the bus bay needs to be long enough (approximately 26m) to allow for the full entry and exit of buses but also allow confident cyclists to overtake any stationary bus.
- The draft Christchurch City bus stop guidelines 2008 need to be considered.

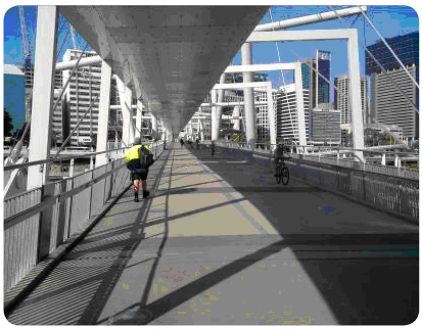
Design concept
(Major cycleways – Bus stops – Inline concept)

2.7. *Major cycleways crossing busy roads*

Cyclists on major cycleways that cross at busy roads should be provided with bridges, underpasses or signalised crossings. These treatments are safe for the cyclist and provide a good level of service for both the cyclists and other road users.

2.7.1. *Major cycleways/State highways and motorways crossings: Design principles*

- Overbridges or underpasses provide the safest way of crossing and the best level of service for both the major cycleway and the state highway or motorway.
- When designing the bridge or underpass it is important to apply Crime Prevention Through Environmental Design[7] (CPTED) principles. NZTA guidelines on underpass design[8] also need to be taken into consideration.
- Bridges and underpasses need to be wide enough to accommodate cyclists going both ways and high enough for safe head clearance.
- Underpass entries and exits need to be visible (good corner splays), open and be clear they are only for cyclists (not motorbikes).
- Underpass designs ideally need to incorporate as much natural light as possible using light wells, for example. If this is not achievable, then artificial lighting may be required.
- Underpass drainage needs to be considered and in some cases a pump station may be required.
- On bridges, hand rails and railing needs to comply with the Austroads Guide to Road Design – Part 6A – Pedestrian and Cyclist Paths, Sections 7.7.1 and 7.7.2.
- Designs of both bridges and underpasses need to consider typical weather conditions (particularly strong winds, storm drainage).
- Bridges can offer an opportunity to create a flagship structure at city gateways. Attractive, landmark infrastructure can help promote and enhance cycling and walking. The bicycle bridge in New Plymouth is a great New Zealand example of this principle in action (page 9).



From top to bottom: Examples of a light well, landscaping and widths.

[7] *Ministry of Justice (2005) Crime Prevention Through Environmental Design Part 1 and 2.*

[8] *New Zealand Transport Agency (2009) Urban design principles – Underpasses.*

2.7.2. *Major cycleways/Arterial, distributor and local streets crossings: Design principles*

Major cycleways crossing arterial, distributor and local streets need to consider if a bridge or an underpass is feasible (following the principles in section 2.7.1). If these options are not feasible, then signals are likely to be the next best option (at grade, signalised cycle crossings with induction loops). Dedicated signals provide cyclists with a safe way to cross. The design principles are:

- Signalised crossings with separate facilities for pedestrians and cyclists (cycle bollard style signal) will provide a safe crossing facility for pedestrians and cyclists. The separation allows for the shorter cycle phase to run separately from the pedestrian signal phase, which can improve traffic capacity.
- All signalised crossings need to consider the capacity and network implications of the crossings on the arterial road.
- Green coloured surfacing through the crossing should be considered to improve visibility and legibility of the cycle path through the crossing.
- The design should minimise waiting time for cyclists at crossings. Induction loops detect cyclists and trigger the signals and can be used on both the approach and the finish of the crossing.
- Cycleways that cross low volume, local streets can be programmed to rest on green as this gives a high level of service and priority to cyclists. Induction loops on the street are used to trigger the traffic signal to green and the cycle signal to red.
- Designing traffic signals is a specialised discipline. All designs need to engage a signal engineer for both the design and peer review. The signal design also needs to be approved by the Road Controlling Authority.

Example of a signalised crossing facility.

Design concept
(Major cycleways – Arterial, distributor and local streets)

2.7.3. *Major cycleways/Railway crossings: Design principles*

Major cycleways crossing a railway line that can't be separated should instead provide a safe flat (at grade) crossing point. The design principles are:

- Providing a high level of safety is paramount. Where the predominant cycle users are young, the ideal is an alarmed automatic gate which closes (and bells ring) when a train approaches but is open all other times. This design makes cycling through the crossing easy and manoeuvrable.
- The basic design for major cycleways crossing a railway line is a maze fence with signage. This has the disadvantage that cyclist have to slow and tightly manoeuvre across the railway line, they are also more exposed when a train approaches.
- The cycleway (or footpath) should be level with the train rails (rubber pads are used to level the surface). Narrow gaps between rails and the abutting carriageway surface help all users to cross safety and smoothly.
- Cycleway crossings should be perpendicular (or as close to perpendicular as practicable) to the train rails with fencing along the rail reserve to make sure the sanctioned rail crossing is used.
- Rail crossings should be well lit at night to improve safety.
- All designs and works on or immediately next to a railway line require approval from the rail access provider. Early consultation with local Kiwi Rail representatives is essential.

2.8. *Major cycleways and transitional treatments*

Interim or transitional treatments provide a temporary, lower cost option to show a change in priority on major cycleways before making any permanent changes. A temporary treatment can also be appropriate where an existing cycle lane is likely to become a major cycleway in the future.

2.8.1. *Major cycleways/ Transitional treatments/ Temporary separation: Design principles*

- Temporary separation can be used to improve the safety of cyclists in sections where vehicles frequently encroach on cycle lanes. This may include known conflict points on bends, high traffic speed routes or encroached sections of the cycle lane on the approach to busy intersections.
- Vertical edge markers (such as uprights), raised delineators (such as Riley kerbs) or painted chevrons are examples of temporarily providing separation.
- The temporary introduction of contra-flow cycle lanes on one-way streets can increase the connectivity of the cycle network. Contra-flow lanes could form part of a traffic management scheme during the rebuild. The design needs to carefully consider the safety of contra-flow cycle lanes at intersections and access onto and off of the facility.
- A contra-flow route is not appropriate if there are a high number of driveways and intersections next to the cycleway.
- The use of signage, markings and colour surfacing can highlight and reduce potential conflict areas.

Top: Examples of a vertical edge marker.
Bottom: raised delineators.

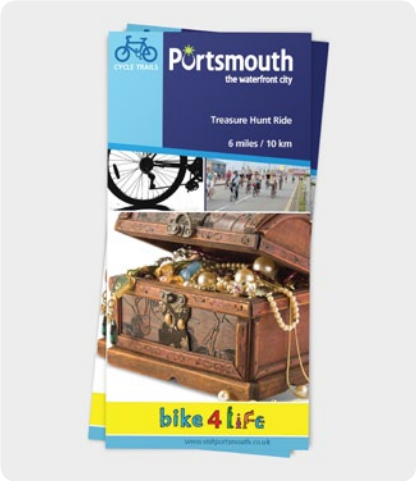
2.9. *Major cycleways with a themed identity*

A strong theme or brand for the major cycleway network can improve the image of cycling and create an attractive environment that encourages more people to cycle. Branded or themed cycleways will improve legibility making it clear to people when they are on a major cycleway and the direction the route follows. Themed cycleways can also have a unique appeal for tourists and residents.

Involving the community in developing the brand or themes for each major cycleway route will result in a strong sense of public ownership in the cycle network. This is a critical factor for successful implementation of the major cycleways. The brand or themes may be communicated using:

- Signs and markings of a particular design or theme (while still fitting in with the continuity of the wider network signs).
- Painting along the route in particular colours and/or designs reflecting the overall theme.
- Installation of art and sculpture along the route, and even in the cycleway itself, which has relevance to the theme.
- Interactive information points on the route which will educate people about particular aspects of the route and given theme.

Branding or themes for cycle routes and networks have been successful internationally. For example in Germany, the 'Berlin Wall Trail' follows the path of the old Berlin wall with information, art and historical artefacts relating to the history of the Berlin wall along the cycle route. In Portsmouth (UK) there are a variety of themes for individual cycle routes with sculpture and artwork relevant to the theme along the route. The themes include 'The Funky Bike Racks Ride', 'The Treasure Hunt Ride and the 'Famous Person Cycle Ride'. In Cardiff (UK) a public competition held to name and design the network logo of their cycle network was hugely popular and widely praised.



Top: Example of cycle branding[9]. Bottom: Example of cycleway sculpture[10]. Left: Example of themed routes[11].

[9] *www.keepingcardiffmoving.co.uk/cycle/enfys-cardiff-cycle-network*

[10] *www.theage.com.au/travel/activity/active/from-death-strip-to-worlds-most-fascinating-bike-trail-20110811-1inrd.html*

[11] *www.portsmouth.gov.uk/media/Treasure_hunt_leaflet.pdf*

3. Local cycleways

Local cycleways provide safe connections to major cycleways and local destinations across the city. They help create a safe environment for current and new cyclists, as well as catering for local needs. The proposed routes for the local and recreational cycleways are illustrated in Figure 3.1.

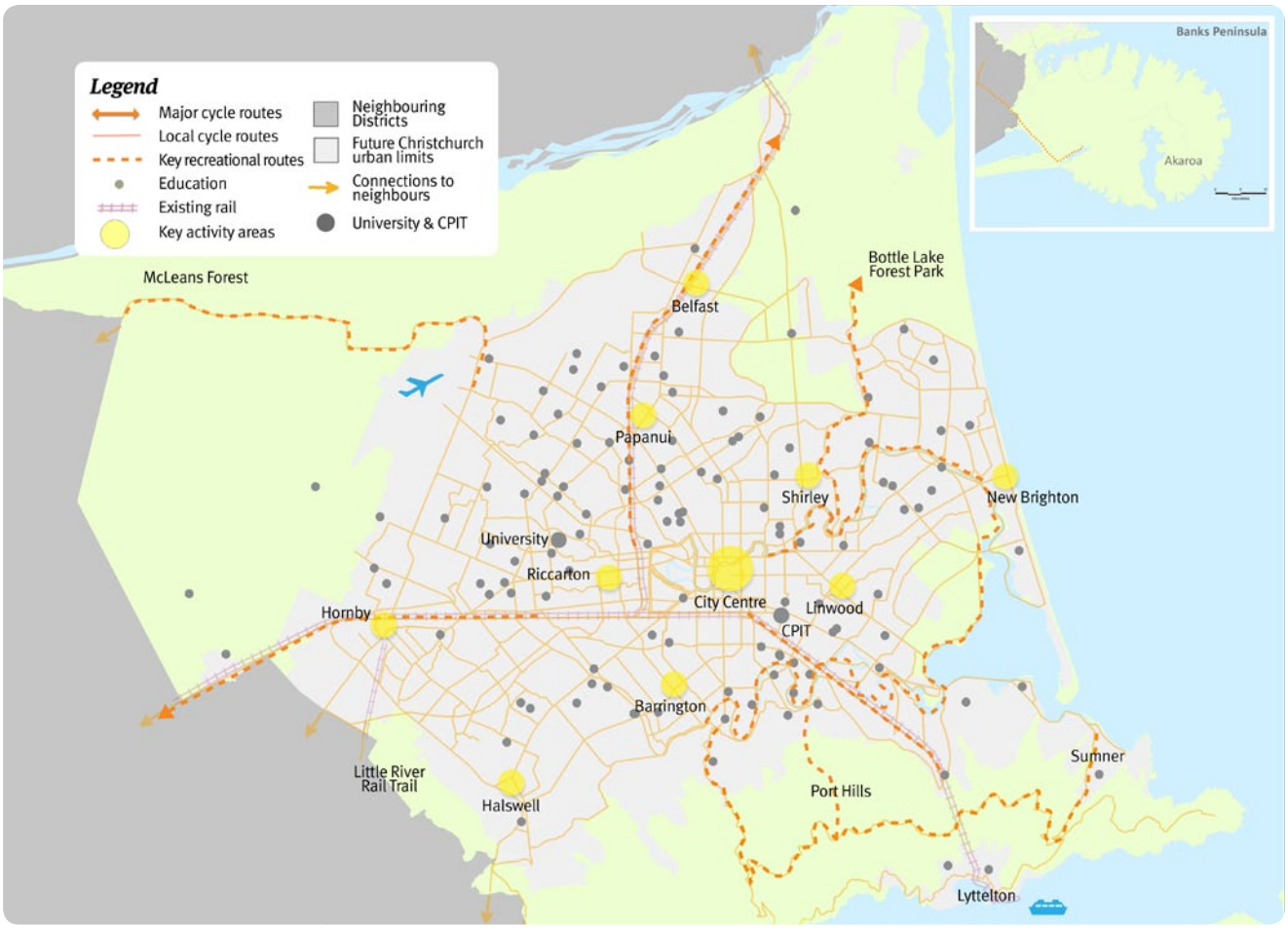


Figure 3.1. Future local and recreational cycleway network (Christchurch Transport Strategic Plan).

Local cycleways will be used by different types of cyclists and can take many different forms as they pass through different local environments or situations. Local cycleways, like major cycleways can consist of shared paths, separated cycle paths, cycle lanes, neighbourhood greenways or slow streets. This section outlines the local cycleway design concepts and principles for each situation, including:

1. Parks, reserves and waterways
2. Urban commercial centres
3. Residential streets
4. Arterial road and distributor streets
5. Intersections
6. Bus routes.

3.1. *Local cycleways through parks, reserves and waterways*

Local cycleways through parks, reserves, greenspace and along rail or river corridors will generally be wide, shared paths.

3.1.1. *Local cycleways/Parks, reserves and waterways/ Shared paths: Design principles*

- Designs need to reflect the park setting and character of the path.
- Shared path widths need to cater for current and future cycle and pedestrian peak volumes. On local cycleways where volumes are low a wide shared path without separation is appropriate. Where volumes are high then it would be appropriate to separate cyclists and pedestrians. A painted line provides the simplest form of separation (yellow paint is better for the visually impaired). Refer to Vic Roads (2012) Cycle Note 21 provides for further guidance on undertaking a path width assessment.
- Either side of the shared path should be clear of obstacles to allow for overtaking and to minimise the impact of any cycling errors especially at times of high use (approximately one meter either side of the path). This extra space can be provided by using more permeable surfaces at the edges such as turf cells.
- The design of the shared path should be appropriate to the expected speed of cyclists using the path (approximately 15 km/hr for expected users). Consideration to sight lines, signs, markings, path alignment and gradients is important.
- The shared path should be wide and strong (construction depth) enough to allow service vehicles access for maintenance.
- The design should create awareness of other path users by providing good on-path markings (such as aluminium role markings) with messages to indicate the presence of both pedestrians and cyclists. Surface texture treatments can also be used to raise awareness of other users and encourage more considerate use of shared paths. Further guidance on minimising conflict is in Austroads (2006) Research Report: Pedestrian and cyclist conflict minimisation on shared paths.
- Crime Prevention Through Environmental Design (CPTED) principles and accessibility for all users (including suitability for young cyclists, visibility for hand cycles and safety) should be considered.
- The needs of low mobility and visually impaired pedestrians must be considered in all designs.
- Where paths are located close to water, over water or along banks extra safety considerations need to be taken into count. For appropriate treatments designers should refer to the Austroads Guide to Road Design – Part 6A – Pedestrian and Cyclist Paths, Sections 7.7.1 and 7.7.2.

Example of a shared path with painted line separation.

Design concept
(Local cycleways – Parks, reserves and waterways – Shared paths)

3.2. *Local cycleways through urban commercial centres*

Local cycleways through commercial centres ideally will be separated cycle paths to provide a comfortable and safe environment for cyclists. Separation can be achieved in a variety of different ways depending on the individual centre and competing needs.

Where there is limited street space available other options such as wide cycle lanes or a slow street environment can be considered.

3.2.1. *Local cycleways/Urban commercial centres/ Separated cycle paths: Design principles*

The design principles for separated cycle paths are in section 2.2.1. (Page 18)

3.2.2. *Local cycleways/Urban commercial centres/Slow streets: Design principles*

The design principles for slow streets are in section 2.2.5. (Page 26)

3.2.3. *Local cycleways/Urban commercial centres/Cycle lanes: Design principles*

In commercial centres where a separated cycle path is not appropriate, a wide cycle lane should be considered. The design principles are:

- The cycle lane ideally needs to be wide enough for cyclists to pass one another (approximately 1.8 to 2m). A wider lane also gives cyclists more protection from traffic movement and car doors opening into the cycle lane.
- At side roads where the cycle lane continues along the main road, a continuity line is used to indicate that cyclists have priority, however vehicles can pass through the cycle lane.
- In the lead up to and where the cycle lane crosses an intersection, driveway, or entrance a change in texture or green surfacing increases the visibility of a potential conflict point.
- A mountable kerb or ramp provides easy access to cycle parking or information points where these are located on the footpath.

Example of green coloured surfacing.

Design concept
(Local cycleways – Urban commercial centres – Cycle lanes)

3.3. Local cycleways and residential streets

In urban residential streets, local cycleways ideally will be neighbourhood greenways which create a slow, safe environment where bicycles, vehicles and people can comfortably co-exist. The quality of the environment and amenity of the residential street is also enhanced through the design.

On busier residential streets, where lower traffic speeds and volumes are not possible then separated cycle lanes or shared paths may be more appropriate.

3.3.1. Local cycleways/Residential streets/Neighbourhood greenways: Design principles

The design principles for neighbourhood greenways can be found in section 2.3.1.

In addition to these design principles, on a local cycleway where traffic volumes and speed are already low, the cycleway may only need to be signed. This may involve placing route markings on the carriageway to increase the drivers' awareness of cyclists while acting as wayfinding for cyclists. Such route marking will be subject to a NZTA trial before wider use.

Example of cycle markings on a residential street.

3.3.2. Local cycleways/Residential streets/Cycle lanes

- Cycle lanes should be considered where vehicular volumes (roughly more than 2000 vehicles per day) are expected to be too high for a neighbourhood greenway. The design principles are:
- The cycle lane ideally will be wide enough for cyclists to pass one another (approximately 1.8 to 2m). A wide lane also gives cyclists more protection from traffic movement and car doors opening into the cycle lane.
- Where there is no parking spaces then cycle lanes will be next to the kerb and extra width added to the cycle lane as appropriate.
- Where space is limited, additional space for the cycle lane can be achieved by re-allocating on-street car parking, reducing the width of the carriageway or using some of the berm as a cycleway. These options should include consultation with the local community.
- In the lead up to and where the cycle lane crosses an intersection, entrance or driveway, a change in texture or green surfacing is recommended. This can increase the visibility of cyclists at potential conflict points.
- Treatments such as vertical edge markers need to be considered in potential conflict areas especially where vehicles are known to enter the cycle lane.

3.3.3. Local cycleways/Residential streets/Shared paths: Design principles

Shared paths provide good local cycleway connections to schools or community facilities, especially in residential areas. The design principles are:

- The shared path ideally needs to be wide enough to comfortably accommodate both a pedestrian and a cyclist side by side (approximately 3.5m). Pedestrian and cycle volumes need to be assessed to determine the width. Vic Roads (2012) Cycle Note 21 provides further guidance on undertaking a path capacity and safety width assessment.
- On the shared path a painted line (or textured) provides simple separation to give space between pedestrians and cyclists. Where there are higher volumes of pedestrians or cyclists then a separated cycle path (at the footpath level), potentially utilising part of the berm could be more appropriate (Similar to Tennyson street in Christchurch).
- In and around schools and community buildings shared paths for slower, less confident cyclists are ideal and on-road cycle lanes could also be available for faster, more confident cyclists.
- The needs of low mobility and visually impaired pedestrians and cyclists should be considered in all designs.
- Surface types need to be smooth while retaining traction. Smooth sealed paths (using universal building materials such as asphalt or aggregate concrete) are preferred.

- The design of shared paths needs to encourage slower cycle speeds so the cyclist slows closer to the pace of a pedestrian. Surface texture treatments make people aware of the environment and promote more considerate use of shared paths.
- The design should create awareness of other path users by providing good on-path markings (such as aluminium role markings) with messages to indicate the presence of both pedestrians and cyclists. Surface texture treatments can also be used to raise awareness of other users and encourage more considerate use of shared paths. Further guidance on conflict minimisation is in Austroads (2006) Research Report: Pedestrian and cyclist conflict minimisation on shared paths.
- Shared path designs need to reflect the local character of the street and incorporate space for landscaping around the path.
- The design should consider safety and inter-visibility at driveways and intersections. Wide visual splays ensure good sight lines of people walking and cycling, the cycle side of the shared path should be located on the outside, away from boundary fences. A wider berm width between the driveway and the shared path can also increase visibility of the shared path.

Top: Example of a shared path. Bottom: Example of a separated cycle path on the berm (Tennyson Street Christchurch).

3.4. Local cycleways on arterial roads and distributor streets

On arterial roads and distributor streets, vehicle movement often has priority but more confident cyclists may also share the road. To improve safety, local cycleways ideally need to be either a separated cycle path or cycle lane.

3.4.1. Local cycleways/Arterial roads and distributor streets/Separated cycle path: Design principles

On arterial roads separated cycle paths should be considered first, because they provide the highest level of cycle comfort and safety. The design principles and concepts for separated cycle paths are in section 2.2.1.

3.4.2. Local cycleways/Arterial roads and distributor streets/ Cycle lanes: Design principles

On arterial roads or distributor streets which have slower vehicle speeds (ideally 50km/hr or less) and lower volumes, or where separated cycle lanes are not practical, a wide cycle lane is recommended. The design principles are:

- The cycle lane ideally needs to be wide enough for cyclists to pass one another (approximately 1.8 to 2m). A wider lane also gives cyclists more protection from traffic movement and car doors opening.
- Where there are no parking spaces then cycle lanes should be next to the kerb, with a no stopping line and extra width added to the cycle lane as appropriate.
- Where space is limited, additional space for the cycle lanes could be achieved by re-allocating on-street car parking or using some of the berm as a cycle lane or for parking bays. These options should include early consultation with the local community.
- Where the cycle lane crosses an intersection, driveway or entrance green surfacing should be used to increase the visibility of cyclists and reduces potential conflict.
- Treatments such as vertical edge markers need to be considered in potential conflict areas especially where vehicles often enter the cycleway.
- At side roads where the cycle lane continues along the main road, a continuity line is used to indicate that although cyclists have priority, vehicles can pass through the cycle lane.

Example of a cycle lane on an arterial road.

3.5. *Local cycleways at intersections*

Turning vehicles at controlled intersections, t-intersections and roundabouts can make cyclists using local cycleways vulnerable. Designs at intersections need to help to make the cyclist more visible and make it easier for them to pass through the intersection.

Designs to improve cycle comfort include advanced stop boxes, hook turn boxes, cycle lanes, cycle bypasses and traffic calmed single lane roundabouts. Designs will need to respond to the intersection type and capacity.

3.5.1. *Local cycleways/Signalised intersections/Advanced stop boxes and hook turn boxes: Design principles*

A cycle area ahead of (in advance of) vehicle traffic signal limit lines is called an advanced stop box. Advanced stop boxes give cyclists a head start from vehicles and make cyclists visible to queued drivers. Hook turn boxes allow a cyclist to turn right at an intersection in two separate manoeuvres. The design principles are:

- Advanced stop boxes need to provide an area where cyclists can wait safely when traffic signals are red. The box makes cyclists visible to queued drivers and gives cyclists a head start when the signal turns green.
- Where possible, the advanced stop box needs to cover the full width of the traffic lane not just the cycle lane. The position of the advanced stop box and cycle lane should take into consideration driver turning movements to make sure it is safe for all road users. The Manual of Traffic Signs and Markings (MOTSAM) provide good guidance on where and how to configure advanced stop boxes.
- Contemporary standards recommend advanced stop boxes are 4 to 5 metres deep. This allows cyclists to enter the box when vehicles are queuing. The current MOTSAM requirements are 2.9 metres deep. This standard is currently under review. Consideration should be given to deeper boxes.
- Hook turn boxes make right turns easier for young and less experienced riders. Hook turn boxes should be placed in safe locations so they do not interfere with other road users.

Example of a hook turn box and an advanced stop box.

3.5.2. *Local cycleways/Signalised intersections/Cycle lanes: Design principles*

There are two main scenarios for cycle lanes at signalised intersections, the first is a single cycle lane (design concept 1) and the second is a left-turn and straight-through cycle lane (design concept 2). Both of these scenarios will improve the visibility of cyclists at intersections. The design principles are:

- The number of traffic lanes, their direction (left-turn, straight-through or right-turn lanes) and vehicle speeds need to be taken into consideration when deciding on the position, markings and width of a cycle lane (approximately 1.6 to 2m) as it approaches an intersection.
- Where there is only one traffic lane, the cycle lane needs to approach the intersection on the kerb side (design concept 1).
- Where there is more than one traffic lane then a second cycle lane can be placed between the left-turn and straight-through traffic lanes (design concept 2).
- In both designs, hook turn boxes can facilitate right turns for young or less experienced riders. Hook turn boxes need to be placed safely so they do not conflict with other road users and turning movements.
- Cycle lane markings ideally need to continue through the intersection, preferably using a green surface treatment or painted continuity lines. This helps cyclists through the intersection, increases their visibility and helps drivers to understand where cyclists are riding at the intersection.
- Left-turning vehicles often cross into cycle lanes when approaching intersections. To protect cyclists at intersections vertical separation and green surfacing encourages vehicles to stay out of the cycle lane. This is especially important if the intersection is busy.
- Low mountable kerbs and vertical edge markers are two ways of providing vertical separation (illustrated in design concept 1). When vertical protection is introduced it is important to maintain clear sightlines of pedestrian crossings and provide ongoing maintenance of any vertical edge markers.
- Cyclists can be given a higher priority and a more protected crossing at signalised intersections by introducing: an exclusive cycle phase, a delay to the left turning vehicle lane, or a delay to the on-coming right turning traffic lane while cyclists cross.

Top: Example of cycle lane markings and colour treatment through the intersection. Bottom: Example of vertical edge markers.

Design concepts
(Local cycleways – Signalised intersections – Cycle lanes)

1. Single cycle lane at the intersection.

2. Left-turn and straight-through cycle lane at the intersection.

3.5.3. *Local cycleways/ Intersections/By-passes: Design principles*

On local cycleways, where a cycle lane makes a left turn at an intersection and vehicle turning speeds and volumes are high (often with wide angled corners) then a cycle by-pass can be considered. The design principles are:

- A cycle by-pass provides a safe, continuous left-turn for cyclists by offering an off-road cycle path, next to the footpath, which goes around the outside of the intersection. The cycle path needs to allow space for pedestrians approaching and waiting to cross the intersection and take into account what the land alongside it is used for.
- An alternative design is an on-road by-pass. An on-road by-pass will ideally have two parts: a separate on-road cycle lane for left turning cyclists and an advanced stop box for cyclists who continue straight on.
- An on-road by-pass needs to be highly visible and could also offer extra protection such as vertical edge markers. An advanced stop box also offers a safe place to wait for the signals to turn green without being in the way of any left-turning cyclists.
- Design needs to consider pedestrian movements, volumes, waiting space, and the needs of mobility and visually impaired pedestrians.

Example of a cycle bypass at an intersection.

Design concept
(Local cycleways – Intersections – By-passes)

3.5.4. *Local cycleways/ Intersections/Roundabouts: Design principles*

Roundabouts are challenging for cyclists and where possible they should be avoided on local cycleways. If a single lane roundabout is unavoidable, then the roundabout design needs to reduce the vehicle speed to cycling speed. This means that cyclists can safely share the traffic lane. Multi-lane roundabouts should provide an off-road cycle path. The design principles are:

- At minor roundabouts (single lane, low traffic volume) the geometry of the roundabout needs to reduce approaching and circulating vehicle speeds. The design needs to encourage vehicles to slow down and share the road space with cyclists. Consideration should be given to radial geometric designs, which increase deflection and reduce speed compared to the traditional tangential design.
- In a radial design, cyclists can share the traffic lane. The cycle lane needs to finish before the roundabout and include signage to alert all road users that cyclists will now be merging into the traffic lane before they enter the roundabout.
- If the radial roundabout has splitter islands between each arm, the islands need to have parallel kerbs not the triangular shaped islands used in a tangential roundabout.
- If the minor roundabout on a local cycleway provides passage to a nearby school or community facility then a shared path around the outside of the roundabout is ideal. The width of the shared path will need to accommodate both pedestrians and cyclists.
- Another option for roundabouts is a cycle roundabout. Cycle roundabouts often have two narrow approach lanes where the cyclist 'takes' the lane to travel through or around the roundabout. The narrow lanes reduce speeds and encourage lane sharing. Large vehicles are advised (by signs) to straddle both approach lanes.
- For large roundabouts with multi-lane approaches an off-road cycle path with traffic signals is safest. As the cycle lane approaches the roundabout, flush kerbs provide a ramp onto a shared path. The shared path ideally connects to a signal crossing at a safe distance back from the roundabout exit. Once through the roundabout the shared path merges the cyclist back into the on-road cycle lane.

Top and bottom: Examples of cycle roundabouts with a shared lane.

3.5.5. *Local cycleways/ Intersections/T-intersections: Design principles*

Local cycleways approaching T-intersections need to offer continued priority and increased visibility to improve safety. The design principles are:

- Approaching the T-intersection parking should be restricted and a wide cycle lane provided to increase the inter-visibility between the driver and cyclist (design concept one). A small kerb radius (3-5m) can also be used to slow turning vehicles and reduce the pedestrian crossing distance.
- To improve visibility, a green coloured surface across the T-intersection is ideal especially where there are a number of vehicles turning. The green surface should start before and end after the intersection.
- At the top of a signal-controlled T-intersection a separate cycle signal that allows cycles to continue through the top of the T (even when the main vehicle signal is red) is recommended (illustrated in design concept 2). This requires a trial with NZTA before it can be implemented across the network.
- The design needs to consider potential conflicts with pedestrians and incorporate either markings for cyclists to give way to pedestrians or a signal to stop cyclists, if the pedestrian phase has been triggered.
- The design needs to consider any potential conflict with driveways or entrances across the T-intersection.
- The design needs to consider the discharge capacity of the side road and network implications.

Design concepts
(Local cycleways – Intersections – T-intersections)

1. Cycle lane at a T-intersection.

2. Cycle signals allow cycles to continue through the top of the T-intersection.

3.6. Local cycleways and bus routes

There are some locations on the transport network where there will be both a local cycleway and a bus priority lane, where this occurs the bus lane should be shared with cyclists.

Design Principles

The design principles are:

- Part-time bus lanes need to provide enough width to comfortably share space with cyclists. They should be wide enough to accommodate overtaking (both buses overtaking cyclists and cyclists passing parked cars when the bus lane is not operating) and provide a buffer between cyclists and the vehicle traffic. To achieve this, the ideal width is around 4.5m and the absolute minimum width for a shared cycle and bus lane is 4.2m which should only occur over a short distance.

Example of a shared bus lane.

4. Recreational cycleways

Recreational cycleways provide for people who cycle for sport (faster cyclists) and/or for a road trip and people who ride for leisure (slower cyclists). The design of cycle facilities for each user is different. Sports/road trip facilities need to focus on improving on-road conditions while leisure cycle facilities need to focus on off-road options that connect parks or greenspace.

Both designs should be continuous and wide enough so that cyclists of all abilities feel safe. The proposed routes for the local and recreational cycleways are illustrated in Figure 4.1.

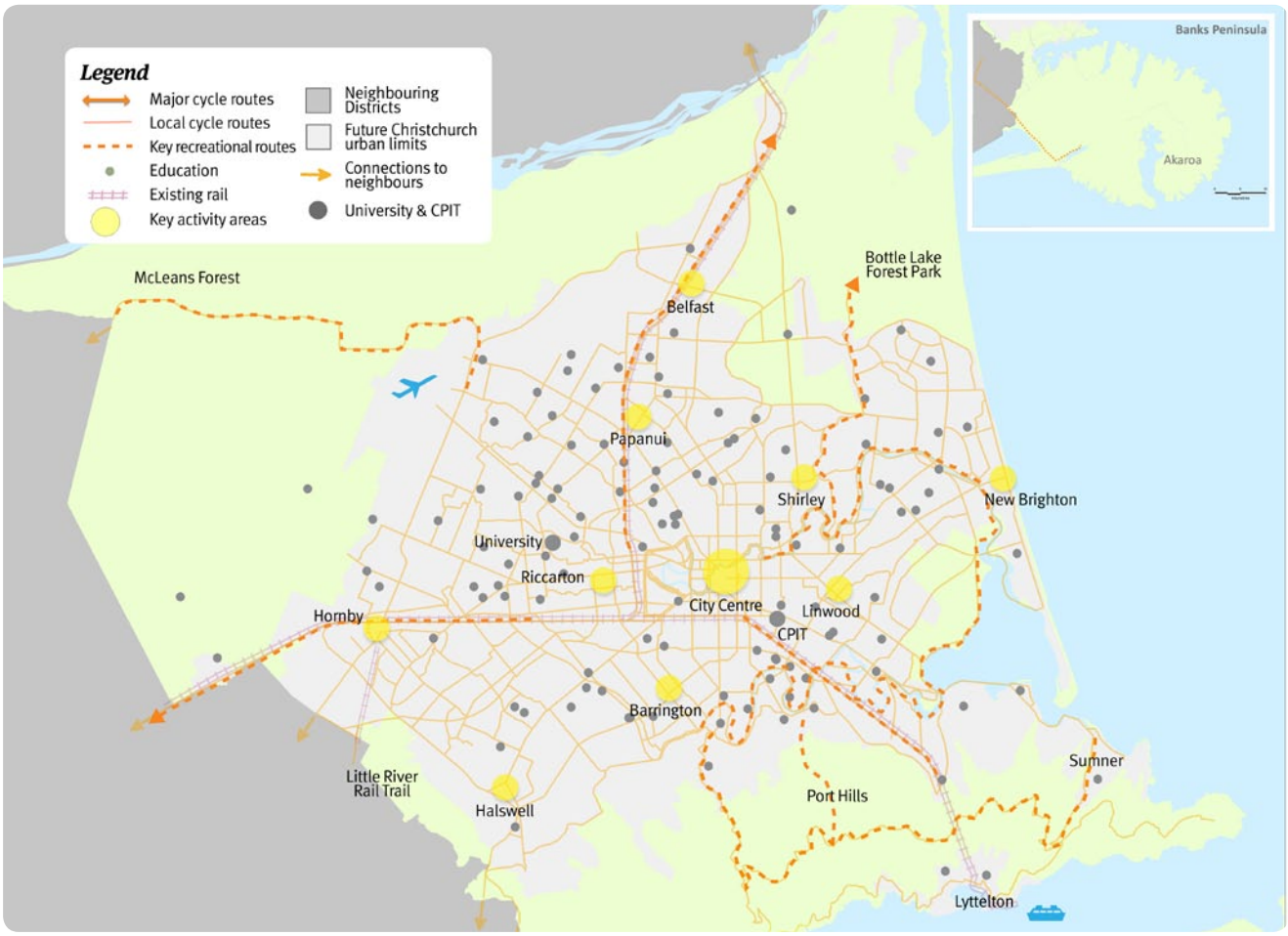


Figure 4.1. Future local and recreational cycleway network (Christchurch Transport Strategic Plan).

4.1. *Recreational cycleways and cycling for leisure*

Recreational cycleways that connect parks, rivers and coastal areas are ideally off-road, wide, shared paths. The design provides a safe environment to facilitate leisure and recreational cycling.

Design Principles

The design principles are:

- The designs should cater for the volumes and the directional split of cyclists and pedestrians that use and could use the path.
- Shared paths need to be wide enough to comfortably accommodate expected volumes of both cyclists and pedestrians. Cycle Note 21 provides further guidance on undertaking a path capacity width assessment.
- Designs should sensitive to the park or greenspace setting.
- Where paths are located close to water, over water or along banks extra safety considerations should be taken into count. Where paths are located close to water, or over water, or along banks then safety considerations should be taken into count. For appropriate treatments to ensure safety refer to the Austroads Guide to Road Design – Part 6A – Pedestrian and Cyclist Paths, Sections 7.7.1 and 7.7.2.
- Recreational shared paths can be unsealed to fit in with the park or coastal environment.

Example of a recreational walking and cycle path.

4.2. *Recreational cycleways and cycling for sport and road trips*

Recreational cycleways for sports and road trip cyclists need to focus on improved on-road conditions. Providing for road sport cyclists requires an understanding of the characteristic needs of the group. Generally road cyclists are made up of people into sport or simply cycling for their own enjoyment. Road cycling trips are typically up to three times longer than utility, commuter or education cycling trips.

Design Principles

The design principles for on road cycling facilities are:

- The design should seek to provide a high quality road surface which can accommodate a typical sport cycle speed of over 30 km/h.
- On going maintenance is important to address pot holes and edge breaks. To maintain a clean surface, clear of broken glass the cycleway should be more regularly swept.
- The design should seek to provide generous road, shoulder and cycle lane widths to accommodate road cyclist who often ride side by side. This is especially needed on roads with high speeds (above 50 km/h), particularly on arterial and rural roads. The Austroads recommended widths for cycle lanes and shared shoulder widths are below. If parking is present the cycle lane widths should be wider. Refer to New Zealand supplement to the Austroads guide to traffic engineering practice part 14: Bicycle (NZTA) for these cycle lane widths:

Speed limit	50kph or less	70kph	100kph
Lane width (in metres)	1.5	1.9	2.5

- On narrow or rural roads where space is physically limited, safety needs to be improved through signage, markings and education campaigns. On tight, narrow or blind corners, use roadsigns, warning signs or electronic signs to let vehicles know a cyclist is likely to be on the road ahead. On the most popular recreational cycleways a reduction in speed limits could be considered.
- Wide, separated cycle paths in rural areas could be considered to improve safety for sports/road trip cyclists.

Example of road use signs.

5. Parking and cycle facilities

To encourage more people to cycle more often quality cycleway design needs to include cycle parking.

5.1. Cycle parking

To encourage more people to cycle, a good number of secure, high quality cycle parking facilities should be located at key destinations throughout the city. Good parking provision can add creativity, de-clutter spaces and un-block footpaths from badly parked bicycles. Cycle parking demand should be monitored and planned for so that parking provision is well thought out and can be adapted to the changing needs of the city. This will avoid an over or under supply of bicycle parking facilities.

Different parking facilities are appropriate for different circumstances depending on the location, estimated length of stay and likely users. This guideline focuses on the design principles for short and long stay cycle parking.

5.1.1. Cycle parking/Short term: Design principles

For short term parking (two hours or less) the design principles are:

- Place cycle stands close to key destinations and in prominent areas. This will increase the attractiveness of cycling and the security of the facility.
- Cycle stands need to be designed to provide stability in windy conditions or on a sloping footpath. They should cater for and provide stability to different styles of bicycles (including cargo and electric bikes), so that both the frame and a wheel can be secured, such as the wide hoop stand. Ideally stands will not be secured by the front-wheel only.
- The design of cycle stands should be attractive, practical, easy to use, robust and easy to maintain.
- Ideally cycle stands will provide basic weather protection and basic cycle service facilities.
- Cycle stands need to be placed so parked bikes do not interfere with pedestrians and where they are not hit by moving vehicles.
- The number of cycle stands ideally will allow for spare spaces even at peak times. The space provided should allow for stands to be progressively added as cycle numbers grow.
- Innovative designs can encourage their use and add to the urban form.

From top to bottom: Examples of innovative parking designs, servicing facilities and cycle stand shelters.

5.1.2. *Cycle parking/Long term: Design principles*

For long term cycle parking (above two hours) the design principles are:

- Long term parking should be in places where people are likely to leave their bicycles for longer than two hours (eg: public transport stops, commercial centres, areas of high employment or community facilities). Individual businesses are also encouraged to provide secure, covered parking with adequate facilities to encourage employees to cycle to work.
- Long term parking facilities should be contained and covered with restricted access.
- Electric parking facilities with charging points can be considered in popular locations to facilitate the growing trend of electric bicycles.

There are three key types of long term parking facilities: individual lockers, collective facilities and larger storage facilities. Each type is outlined below.

- **Individual locker parking** offers a covered, secure, location for cycles and other accessories to be stored. They can be on-street or integrated into buildings. The lockers can either be privately rented or used on a first come, first served basis where people provide their own padlock. They can be privately owned and managed. Ideally they will be supervised (eg: with CCTV or natural surveillance).
- **Collective lockers** hold a number of cycles securely. They operate as a collective with each member of the collective owning a key. They can be on-street or off-street and work well in high density residential environments, or with a single employer or group of employers with close connections.
- **Larger storage facilities** need to be covered and secure and may include additional facilities such as lockers or showers. They need to be in areas where there is a high demand for long term cycle parking (eg: a public transport interchange or a large commercial area). The facility should be secure to enter, use and exit. The storage facility could be integrated into other buildings or off-street car parks to reduce the space required for on-street storage.

From top to bottom: Examples of a large storage facility, an individual locker and a secure facility.

Glossary

Aluminium role signs – message signs rolled into the footpath or cyclepath.

Bridge parapet – a structure or wall that prevents users from falling off a bridge when there is a drop.

Bus bay – a special area on the side of the road used by buses to stop as a designated bus stop in order to pick up and drop off passengers.

Cargo bike – Bicycles that have been designed to carry a significant load. Designs often have large containers either at the front or rear of the bicycle.

Carriageway – the width of a road where a vehicle is not restricted by any physical barriers. The carriageway is area between the two kerbs of the roadway.

Chicane – an artificial feature creating extra turns in a road, used on streets to slow traffic for safety.

Coloured surface treatments – different coloured surfaces used to signify cycle lanes at points of conflict.

Continuity line – Broken white lines for road marking, which are wider and closer together than regular broken lines.

Contra-flow cycle lane – cycle lanes which operate in the opposite direction to the usual flow of traffic on the road.

Copenhagen cycle paths – cycle paths which originated in Copenhagen. They are unique in that the cycle path is located between the height of a road and the height of the footpath. This stops cars encroaching in the cycle lane and highlight to pedestrians that the area is for cycling.

Crossing treatments – facilities which are put in place which make crossing the road easier for people.

Cycle Barnes Dance – an intersection treatment which allows for all cyclists at each arm of the intersection to have a combined green phase. This allows for full movement across the intersection whilst cars are held on red.

Cycle bypass – infrastructure which allows cyclists to legally complete an intersection manoeuvre even when the vehicle traffic signals are red.

Cycle crossing – specifically designed infrastructure to allow cyclists to cross busy roads in a safe, convenient manner.

Cycle lane – an area on the road which has been designated for bicycles only, often found towards the edge of the carriageway.

Cycle network – highlights the future cycling routes in Christchurch, split into major, local and recreational routes.

Cycle roundabout – a roundabout design safe for cycling, which has two narrow approach lanes which encourage lane sharing.

Cycleway – a route which is prioritised for cycling.

Diagonal diverters – are build outs at intersections to prevent through traffic, they include gaps for bicycles, so that they can pass through the intersection.

Electronic cycle counters – large structures found on cycle routes which show the number of cyclists which have used the route. Can be used for cycle count information as well as cycling promotion purposes.

End user facilities – facilities which are required at the end of a journey which cyclists may require. Can include, showers, lockers and bicycle stands.

Flush kerbs – kerb lines which are at the same level as the carriageway, this results in no drop down from the footpath to the carriageway.

Induction loops – signalling infrastructure which made up of pressure sensors which detect cyclists before they reach a set of signals. This allows for the signals to change allowing for cyclists to go when they approach the signals.

In-line bus stop – bus stops which are located within the carriageway and are marked by a painted are near the kerb.

Island bus stop – a cycle by-pass around the bus stop using an island.

Kerb and channelling – drainage infrastructure found at the edge of carriageway.

Kerbed separation – physical infrastructure which separates cycle facilities from other traffic lanes. Can be a variety of widths.

Light wells – spaces in roof structures or bridges which allows natural light to funnel down to the area below.

Lighting studs – small circular studs which can be placed in the pavement to highlight presence of potential hazards. They charge up during the day and emit a constant light during night hours.

Maze fence – a zig-zag fence often used to slow and warn pedestrians and cyclists in the build up to railway crossings.

Median islands – structures found in the middle of the carriageway to separate two different flows of traffic.

Mobility friendly – infrastructure which is designed to accommodate people of all mobility levels.

Mountable kerbs – kerbs which are low enough to be driven over without significant discomfort. Often plastic or temporary.

Neighbourhood greenways – streets which have been designed to give cyclists and pedestrians a greater level of priority in the street environment. This can be achieved by using traffic calming measures to speeds and volumes on the street (sometimes referred to as Bicycle Boulevards or Green Streets).

NZTA – New Zealand Transport Agency

Painted separation – painted markings which designate the boundary where cycling facilities and either a traffic lane or a footpath begins. This painted area can vary from a single painted line to area one metre wide with chevrons inside.

Part-time bus lanes – bus lanes which are only in operation at peak times. At non peak times they become a normal traffic lane or car parking.

Planter separation – a method of separating cycle facilities from other modes using vegetation, often in the form of plants in raised boxes or trees.

Pump station – a place with a bicycle pump to inflate tyres and basic mechanical tools to fix bicycles.

Raised platforms – areas on the carriageway which are raised to slow traffic at potential conflict areas.

Road Controlling Authority – local authority responsible for roads

Road classification – categorises roads according to their function and place type.

Road corridor width – the width of the entire section of roading corridor, including cycling infrastructure, berms, and footpaths.

Road user hierarchy – defining modal priorities (walking, public transport, cycling, traffic or freight) to give particular modes of transport priority on certain roads at particular times of day.

Separated cycle paths – areas which are physically separated and used for cycling. These could be on-road facilities separated by a kerb or cycle paths which are separated from a footpath by a grass strip.

Shared paths – Transport infrastructure which allows cyclists and pedestrians to have shared use of a pathway.

Slow streets – Streets which have been designed specifically for reduce traffic speeds.

Street furniture – Objects or pieces of equipment installed on streets and roads for various purposes. Examples include, post boxes, benches, sculptures etc. Careful placement of street furniture placement can help reduce traffic speeds.

Surface treatments – The material applied to the top level of the carriageway which makes the carriageway more visual at conflict points.

Traffic calming – measures used on a street to reduce the speed and volume of vehicles in order to create a safer environment for pedestrians and active transport users.

Traffic lane – an area of carriageway which has been designated for traffic to use.

Turf cells – Pieces of infrastructure which allows grass to grow in plastic frames. The frames give extra support allowing for vehicles and bicycles to use the area with no degradation of the grass.

Universal design – The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design.

VicRoads – one of several state government agencies that assist the Victoria State Government to achieve its integrated transport policy objectives.

Visibility splay – an area clear of obstruction, a set distance back from the road edge and along the road, to allow drivers to see any traffic (including pedestrians and cyclists) coming. In the case of pedestrian or cycle visibility splay, this area is from the pavement boundary, to allow drivers pulling out of a driveway to see pedestrians or cyclists coming.

Wayfinding – concerned with helping people orientate themselves in places, this may can come in a variety of ways from better signage to improving urban design.

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5. INFRASTRUCTURE REBUILD MONTHLY REPORT

General Manager responsible:	General Manager Capital Programme, DDI: 941 8235
Officer responsible:	Infrastructure Rebuild Client Manager
Author:	Will Doughty, Infrastructure Rebuild Leader

PURPOSE OF REPORT

1. To provide the Environment and Infrastructure Committee with a monthly update on the infrastructure rebuild.

EXECUTIVE SUMMARY

2. At its April 2011 meeting, Council gave approval for an Alliance to be formed to deliver the reinstatement of the City's damaged infrastructure. It was also agreed that the Chief Executive would report regularly to the Council on progress with regard to the reinstatement work.

3. The report (**Attachment 1**) is the fifteenth of what will be a regular monthly report that is provided to the Environment and Infrastructure Committee, Council and the Canterbury Earthquake Recovery Authority (CERA).

STAFF RECOMMENDATION

It is recommended that the Environment and Infrastructure Committee recommend that the Council receive the Infrastructure Rebuild Monthly Report for March 2013.

Christchurch City Council

New Zealand Government

INFRASTRUCTURE REBUILD PROGRESS REPORT

MARCH 2013

TABLE OF CONTENTS

6.2 NON-SCIRT Work Activity

1. INTRODUCTION

The purpose of this report is to provide Council, CERA and NZTA an update on the horizontal infrastructure rebuild. For this month, and going forward, progress on all horizontal infrastructure rebuild work is reported. This includes the work activity being delivered by SCIRT (section 4.1) and work being delivered under business as usual (BAU) mechanisms (section 4.2).

2. ACTIVITIES FOR THE MONTH

February was a strong month for delivery in the field assisted by the good weather. The SCIRT claim for the month totalled $41.4m for infrastructure rebuild activities of which $24.7m related to the construction activities in the field. With the increase in work sites across the city communications around roadworks and safety is also increasing. Encouraging on-going patience and thanking people for doing the right thing is a critical component to this communication. There are also a number of initiatives being considered between CCC and NZTA to optimise traffic management around the city.

With the increase in work sites there is also a strong internal focus around safety and quality on each site and ensuring consistent practices are being implemented across all contractors and sub contractors in involved in the infrastructure rebuild. There are currently approximately 1600 people involved in the SCIRT component of the rebuild.

Visits to the Community Boards are underway highlighting progress and achievements to date and also what the big ticket items in each ward are over the next six months. Extensive community engagement is also being undertaken at present around introducing new low pressure sewer systems to parts of the city.

This month the financial reporting format has changed to provide greater clarity around the progress against the annual plan budget for infrastructure rebuild activities as well as performance against the SCIRT target cashflow for the year. A separate value report is being considered for inclusion in future progress reports.

3. FINANCIALS

Below is a summary of the financials for the horizontal infrastructure rebuild.

This report includes a breakdown for the current financial year to date as per Council Annual plan and the agreed SCIRT performance target in section 3.1 and actual life to date costs against the overall infrastructure rebuild estimate (plus additional projects) in section 3.2. For the purpose of this report all indirect costs have been allocated based on portion of the programme estimate per activity.

3.1 Infrastructure rebuild activities actual year to date costs

3.1.1 Actual year to date costs - Council infrastructure rebuild activities

Table 3.1 below summarises the year to date costs of Council infrastructure rebuild activities as per the agreed annual plan budgets. These activities are delivered by SCIRT as well as through business as usual mechanisms.

Council 2012/13 infrastructure rebuild budget is $540.7m, consist of base annual plan ($521.9m) and carry forwards from 2011/12 ($21.6m) and plan changes (-$2.8m) made during the year. The activities are currently forecast to be $56.6m under budget by year end. However, SCIRT have requested an additional $50m for the cashflow for 2012/13 to achieve increased delivery for the year. The actual anticipated overall variance at year end is therefore approximately $6.6m. The March report will reflect the latest forecasts.

Table 3.1 Council infrastructure rebuild activities, actual year to date costs reported against Council budget

FINANCE AS AT 28 FEBRURAY 2013

Council Infrastructure Rebuild Programme

Activity	2012/13 CCC Budget *	Actual Cost YTD	Year End Forecast	Year End Forecast Variance
SCIRT				
Road Network	$ 146,935,000	$ 84,535,246	$ 119,661,935	$ 27,273,065
Wastewater Collection	$ 230,200,000	$ 187,213,643	$ 266,012,596	($ 35,812,596)
Water Supply	$ 55,000,000	$ 15,101,042	$ 26,325,687	$ 28,674,313
Waterways & Land Drainage	$ 23,221,000	$ 6,102,706	$ 23,378,281	($ 157,281)
COUNCIL INFRASTRUCTURE REBUILD PROGRAMME BY SCIRT	**$ 455,356,000**	**$ 292,952,636**	**$ 435,378,499**	**$ 19,977,501**
Non SCIRT				
Road Network	$ 756,542	$ 241,403	$ 764,789	($ 8,247)
Wastewater Collection	$ -	$ 1,637,890	$ 1,637,890	($ 1,637,890)
Parks & Open Spaces	$ 9,754,101	$ 3,839,131	$ 9,754,101	$ 0
Refuse Minimisation & Disposal	$ 5,704,555	$ 2,305,876	$ 7,180,909	($ 1,476,354)
Wastewater Treatment & Disposal	$ 29,398,854	$ 11,287,779	$ 22,181,645	$ 7,217,209
Water Supply	$ 34,425,173	$ 2,129,762	$ 3,430,765	$ 30,994,408
Waterways & Land Drainage	$ 5,269,297	$ 2,132,963	$ 3,755,464	$ 1,513,833
COUNCIL INFRASTRUCTURE REBUILD PROGRAMME BY OTHERS	**$ 85,308,522**	**$ 23,574,804**	**$ 48,705,563**	**$ 36,602,959**
TOTAL COUNCIL INFRASTRUCTURE REBUILD PROGRAMME	**$ 540,664,522**	**$ 316,527,440**	**$ 484,084,062**	**$ 56,580,460**

*** CCC Budget Reconciliation**

2012/13 CCC Annual Plan	$ 521,900,000
Carry Forwards ex 2011/12	$ 21,586,522
2012/13 Approved Plan Changes	($ 2,822,000)
2012/13 CCC Budget	**$ 540,664,522**

3.1.2 Actual year to date costs - Infrastructure rebuild activities being undertaken by SCIRT

Table 3.2 below presents actual year to date costs for Council and NZTA rebuild activities being undertaken by SCIRT. These costs are reported against the SCIRT performance target.

The current SCIRT performance target for the year is $440m +/-1.5%, including Council rebuild activities ($429.1m) and NZTA State Highway rebuild activities ($10.9m). The SCIRT performance target for Council rebuild activities varies from Council annual plan as the target was based on subsequent cash flow forecast.

Table 3.2 Rebuild activities performed by SCIRT, year to date costs reported against SCIRT performance target cashflow

FINANCE AS AT 28 FEBRURAY 2013

Infrastructure Rebuild Programme by SCIRT

Activity	2012/13 SCIRT Performance Target	Actual Cost YTD	Year End Forecast	Year End Forecast Variance
Road Network	$ 105,410,459	$ 84,535,246	$ 119,661,935	($ 14,251,476)
Wastewater Collection	$ 272,979,266	$ 187,213,643	$ 266,012,596	$ 6,966,670
Water Supply	$ 26,872,162	$ 15,101,042	$ 26,325,687	$ 546,475
Waterways & Land Drainage	$ 23,824,220	$ 6,102,706	$ 23,378,281	$ 445,939
NZTA Highways	$ 10,913,892	$ 3,208,300	$ 11,121,502	($ 207,609)
TOTAL INFRASTRUCTURE REBUILD PROGRAMME BY SCIRT	**$ 440,000,000**	**$ 296,160,936**	**$ 446,500,000**	**($ 6,500,000)**

It should be noted that SCIRT have requested an increase in cashflow to $490m for the current year's activity to match the ramp up in delivery. This request can be accommodated within the approved overall annual plan budget for the infrastructure rebuild activities and is supported at officer level by all three client organisations. This increased cashflow for this year is also within the overall infrastructure estimate.

3.2 Overall Infrastructure Rebuild estimate - actual life to date costs

The current estimate for the overall rebuild of the City's horizontal infrastructure is $2.015 billion (excluding contingency and escalation), plus $16.4m project budget not included in the horizontal infrastructure cost estimate. In addition to the above there is an estimate of $25m for NZTA State Highways rebuild. For the purpose of this monthly progress report the current overall estimate reported against is therefore $2.057 billion.

The revised programme estimate has been included in the draft Three-year Plan. The draft Three-year plan budget will be used for reporting going forward in next months report.

3.2.1 SCIRT actual life to date against estimate

Table 3.3 includes the overall life to date costs against the current estimate for the SCIRT performed rebuild of the City's infrastructure. SCIRT is performing $1.7b of Council infrastructure rebuild, plus $25m NZTA Highways rebuild.

Table 3.3 SCIRT Actual life to date costs against estimate

SCIRT

Activity	Description	Current Estimate of Cost *	Actual Cost 2010/11	Actual Cost 2011/12	Actual Cost 2012/13	Total Actual Cost LTD	Forecast Total Spend	Programme Variance
Road Network	Roading	$ 814,857,143	$ 11,812,105	$ 71,944,425	$ 84,535,246	$ 168,291,776	$ 814,857,143	$ -
Wastewater Collection	Wastewater	$ 714,095,238	$ 10,376,296	$ 129,686,110	$ 187,213,643	$ 327,276,048	$ 714,095,238	$ -
Water Supply	Water Supply	$ 128,142,857	$ 1,857,860	$ 35,385,420	$ 15,101,042	$ 52,344,322	$ 128,142,857	$ -
Waterways & Land Drainage	Stormwater	$ 69,000,000	$ 999,542	$ 6,505,956	$ 6,102,706	$ 13,608,204	$ 69,000,000	$ -
NZTA Highways		$ 25,000,000	$ -	$ 2,176,046	$ 3,208,300	$ 5,384,346	$ 25,000,000	$ -
TOTAL		**$ 1,751,095,238**	**$ 25,045,803**	**$ 245,697,957**	**$ 296,160,936**	**$ 566,904,696**	**$ 1,751,095,238**	**$ -**

3.2.2 Non-SCIRT actual life to date against estimate

Table 3.4 includes the overall life to date costs against the current estimate for infrastructure rebuild activities being delivered by Council business as usual mechanisms. This table also includes $16.4m budget from Earthquake Building/Infrastructure Shortfall Allowance for the Waste Water Treatment Plant.

Table 3.4 Non-SCIRT actual life to date costs against estimate

Non SCIRT

Activity	Description	Current Estimate of Cost *	Actual Cost 2010/11	Actual Cost 2011/12	Actual Cost 2012/13	Total Actual Cost LTD	Forecast Total Spend	Programme Variance
Road Network	Roading	$ 77,761,905	$ 848,201	$ 692,114	$ 241,403	$ 1,781,718	$ 77,761,905	$ -
Wastewater Collection	Wastewater	$ -	$ 1,634,066	$ 13,757,590	$ 1,637,890	$ 17,029,547	$ -	$ -
Parks & Open Spaces	Greenspace	$ 56,952,381	$ 611,310	$ 1,835,060	$ 3,839,131	$ 6,285,501	$ 56,952,381	$ -
Refuse Minimisation & Disposal	Solid Waste	$ 8,761,905	$ 2,076,017	$ 3,091,587	$ 2,305,876	$ 7,473,480	$ 8,761,905	$ -
Wastewater Treatment & Disposal	WW Treatment Plant	$ 96,356,381	$ 4,488,038	$ 13,249,043	$ 11,287,779	$ 29,024,861	$ 96,356,381	$ -
Water Supply	Water Supply	$ 24,095,238	$ 4,266,124	$ 830,545	$ 2,129,762	$ 7,226,431	$ 24,095,238	$ -
Waterways & Land Drainage	Stormwater	$ 41,619,048		$ 13,960,259	$ 2,132,963	$ 16,093,222	$ 41,619,048	$ -
TOTAL		**$ 305,546,857**	**$ 13,923,757**	**$ 47,416,198**	**$ 23,574,804**	**$ 84,914,759**	**$ 305,546,857**	**$ -**

4. COMMUNICATIONS

4.1 Strategic Communications

Traffic management has been a media and public interest issue over the past month and communications have included the submission of a perspectives piece to The Press which explains the work involved in traffic management across the city. It also outlines the road maintenance programmes which continue around the rebuild. At the time of writing this report, the piece had not yet been published.

City-wide communications have also been required around the introduction of new low pressure sewer systems to parts of the city affected by liquefaction and lateral spread during the earthquakes. Operational communications and community engagement activities have been extensive in this area and SCIRT estimates that there is six hours of face-to-face contact with every property owner due to have a new system installed on their property. Media interest in this issue has grown over the past month and communications on behalf of the client organisations – in particular the Christchurch City Council – have been required to explain the rationale behind the decision. Coverage has generally been well-balanced and explains the aim of building a stronger network.

The Strategic Communications Plan continues to be rolled out, with talking points being updated monthly and the first of what will be a regular stakeholder memo distributed to key industry and business partners at the end of February. The approved advertising programme, which will show progress on the rebuild, is being booked now and will be rolled out along key city routes and areas from March. Quarterly Community Board updates are continuing again this month, with generally good feedback received.

4.2 Operational Communications

SCIRT has now produced well over 1000 individual work notices which have been distributed to more than 280,000 residences. The team has held nearly 5500 face-to-face interactions and more than 500 meetings.

The community engagement around pressure wastewater systems is a dominant focus for the team. An action group has formed in one catchment although many people are enthusiastic about the system. It should be noted that in other areas objectors are a minority. The communication continues to evolve in response to feedback. Main concerns relate to cost of power supply and location on private property.

Feedback from the latest face-to-face survey of people who live where SCIRT has just finished working shows satisfaction with communication is at 79%. This is slightly down on previous results, but still shows a positive outcome.

The SCIRT Communications Team continues to work closely with the traffic and safety teams to find smart ways to address frustration around traffic impacts.

4.3 Talking points for the month ahead

Specific talking points this month:

- We're making good progress on the rebuild: around 108 projects valued at $361 million are under construction right now and we've already finished 181 projects valued at more than $100 million.
- New low-pressure sewer systems are being introduced to parts of the city affected by liquefaction and lateral spread – this will create a stronger system, better able to withstand future earthquakes.
- The rebuild is ramping up in Christchurch and our roads are busy – safely managing traffic and ensuring people can make their way around the city is a key focus for the rebuild and all agencies involved are working together.
- We're asking motorists to be patient when they drive around the city – there are people working behind the road cones and ensuring their safety is important.

5. ENVIRONMENT

5.1 Key Outcomes

- The consent for the Triumphal Arch (Bridge of Remembrance) was granted.

5.2 Upcoming Priorities

- An application is being prepared for the Ministry for the Environment's Green Ribbon Award for SCIRT's consent process and alignment of environmental stakeholders.
- Auditing environmental KRA data is underway.

5.3 Environmental Statistics

Description	February 2013	LTD
Environmental Hazards	162	1,274
Environmental Opportunities	516	1,406
Environmental Team Initiatives	8	97
Community Organised Events	7	31
Number of Environmental Incidents	62	422
Infringement Notices	-	-
Abatement Notices	-	-
% of waste reduced, re-used, recycled	50%	21%

Data from SCIRT Operational report – March 2013

6. PROGRAMME

6.1 SCIRT Work Activity

6.1.1 Achievement Report

The progress report for this month includes an achievement report which outlines progress made by the construction projects against key metrics for each asset type.

Asset Type	Unit	Network Total	Identified Damaged	Of Total	Completed	Of Damaged	Completed in February
WASTEWATER							
Reticulation	KM	1,613	659	41%	126	19%	14.611
Pump Station	No	164	69	83%	32	24%	-
WATER SUPPLY							
Reticulation	KM	2,843	69	2%	22	32%	1.068
Pump Station	No	107	103	96%	6	6%	**-**
Reservoirs	No	113	113	100%	3	3%	-
STORM WATER							
Reticulation	KM	329	26	8%	7	27%	0.85
Pump Station	No	38	15	39%	2	14%	**-**
ROADING							
Roading	m^2	11,671,807	1,320,375	11%	164,372	12%	5,770
Storm water	KM	621	135	22%	-	0%	-
Bridges	No	224	244	100%	9	4%	-
Retaining Walls	No	490	141	29%	-	0%	-

All data for the SCIRT Work Activity Section was sent from SCIRT – Received March

6.1.2 Number of Ongoing SCIRT Projects

The following table is a summary of the programme pipeline as at February 28th 2013. It shows how many projects and the total value at each stage of the project lifecycle.

Project Lifecycle Stage	January Estimate	February Estimate	January Estimated Construction Cost	February Estimated Construction Cost
Investigation (Asset Assessment)	12	10	$20.9m	$23.8m
Concept Design	125	118	$914.9m	$603.5m
Detailed Design	64	58	$350m	$349.4m
Construction	154	154	$569.4m	$577.8m
Handover	243	248	$114.2m	$23.7m
Grand Total	**589**	**589**	**$1,910.5m**	**$1,665.2**

Data sent from SCIRT – Received March

In the table above, the previous monthly report totals have also been included to show the change in activity.

6.1.3 Ongoing Projects by Ward

6.1.3.1 Introduction

The progress report this month includes a summary of all SCIRT projects that are currently either in detailed design or construction separated on a Ward basis. A separate table has been included specifically for projects either in detailed design or construction within the central city (within the four avenues). This has been created to assist in the coordination with the Central City Recovery Plan and vertical infrastructure rebuild going forward.

For projects in construction – estimated construction cost (Target Outturn Cost) has been included together with actual Life to Date Costs as at the end of February 2013.

6.1.3.2 Burwood / Pegasus

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10620	Pages Rd Bridge	Repair to Pages Rd Bridge, including road network connecting to roundabout on North end of bridge.
10796	NZTA Anzac Bridge Repairs	Ground improvements, removal of landward bridge spans, demolish and rebuild abutments, repair piers, approaches and underpasses
10959	Aranui Catchment NE4 Vacuum Pump Station, Pages Road (WW)	Construction of a vacuum pump station to service the Aranui catchment including an above ground, architecturally designed pump station building, biological filter bed, shared generator building with PS36 and an access road. This pump station is located at the same site as PS36 and has some shared facilities.
10963	Aranui Catchment NE4 Vacuum Arm 4: Marlow Road Subcatchment (WW)	Construction of vacuum sewerage pipes, pits, and laterals (in road reserve only) and connecting up to the new vacuum pump station in Bexley Reserve.
10964	Aranui Catchment NE4 Vacuum Arm 5 and 6: Portchester Street Subcatchment (WW)	Construction of vacuum sewerage pipes, pits, and laterals (in road reserve only) and connecting up to the new vacuum pump station in Bexley Reserve.
10975	NE12 - North New Brighton Wastewater Catchment Repairs (WW)	Repair of the Wastewater network within the North New Brighton area.
10976	NE13 - Beach Road & Bower Ave Wastewater Catchment Repairs (WW)	Wastewater replacement in the Beach and Bower Ave Catchment within Parklands East.
10978	NE13 - Parklands West Wastewater Catchment Repairs (WW)	Wastewater repairs to the Parklands West catchment area.
11020	Keyes Road Catchment - New Brighton and Frosts Road - Roading Stormwater and Water Supply (WS,SW,RD)	Repair of Earthwork damage to Stormwater, Roading and Water Supply for the Areas including Frosts Road, Travis Drive, Bower Avenue, Palmers Road and Baker Street. Stormwater issues may be affected by the adjacent New Brighton Road Project.
11032	Parklands East (RD, SW, WS)	Repairs to roading, stormwater and water supply assets.
11033	Parklands West (RD, SW, WS)	Repairs to roading, stormwater and water supply assets
11034	Parklands South (RD, WS, SW)	Repairs to roading, stormwater and water supply assets
11035	North New Brighton and North Shore (RD, WS,SW)	Repairs to roading, stormwater and water supply assets
11040	PS 56 - Burwood North Wastewater (WW)	Wastewater Repair/Renewal within the Burwood North area

DETAILED DESIGN		
Reference	**Project**	**Project Description**
11041	Burwood East Wastewater (WW)	Replacement of the Wastewater System in the Burwood East Area
11042	Burwood West Wastewater & Trunk Sewers (WW)	Replacement of Wastewater system within the Burwood West Area
11043	Burwood Pressure Main 54 (WW)	Replacement of Pressure Main 54 within the Burwood Area
11045	South New Brighton - Gravity Repairs (WW)	South New Brighton gravity repairs. This has been split out of the original projects 10861 and 10318 scopes.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10314	Keyes Road Catchment (WW, WS)	Repair and/or reinstatement of wastewater system.	26/03/2012	22/04/2013	$9,883,000	$9,412,368
10318	PS37 North Catchment (WW)	Wastewater repairs and renewal for northern half of PS37 catchment. Includes one new pump station and approximately 100 pressure sewer pumps.	30/04/2012	03/07/2013	$5,864,000	$5,585,035
10363	PS 108 Catchment (old PS39 Catchment)	A large waste water catchment of approx 12 streets which all drain to Pump Station 54 in Avondale.	14/11/2011	15/03/2013	$5,307,000	$5,233,047
10416	PS37 (PS)	Repairs to existing PS37, including new pump intakes and repairs to yards.	01/05/2013	17/07/2013	$926,000	$718,843
10429	Estuary Rd Carriageway, PS37 to Bridge Street Catchment (WS,SW,RD)	Repairs to roads, stormwater and water in Estuary Road between Bridge Street and Beatty Street.	01/10/2012	03/07/2013	$1,424,000	$1,356,170
10430	PS28 - Catchment	PS 28 catchment services residential and industrial land loosely bounded by Pages Rd, Cuffs Rd, Wainoni Rd and	24/07/2012	13/12/2013	$15,842,000	$4,663,647

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
		Shortland St in the suburb of Wainoni. Other pockets of land are also serviced including 650 m of Wainoni Rd north of Shortland St and 240 m of Breezes Rd, an area west of Wainoni Rd including a portion of Avonside Dr, Newport St, Tenby Pl and Emlyn Pl, 350 m of Wainoni Rd south of Cuffs Rd and an area south of Pages Rd including Price Pl, 180 m of Kearneys Rd and Mecca Pl. The seismic events caused liquefaction and land settlement throughout the catchment. The pump station is still operational and in a serviceable state. The majority of the network suffered either loss of grade, cracks and breakages or a combination of the two. Therefore a significant proportion, if not all, of the network will need to be replaced.				
10553	Avondale Road Bridge Works (RD)	Retrofit repair to bridge involving new abutments, piles, wingwalls and associated road approaches and services.	24/09/2012	06/09/2013	$2,768,000	$1,314,756
10557	Gayhurst Road Roading (RD)	Design for road reconstruction to repair moderate to severe earthquake damage to carriageway, kerb and channel, and footpaths from Dallington Bridge northwards to Mundys Road. This project will become part of PS108 Catchment Phase 1 Roading, Storm Water and Water Supply. This work follows wastewater repairs/replacement.	16/07/2012	24/05/2013	$2,869,000	$1,622,013
10585	PS25 - Catchment Vacuum Solution (WW)	Wastewater design for Pumping station 25 Catchment. This area includes sections of Banks Ave and Achillies Street that will be diverted into PS 108. This area also includes the Strathmore Gardens area. The majority of the catchment requires replacement of WW lines.	18/03/2013	17/01/2014	$6,578,000	$1,036,919
10694	PS36 Renewal (WW)	New PS36 to replace existing PS36. New station capacity approximately 900 L/S. This project covers all design for the project and construction for above ground activities. A related project covers 2M of below ground construction works required.	22/06/2012	01/07/2013	$12,738,000	$4,743,500
10705	Owles Tce (WW)	Project released from hold March 2012.	06/11/2012	22/11/2013	$7,360,000	$1,553,443

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10724	Bridge St bridge and approaches	Replace damaged bridge abutments and approaches with new structure including roadworks and services reinstatement.	21/08/2012	07/07/2014	$10,021,000	$3,278,977
10765	PS 108 New Pump Station	Minor new pump station.	15/10/2012	15/03/2013	$1,056,000	$915,111
10786	PS 108 Catchment Stormwater, Water Supply and Roading Renewals (SW,WS,RD)	Design for repair (some full reconstruction) of minor to severe earthquake damage to carriageways, kerbs and channels, and footpaths with associated storm water and water supply works in 11 streets situated immediately to the east and west of Gayhurst Rd from McBratneys Rd northwards to Mundys Rd. This work will follow construction of wastewater repairs/replacement.	03/10/2012	22/04/2013	$1,916,000	$1,166,943
10800	PS 108 Phase 2 Waste Water	Detailed Design of remediation works for wastewater catchment 108.	14/08/2012	24/04/2013	$4,542,000	$4,409,253
10801	PS108 Phase 2 Roading and Storm Water Renewals (RD,SW,WS)	Design for repair (some full reconstruction) of minor to severe earthquake damage to carriageways, kerbs and channels, and footpaths with associated storm water and water supply works in 10 streets situated immediately to the east and west of Gayhurst Rd - generally south of Strathfield Ave in the west and McBratneys Rd in the east. This work will follow construction of wastewater repairs/replacement.	15/02/2013	06/06/2013	$2,693,000	$582,990
10802	PS54 Stage 1 - Northern Roading Renewals Incl Breezes Road	Road design for 8 roads in Avondale. New pipe systems are needed in multiple roads requiring asset managers understanding and buy-in. Includes stormwater full dynamic modelling with probable need to restore capacity by optioneering new components (new basin and/or pump upgrading).	10/09/2012	03/10/2013	$3,783,000	$2,271,401
10803	PS54 Stage 1 Southern Roading Renewals (South of Breezes Road)	Road design for Pembroke St and Horton Place in Avondale. A new pipe system is needed on Horton St requiring asset managers understanding and buy-in.	02/07/2012	15/03/2013	$1,145,000	$1,090,791

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10861	New Brighton, South New Brighton & Southshore NE1, NE2 & NE3 Area Rebuild (WW)	Overall Catchment scope to link multiple projects and release projects on hold for a full one pass rebuild of the above area. Includes WW elements. Projects for construction to the value of $15M are expected from this concept study.	02/04/2013	30/03/2015	$15,247,000	$563,878
10896	Minor Works - Demolition of Porrit Park and Snells Footbridges, PS26 and PS27 Pump Stations	Demolition and make safe work for Porrit Park Footbridge, Snells Footbridge, PS26 and PS27. Rebuild of the bridges to be undertaken in separate standard projects.	27/08/2012	11/03/2013	$223,000	$220,416
10898	Minor Works - Medway Footbridge Removal	Removal and make safe of the footbridge. Store off site until a decision is made regarding the structure	11/02/2013	11/03/2013	$82,000	$61,791
10921	North Parade & Banks Ave Wastewater Pressure System (WW)	Separation of catchment works included in 10812, 10585 and 10800 for a defined project area for the construction of a new pressure system.	11/03/2013	27/06/2013	$776,000	$66,460
10926	PM 63 (WW)	The 700mm pressure main 63 will run for 4km generally following the route of Anzac Drive from Parklands to Bexley. It will connect to pump station 63 which is being designed and constructed under the project number 10415.	07/01/2013	20/08/2013	$7,301,000	$2,887,669
10932	PM136 New Pressure Main for PS36 (WW)	Construction of an additional Pressure Main from Pump Station 36 to provide resilience in the system. The existing asset will remain as PM 36 and the new pressure main will be known as PM 136.	11/03/2013	24/10/2013	$4,829,000	$119,288
10965	Aranui Catchment NE4 Pressure Sewerage System - East Avondale (WW)	Construction of a pressure sewerage system including individual pump station units in private property, laterals, boundary kits and pressure mains. The pressure main from the catchment then runs along Anzac Drive and discharges to a new inlet manhole (by others) near the junction of Anzac Drive and Bexley Road.	06/05/2013	05/01/2015	$6,606,000	$122,920

6.1.3.3 Fendalton / Waimairi

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10968	Bridge Repair - Carlton Mill Footbridge - F110 (RD)	Bridge inspection and deign of repairs for damage sustained during earthquakes. Limited geotechnical investigation, analysis and reporting.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10425	Glandovey/Bryndwr Cluster	Design for repair to severe earthquake damage to wastewater and minor damage to carriageways, kerbs and channels, and footpaths (severity yet to be confirmed) storm water and water supply. This cluster incorporates the 9 streets immediately adjacent to and including Glandovey Road between the Wairarapa Stream and Strowan Road	10/12/2012	02/07/2013	$2,856,000	$1,346,292
10485	Merivale WW	Approximately 9km of WW gravity system, one new pump station.	14/05/2012	28/06/2013	$14,270,000	$12,387,067
10575	Papanui Rd - Knowles to May (WW)	The area has been broken into wastewater sub-catchments in order to determine the best catchment wide solution. 10575 therefore includes Browns Rd north of Mansfield Ave, McDougal Ave east of Murray Pl, Murray Pl, Innes Rd between Papanui Rd and Browns Rd, Heaton St east of Circuit St, Papanui Rd between Innes Rd and Mays Rd, approximately 230 m of the eastern end of Knowles St, Weston Rd and Chapter St, Approximately 280 m of the western end of Normans Rd and 150 m of the eastern end of Mays Rd. The seismic events caused some liquefaction and land settlement in parts of the sub-catchment.	17/05/2012	19/03/2013	$5,053,000	$4,812,144

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10595	Wairakei Road (WW)	Replacement of the deep 225 mm sewer main and the construction of new 150 mm sewer rider mains over the deep main. The wastewater works are from Aorangi Street to Idris Road.	02/08/2012	22/04/2013	$1,319,000	$1,256,493
10839	Merivale Catchment RD SW WS	Linked to #10485 for the RD SW and WS elements of the One Pass Projects	18/02/2013	25/07/2013	$883,000	$221,654
10852	Minor Works - Casebrook Block	Minor footpath and pavement repairs	31/05/2012	16/04/2013	$226,000	$90,222
10884	Merivale Pumping Station (PS)	New Pumping station for the Merivale Catchment Project. Linked to Project #10485	02/04/2013	22/07/2013	$895,000	$194,081
10894	Fendalton Bridge Repair Package - Minor Repairs (RD)	Repair of 6 damaged bridges within the general region of Fendalton. The six bridges included are: R131, R133, R137, R148, R153, R166.	18/02/2013	05/04/2013	$180,000	$171,703

6.1.3.4 Central City

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10466	R109 Fitz Twin Bridges	Ground improvements and major structural repair/bridge replacement of twin bridges
10469	R702 Moorhouse Ave Overbridge	Major structural repair works
10952	Central City South of the Avon - Central Core Wastewater (WW)	Repair of the wastewater network within the Central City - Stage 3 of the Implementation Plan
10954	Central City South of the Avon - Eastern Area Wastewater (WW)	Preliminary Investigation and design work within the Central City
10966	Bridge Repair - Armagh Street - R122 (RD)	Bridge inspection and design of repairs for damage sustained during the earthquakes. Limited geotechnical investigation, analyses and reporting.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10401	Moorhouse Brick Barrel 01 (SW)	Repair of a failed stormwater Brick Barrel pipe on Moorehouse Ave under the Colombo St over bridge	28/03/2013	28/05/2013	$486,000	$103,356
10465	F105 Bridge of Remembrance	Major structural repair works	27/06/2013	10/11/2014	$629,000	$207,363
10482	Triumphal Arch	All works related to both temporary bracing to arch to support the structure and all permanent repair works. In CBD, Heritage structure.	02/04/2013	10/10/2014	$3,319,000	$689,456
10844	Central City Pump Station PS2 Catchment (WW)	Repair/replacement of wastewater system in the north west of the CBD. Excludes WW Brick barrel which is considered under Project 10845.	01/02/2013	01/04/2014	$7,230,000	$1,425,758
10845	Central City - Brick Barrel Assessment, Relining and Repairs	Full assessment, relining and repair works for the Brick Barrel Trunk network within the CBD Catchment. Includes all WW and SW Brick Barrels. A separate Project has been created for the Kilmore St Brick Barrel and concept / detailed design should be undertaken in conjunction with this work.	21/05/2012	17/07/2013	$18,687,000	$14,596,486

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10893	Minor Works- Bridge Minor Works Project Package 01 Bridging	Minor repairs to bridges requiring little design input. Project to be led by SCIRT Project Manager and Delivery teams	23/07/2012	02/04/2013	$222,000	$146,470
10936	Fast Track - Central City - New Regent Street Wastewater Repair (WW,WS,SW,RD)	Accelerated repair of the 150 dia WW pipework to provide service to businesses on New Regent Street, an area under development supported by the CCC as a 'Restart' Area.	15/10/2012	15/03/2013	$515,000	$500,883
10985	Central City - Kilmore Street Catchment Area SW Brick Barrel (SW)	Repairs to SW brick barrel along Kilmore Street, from Durham Street to Colombo Street in the north west of the CBD. During Concept, this was part of the Kilmore Street Catchment Area Project (Project #10844).	21/01/2013	25/03/2013	$506,000	$401,510

6.1.3.5 Hagley / Ferrymead (*excludes central city)

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10347	Gayhurst Rd Bridge (BR)	Retrofit repair to bridge involving new abutments, piles, wingwalls and associated road approaches and services.
10563	Retaining Wall Area 2 - Clifton Retaining Walls	Design and delivery of the repairs required to retaining walls.
10564	Retaining Wall Area 2 - Galilee Lane (RW)	Collapsed retaining wall design and repair.
10565	Retaining Wall Area 3 - Seamount Tce Retaining Walls (RW)	Retaining wall design and construction. Includes walls with RAMM id's of: 1207, 1208, 1212, 1213, 1217, 1214, 1216, 1218, 1219.
10795	PS57 McCormacks Bay Rd Pump Station Repairs (PS)	Repairs to building at existing pump station.
10823	St Johns (SW,WS,RD)	Catchment study for a full one pass rebuild of remaining services within the catchment area. Refer to Project 10449 for WW assets in this area.
10827	Mt Pleasant No 3 Reservoir Repairs (WS)	Mt Pleasant Reservoir suffered minor damage during the Christchurch Earthquakes, Initial assessments recommend that the connections between walls and floors/roofs should be investigated as strengthening will probably be required (dowels/ring beams/etc.)
10897	Woolston Ferrymead PS15 Central (WW)	Repair of the gravity trunk sewer network discharging to PS15. PS15 Pump Station rebuild under Project #10832 (Yellow Team)
10907	Site 226 Soleares Ave	Stabilisation of rock face and re instatement of the access road damaged in Feb 2011 earthquake
10916	Bromley & Woolston PS15 North (WW)	Full catchment rebuild - WW Elements
10917	PS15 Bromley & Woolston SE12-SE18 (SW,WS,RD)	Full catchment rebuild - SW,WS and RD elements
10979	CCC - Main Road 3 Laning - Capital Project (RD)	CCC Capital project for the 3 laning of Main Road. To be completed in conjunction with the SCIRT earthquake repair job of10634, and the culvert replacement CCC project 10908.
10996	Avonside Linwood Stage 2 (WW,SW,WS, RD)	One pass approach renewing wastewater, roading and stormwater assets within stage two of the Avonside Linwood Catchment. Standard project resulting from Catchment Studies 10875 and 10876.
10997	Avonside Linwood Stage 3 (WW,WS,SW,RD)	One pass approach renewing wastewater, roading and stormwater assets within stage three of the Avonside Linwood Catchment. Standard project resulting from Catchment Studies 10875 and 10876.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10303	Site 229 Mt Pleasant Rd Retaining Wall (RW)	60m replacement retaining wall and road reinstatement, in Mt Pleasant	13/06/2013	30/09/2013	$458,000	$87,948
10306	PM11 Randolph (WW)	3.6km, 1.2m dia WW pressure main	06/03/2012	01/07/2013	$16,169,000	$15,398,862
10307	173 Maffeys Road Retaining Wall (RW)	Repair of retaining wall in Maffeys Rd, along with associated buried services	08/10/2012	27/06/2013	$1,505,000	$1,399,857
10317	Heberden Ave Permanent Solution (WW)	New gravity sewer diversion to replace broken sewer down Scarborough Cliffs.	09/04/2013	29/04/2013	$506,000	$482,311
10459	Lower Richmond-Stanmore to Fitzgerald (WW)	Approximately 5km of WW, gravity system; requiring 2 new pump stations	20/03/2012	28/05/2013	$11,865,000	$10,505,725
10472	Charleston	Approx 2.9km WW enhanced gravity system, 1 new pump station; 0.3km SW; 8600m2 carriageway reconstruction, and 1830m2 localised repairs	07/05/2012	30/04/2013	$3,738,000	$3,708,544
10483	Lower Richmond (Southern Section) WS,SW,RD	Full reconstruction of intersection (80m), and localised repairs on remaining streets; 86m of SW replacement	11/03/2013	12/06/2013	$316,000	$142,469
10498	Woolston South 1	5km WW gravity system and 1 new pump station with associated rising main, and individual pressure pumps for industrial properties; roading repair works with design for 1 road; approximately 350m new WS, and currently unknown extent of SW	11/02/2013	17/12/2014	$9,734,000	$889,872
10541	PS 11 - Randolf		11/06/2012	16/05/2013	$924,000	$880,189
10548	Gloucester Street	Design for Wastewater, Stormwater, Water & Roading along Gloucester Street between Woodham Road and Avonside Drive. Close to complete replacement of all WW and Roading assets. Stormwater is reasonably intact.	26/06/2012	15/03/2013	$1,415,000	$1,347,780
10578	PS 107	Minor new pump station.	01/11/2012	28/03/2013	$766,000	$729,623
10579	PS5 - Catchment (West of river)	Pump Station 5 catchment originally serviced an area either side of the Avon River at the northern end of	15/10/2012	30/05/2013	$2,422,000	$733,462

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
		Linwood Avenue and south eastern edge of lower Richmond. Pump Station 5 was badly affected in the series of earthquakes. A proposal to split the PS5 catchment either side of the river to enable removal of pump station from close proximity of the river has received informal agreement among CCC Asset and technical representatives. This project relates to the reinstatement of sewer services to the portion of the original PS5 catchment to the west of the Avon River.				
10582	PS8 - Catchment	Design for repair to severe earthquake damage to wastewaster within Pump Station 8 catchment green zone. The green zone is located to the north-west of the Avon River and generally bounded by Flesher Ave to the east and south, Chrystal St to the west and Medway St to the north.	04/02/2013	16/08/2013	$2,974,000	$309,908
10584	PS27 Catchment Area (WW)	Assessment and repairs/relay of wastewater services in the catchment of the old pump station 27 on Avonside Drive.	25/02/2013	12/07/2013	$1,910,000	$774,374
10634	Main Road (Mt Pleasant - Beachville) Sumner Causeway (RD)	Repairs to main road causeway including replacement of estuary seawall and minor cross culverts and carriageway repairs.	01/07/2013	04/11/2013	$1,190,000	$229,044
10680	Clifton No. 4 Reservoir	Repair and retrofit of reservoir.	26/03/2012	28/03/2013	$438,000	$375,263
10799	NZTA Horotane Overpass Bridges (RD)	Propping system between piers, subject to ground investigation results	22/11/2012	27/11/2013	$1,614,000	$314,980
10820	McCormacks Bay Reservoir Stages 3,4 and 5	Tank 1 and 2 and access reinstatement.	01/06/2012	30/09/2013	$1,187,000	$1,130,783
10822	McCormacks Bay Reservoir Stage 2 Walls	Retaining walls and rockfall protection works at reservoir site.	30/01/2012	10/03/2013	$1,549,000	$1,172,691
10841	Charleston Catchment Area	Linked to Project 10472 WW for the RD SW and WS	26/10/2012	11/07/2013	$1,399,000	$577,593

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
	(RD,SW,WS)	elements.				
10843	Lower Richmond Catchment RD SW WS	Linked to #10459 for the RD SW and WS elements of the project	19/02/2013	01/08/2013	$1,495,000	$234,383
10853	McCormacks Bay Reservoirs - Rock Face Protection Work	Rock protection work to facilitate the repairs to the reservoir tanks	07/05/2012	13/11/2013	$1,232,000	$1,189,792
10862	Lower Richmond Pump Stations - Avalon and Haywood	Pump station construction in conjunction with the Richmond project.	16/07/2012	21/05/2013	$1,322,000	$1,039,483
10863	Charleston Waste Water Pump Station	Pumps Station Construction	04/03/2013	26/06/2013	$503,000	$191,897
10895	PM11 Randolph Phase 5 (WW)	All remaining design works for the design and delivery of the 3.6km, 1.2m waste water pressure main. This is a CCC business as usual project and is the fifth phase. Phases one to four are included under project number 10306.	04/03/2013	19/09/2013	$906,000	$285,877
10911	Fast Track - Te Awakura Terrace Stormwater Repairs (SW)	Investigation of this badly damaged asset for repair or potential relining. Due to the condition, this work needs to be fast tracked through the SCIRT process, requested by the CCC.	12/03/2013	24/05/2013	$185,000	$176,589
10931	Retaining Wall - Site 182 & 183 - Glenstrae Road (RW)	Repair of the retaining wall	15/04/2013	18/06/2013	$187,000	$178,000
10980	NZTA - Dyers Road Repairs (Metro Pl to Bridge St) (RD)	Repairs to the State Highway between Metro Place and Bridge Street (through the treatment ponds area).	02/04/2013	25/03/2014	$941,000	$70,901
11022	Emergency Repair - Southern Relief Sewer - Worcester Street (WW)	Emergency Repair for the 1525mm Dia Trunk Sewer. Currently reported by Operational Team as high risk of imminent failure. Depressions forming at road level around manhole. Falls within existing Project Area # 10995	12/04/2013	14/01/2014	$500,000	$316,978

6.1.3.6 Lyttelton / Mt Herbert

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10704	Retaining Wall Area 5 - Dyers Pass Lower to Governors Bay Rd (RW, RD, WW, SW, WS)	Design and delivery of the repairs required to retaining walls, roading, wastewater, stormwater and water supply (one-pass).
10981	Retaining Wall Area 1 - Lyttelton 1A Brittan Terrace (RW)	Design and construction of multiple soil retaining walls from Lyttelton town centre west towards Diamond Harbour Blvd.
11005	Retaining Wall Area 1 - Simeon Quay (RW)	Stabilise face or provide new retaining wall at Simeon Key, Lyttelton

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10394	RW Package 05 - Canterbury Stone Walls (RW)	Project to design three replacement retaining walls on Canterbury Street and one wall on Ripon Street, Lyttelton. The walls are up to 4.5m high and are of high heritage value.	21/05/2012	22/03/2013	$2,134,000	$2,032,511
10399	RW Package 07 - Lyttlelton Stone	Design three replacement retaining walls on London Street, St Davids Street and Ticehurst Road, Lyttelton. The walls are up to 4m high and are of high heritage value. Two of these walls (London Street and St Davids Street) are located within the white zone.	16/08/2012	11/09/2013	$685,000	$651,681
10400	RW Package 08 - Lyttelton on-stone (RW)	Design five replacement retaining walls on London Street, Canterbury Street, Hawkhurst Road and Ticehurst Road. Sections of these walls are of high heritage value. The walls on London Street and Canterbury Street are located within the white zone.	11/06/2012	27/03/2013	$937,000	$892,332
10424	Sumner Rd Retaining Wall L (RW)	Stage one of new 450m long modular block retaining wall.	17/01/2012	20/03/2013	$2,390,000	$2,275,977
10427	035 Cunningham Tce Retaining Wall (RW)	Repair of retaining wall in Cunningham Tce, along with associated buried services	07/05/2012	02/04/2013	$1,965,000	$1,871,742

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10475	Site 079 Coleridge/Dublin St Ret. Walls	200m replacement retaining wall and road reinstatement in Lyttelton	01/05/2013	20/02/2014	$1,607,000	$127,001
10511	RW Package 06 - Selwyn and Ross	Five retaining walls on Selwyn Street and Ross Terrace, Lyttelton. The walls range in height from 1.5m to 3m, and are of high heritage value.	01/02/2013	03/04/2013	$188,000	$181,494
10818	NZTA Norwich & Gladstone Quay State Highway Repair (RD, WW, SW, WS)	Repairs to state highway adjacent to the Port of Lyttelton.	11/02/2013	15/05/2013	$1,102,000	$154,251
10905	Sumner Rd Retaining Wall L - Stage 2 Wall and Stage 1 and 2 Roads (RW, RD)	Stage two of new 450m long modular block retaining wall.	07/01/2013	16/08/2013	$2,054,000	$494,077

6.1.3.7 Riccarton / Wigram

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10831	CCC - PS60 (PS)	Upgrade of pump station 60 and pressure main 60 to ensure increased flows can be managed in the short term.

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10409	Halswell WW Package 03	Repair wastewater along a section of Halswell Rd, O''Halloran Dr, & within private properties behind Muir Ave.	09/07/2012	28/03/2013	$2,232,000	$2,125,276
10768	CCC - Wilmers Road Water Pumping Station (WS, PS)	New water source and pumping station to cater for projected growth in the western area of Christchurch.	30/04/2012	30/04/2013	$4,524,000	$3,949,575
10909	Minor Works - Port Hills Package 01	Minor road repairs within the Port Hills	16/07/2012	11/03/2013	$311,000	$295,898
10920	CCC - PS105 Pump Station (WW, PS)	Construction of PS105, a CCC Capital Works Project. Linked to Project #10793 for critical path construction scheduling.	29/10/2012	28/01/2014	$5,821,000	$2,194,665

6.1.3.8 Shirley / Papanui

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10858	Minor Works - Pump Station Demolition and Repairs (WW)	Minor repair works to slightly damaged Pump Stations that require no major works during the rebuild programme. Demolition of 3 PS buildings to make safe in Red Zones. Project led by the delivery team with a SCIRT Design input and coordination. Close liaison with CCC Operations team (Graeme Black) required throughout the project.
10914	Shirley NW2 Wastewater Gravity Network (WW)	Full catchment rebuild (WW elements)

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10457	Purchas & Madras (Bealey - Edgeware)	WW, SW and roading repairs. Includes traffic calming on Purchas St to conform with IDS and City Plan requirements for Local Road widths.	08/11/2011	30/04/2013	$5,625,000	$5,356,751
10534	Innes & Knowles - subcatchment	The local wastewater reticulation on Innes Rd and Knowles St between Philpotts Rd and Bretts Rd suffered earthquake induced damage during the recent seismic events. Some liquefaction and land settlement was recorded in the area. Investigations continue however much of the network is made up of Earthenware pipe laid during the 1920s and 1930s. This material has not performed well in other areas therefore it is anticipated some form of repair or replacement will be required for the majority of the network.	10/08/2012	18/11/2013	$9,218,000	$5,310,945
10535	Rutland Rd - subcatchment	Wastewater repair along a single street east of Papanui. This project area is lightly to be revised.	10/04/2012	14/03/2013	$1,562,000	$1,490,553
10810	PS7 Catchment Phase 1 Waste Water Renewal	Wastewater network remediation in the Pump Station 7 catchment which is situated in Shirley, centred upon Stapleton's Road and Shirley Road which bisect the catchment. (Area 1 of 4, south of catchment)	28/05/2012	31/10/2018	$4,631,000	$4,040,586
10812	PS7 Catchment Phase 2 Waste Water Renewal	Wastewater network remediation in the Pump Station 7 catchment which is situated in Shirley, centred upon Stapletons Road and Shirley Road which bisect the catchment. (Area 2 of 4, eastern quarter of catchment)	21/05/2012	22/05/2013	$5,460,000	$4,663,499

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10814	PS7 Catchment Phase 3 Waste Water Renewal	Wastewater network remediation in the Pump Station 7 catchment which is situated in Shirley, centred upon Stapletons Road and Shirley Road which bisect the catchment. (Area 3 of 4, north western quarter of catchment)	23/07/2012	25/06/2013	$6,154,000	$4,067,232
10816	PS7 Catchment Phase 4 Waste Water Renewals	Wastewater network remediation in the Pump Station 7 catchment which is situated in Shirley, centred upon Stapletons Road and Shirley Road which bisect the catchment. (Area 4 of 4, central/western quarter of catchment)	11/03/2013	20/12/2013	$3,188,000	$258,034
10886	Innes & Knowles Pump Station 118 and 119 (PS)	New pump station for the waste water reticulation system in the region of Innes Rd and Knowles St. This projects covers the pump station only, with the waste water system being undertaken under the SCIRT project number 10534.	21/01/2013	20/05/2013	$802,000	$360,420
10899	Minor Works - Lower Styx Road & Turners Road	Pavement repairs	08/10/2012	01/05/2013	$182,000	$173,464
10930	PS7 Phase 3 Pump Station Shirley Road (PS)	New wastewater Pump Station in the PS7 catchment which is situated in Shirley, centred upon Stapletons Road and Shirley Road which bisect the catchment (area 3 of 4, north western quarter of catchment).	31/07/2012	16/05/2013	$985,000	$948,685
10935	Colombo Street Wastewater Upgrade and Repair (WW)	The existing 375mm wastewater line along Colombo Street is damaged, and requires replacement. It is proposed that the 375mm wastewater line will be replaced with a 600mm main to also provide the ability to divert flow from the Northern Relief for maintenance, reconstruction and maintenance of service during interruption of service	01/05/2013	02/04/2014	$2,495,000	$69,349
10944	Edgeware Road (WS, SW, RD)	Road and Storm water repair following WW project 10536	23/10/2012	29/05/2013	$2,429,000	$279,183
10974	PS121 and Rising Main - Guild Street (PS7 Phase 4 Catchment PS)	New pump station (PS121) and rising main to service the newly formed PS121 catchment formerly part of PS7 catchment. Linked to project 10816.	21/01/2013	24/04/2013	$477,000	$340,200

6.1.3.9 Spreydon / Heathcote

DETAILED DESIGN		
Reference	**Project**	**Project Description**
10623	Worsleys Rd No.1 and No.2 Resevoir Repair (WS)	Work to reinstate the waterproofness of the roof structures (to prevent ingress of rainwater), and seal gaps between walls and roof structures.
10888	Hillmorton & Hoonhay S-7 (WW)	Full one pass rebuild of this catchment area - Waste Water Element
10889	Hillmorton & Hoonhay S-7 (WS,SW & RD)	Full one pass rebuild of the catchment - Water Supply, Stormwater and Roading Elements

CONSTRUCTION						
Reference	**Project**	**Project Description**	**Estimated Start**	**Estimated Finish**	**Estimated Cost**	**Life To Date**
10310	Milton St and Frankleigh St Wastewater Reconstruction (WW)	Repair of road and all buried services along Milton and Frankleigh Streets, including the section of Lyttelton either side of the intersection	07/02/2013	14/11/2013	$4,353,000	$799,161
10311	Antigua St / Burke St Arterial Roads (WW,WS,SW,RD)	Repair of road and all buried services along Antigua St (between Moorehouse & Brougham) and Burke St (between Selwyn & Montreal)	18/04/2012	17/07/2013	$3,422,000	$3,258,845
10385	Bewdley Evesham and Dellow	Repair of road and all buried services along Bewdley St, Eversham Cres & Dellow Pl.	20/04/2012	08/03/2013	$2,647,000	$2,520,602
10398	Somerfield Package 01 (WW,SW,RD,WS)	Repair and reconstruction of all assets within a small catchment block.	19/11/2012	21/08/2013	$4,130,000	$739,613
10407	St Martins Package 02 (WW,WS,SW,RD)	Repair of road and all buried services within the St Martins loop, north of Centraurus Rd.	20/08/2012	16/12/2013	$8,385,000	$6,141,186

6.1.4 Projects Complete by Ward

The following section outlines the projects within each ward that have been completed since SCIRT was established on 1st September 2011. It includes both a summary of numbers of projects as well as a list of specific projects. It is anticipated that the completed projects for the last quarter will be reported on a monthly basis.

Ward	January Number of Projects	February Number of Projects	January Projects Life To Date Cost	February Projects Life To Date Cost
Burwood-Pegasus	97	98	$44,936,524	$45,696,,072
Fendalton-Waimari	4	4	$388,208	$389,208
Central City	9	9	$7,002,459	$7,043,830
Hagley-Ferrymead	73	73	$27,060,024	$27,112,421
Lyttelton-Mt Herbert	4	4	$599,781	$599,781
Riccarton-Wigram	8	8	$5,218,837	$5,270,384
Shirley-Papanui	23	24	$7,427,102	$10,360,437
Spreydon-Heathcote	19	22	$8,424,623	$11,713,950
Total	**237**	**242**	**$101,057,557**	**$108,459,084**

Data sent from SCIRT – Received March

In the table above, the previous monthly report totals have also been included to show the change in activity.

6.1.4.1 List of Projects Complete by Ward

Ward	Reference	Project	Project Life to Date Cost
Burwood-Pegasus	10312	Rowes/Tomrich Street Watermain	$264,371
	10315	Ferner Street - Emergency Works	$226,236
	10321	PM 51 Emergency Repair	$1,510
	10325	Cresswell Avenue - Watermains (WS)	$148,731
	10327	Pembroke Street	$146,897
	10328	De Ville Place (WS)	$107,810
	10331	PM 39 - Gayhurst Road	$1,600,571
	10332	PM54 - Niven-Avonside	$375,476
	10335	PS54 - Catchment	$6,755,354
	10336	Kingsford & Liggins Streets (Projects 10336 & 10885)	$204,574
	10338	Wainoni Road (WW EW - Ottawa to Avonside)	$908,330
	10339	Woodham Road (Temp Repairs)	$4,219,313
	10340	Ottawa Road Sewer Emergency Repair	$517,444
	10343	PM16 - Oakmont Green	$4,287
	10346	Fleete Street - Emergency Repair	$9,791
	10349	PS39 - Birchfield Avenue WW EW	$234,969
	10351	Ardrossan Street - Temp. Solution	$347,571
	10355	Landy Street	$19,322
	10359	PS54 - Niven Street (WW)	$62,282
	10364	Shortland Street	$345,061
	10366	McBratneys Road - WM	$17,612
	10376	PM 28	$1,499,953
	10384	Pacific_Tedder Watermain Replacement	$529,142
	10421	Estuary Rd Carriageway, PS37 to Bridge Street Catchment (WW)	$2,625,382
	10440	PS 25C	$703,935
	10443	PM 38 Beach Rd	$571,784
	10484	Pump Station 25 connection repair	$8,977
	10532	Cnr Pages & Cuff - Emergency Repair	$2,832,202
	10547	New Brighton Road	$46,450
	10576	PM 106 - Woolley	$4,364
	10577	PS 106 - Woolley	$750,219
	10604	PM 45 (WW)	$324,352
	10605	Sylvia Street watermain (WS)	$134,753
	10606	Chadlington Street Water Mains	$38,448
	10607	PM 37 (WW)	$1,910,857
	10608	PM 35	$1,087,993
	10614	Aldershot Street watermain (WS)	$255,415
	10615	Willryan Avenue Watermain	$241,522
	10616	Flemington and Ascot Ave	$529,188

Ward	Reference	Project	Project Life to Date Cost
		Watermains	
	10617	PM 46	$55,868
	10621	Chartwell Street Water Mains	$385,049
	10638	630 Pages Road 450mm (WW)	$25,397
	10639	23 Leaver Tce WW	$62,983
	10641	Kirner St WW	$21,497
	10645	Inwoods Close 450mm WW	$128,404
	10647	Travis Rd watermains and submains	$217,197
	10649	Corhampton Street watermains and submains	$261,372
	10650	Water Main on Bridge Street Bridge (WS)	$162,633
	10651	Keyes Road Watermain (WS)	$196,262
	10664	Saltaire (Bower to Marriots Rd) (WS)	$69,544
	10665	Sinclair (Keyes to Rawson) - WS	$251,723
	10669	Palmers Road PS Stabilisation	$16,065
	10670	Major flooding Pratt St.	$295,425
	10671	Owles Tce Temp. (WW)	$114,950
	10676	Marine Parade Watermain	$153,534
	10681	Bower Avenue Watermain and Submains (WS)	$475,045
	10682	Briarmont Street watermain (WS)	$88,373
	10683	Cowes St Watermain and Submains (WS)	$107,955
	10684	Gresham Terrace Watermain and Submains (WS)	$161,638
	10685	Inverell Pl Watermain and Submains (WS)	$63,648
	10686	Orrick St Watermain and Submains (WS)	$84,547
	10688	Blake St Watermain (WS)	$344,751
	10689	Pegasus Ave Watermain	$169,225
	10690	Bassett St Watermain (WS)	$225,196
	10691	Falcon St Watermain	$180,732
	10692	Beach Rd Watermain	$138,848
	10695	Allstone Watermain	$90,800
	10696	Marriotts Road Watermain	$36,064
	10700	Hulverstone Drive Emergency Repair	$22,188
	10702	Rawhiti Water Well Stormwater Outfall	$147,524
	10706	Bowhill Watermain (WS)	$150,141
	10708	Rookwood Ave Watermain (WS)	$174,096
	10711	Waitaki St Temp. Sewer	$3,360
	10714	Kate Sheppard Emergency Repair (Barkers Lane Temp Works) (WW)	$187,764
	10723	Merrington Cres Watermain	$184,198

Ward	Reference	Project	Project Life to Date Cost
	10728	Rowan Ave Emergency Work WW	$458,135
	10744	PS 36 Gravity Main (Pages Rd)	$226,756
	10749	Beach Rd Gravity Sewer (WW)	$67,291
	10752	Desal plant long term storage (WS)	$79,908
	10756	PM39 Temp Overland Pipe (PM)	$7,828
	10760	Pages Road	$69,558
	10769	Keyes Pumping Station (WS)	$3,316,544
	10789	Woodham Road Water Supply Pumping Line Renewal	$84,995
	10794	Pratt Street (Keyes Road) Water Main from Pumping Station	$221,724
	10806	Pages & Cuffs Emergency Repair Roading (RD)	$484,878
	10833	Fast Track - PS36 Sewerage Overflow Repairs Pages/Waitaki (WW)	$25,818
	10834	Minor Works - Stage 1 Schools	$7,770
	10838	Minor Works - Banks Avenue	$132,029
	10846	Water Main Replacement Projects Vivan St, Admirals Way, Pine Ave (WS)	$917,753
	10859	CCC - Private Laterals Keyes Road (WW)	$55,311
	10865	Catchment Study - Burwood Rebuild NE8 (WW) - 11040, 11041, 11042, 11043	$309,924
	10873	Catchment Study - PS36 Catchment, Area NE4 split into 10959-65 (WW)	$382,785
	10874	Catchment Study - PS36 Catchment, Area NE4 (RD,SW,WS)	$1,188,357
	10882	Emergency Work - Beatty Street	$221,040
	10903	Catchment Study - Parklands & North New Brighton split into 10975-78 NE12, NE13 (WW)	$531,086
	10904	Catchment Study - Parklands & North New Brighton (RD,WS,SW) spilt to 11032, 11033, 11034, 11035	$922,449
	10928	Emergency Works - Merrington Crescent (WW)	$117,141
	10973	Water Supply - Lamorna Road Renewal (WS)	$73,551
Fendalton-Waimari	10354	Papanui Road - Emergency Work	$54,652
	10480	R126 Monavale Footbridge	$37,775
	10590	Thornycroft Street - Pri4 (WS)	$127,548
	10857	Minor Works - Bridge Minor Works Project Package 02	$169,233
Central City	10445	Fitzgerald Ave Wall and Roading	$5,198,480
	10447	Fitzgerald Ave Temp Sewer Replacement (WW)	$22,117

Ward	Reference	Project	Project Life to Date Cost
	10506	Hagley Syphon	$647,951
	10726	Stormwater Pump Station 203	$44,715
	10764	PM 3 Temporary Repair (Complex Emergency)	$55,524
	10790	Liverpool Street Water Main (CBD)	$115,675
	10867	Fitzgerald Ave Retaining Wall Footpath	$728,437
	10880	Kilmore St Brick Barrel Repair - Emergency Work (WW)	$190,110
	10941	Minor Works - 789 Colombo Street (WS)	$40,820
Hagley-Ferrymead	10301	CCC - Tanner Street Replacement Well (WS)	$15,792
	10319	St Martins Package 01 (WW) Wilsons Rd South, St Martins Rd and Gamblins Rd	$1,387,573
	10326	Retreat Road	$686,204
	10333	PM 57 - Replacement (Stage 2 March)	$2,075,207
	10337	Avonside - WW Trunk Sewer	$205,110
	10341	River Road - Siphon (WW)	$675,890
	10350	Avonside Drive/Retreat - Gravity Sewer Repair	$93,588
	10352	Avonside Drive/Morris Bowie - Gravity Sewer Temp. Solution	$86,006
	10353	294 Avonside Drive - Temp. Solution	$241,562
	10356	Woodham Rd (PS5 east of river)	$3,207,081
	10358	PS57 - McCormacks Bay Rd Sewer Overflow Renewal	$175,999
	10361	PS54 Catchment Temp. Solutions	$925,541
	10362	PS5 - Glade	$545
	10372	Dacre Street	$128,612
	10386	St Andrews Hill Rd Sewer (Major Hornbrook)	$70,183
	10391	Stevens St Watermain	$165,913
	10402	Moorhouse SW BB 02	$73,019
	10403	Barbour St Water (WS)	$147,111
	10406	226 Main Road SW	$4,627
	10411	Clifton Reservoir 3	$405,877
	10417	Upper Balmoral Reservoir	$481,323
	10418	Lyttelton Dyers Road Pump Station (WS, PS)	$7,029
	10422	PM 31 Renewal Works (WW)	$1,598,048
	10428	RW Mt Pleasant Rd Wall 156 (RW)	$240,107
	10431	PS15 Alport	$1,383,442
	10434	PS 12 Smith	$546,893
	10441	Ferry Road 873	$366,749
	10442	PS15 Gould Cres Overflow Structure	$214,274

Ward	Reference	Project	Project Life to Date Cost
	10448	PM 12	$710
	10451	Manning-Ferry	$17,158
	10452	WW No Service Grafton	$134,202
	10454	225 Linwood Ave	$74,062
	10458	31 Stanmore Road	$49,606
	10463	Hamner Street - waste water relay	$72,948
	10471	33 River Terrace	$38,939
	10473	Wickham St Watermain Replacement	$307,303
	10478	F805 McCormacks Bay 1 Footbridge	$10,689
	10479	F806 McCormacks Bay 2 Footbridge	$8,473
	10481	R223 Heathcote Barrage	$9,929
	10496	PS13 Tilford	$10,687
	10497	PS 10 Linwood WW	$14,699
	10499	Saxon Street Waste Water	$15,687
	10537	Patten Street	$638,489
	10539	Brittan Street	$578,080
	10586	PM 107	$273,496
	10609	PM 47	$24,815
	10612	McCormacks Bay Reservoir No 2-2	$1,038,722
	10613	Mt Pleasant Reservoir 2/2	$107,113
	10618	Beachville Road Pressure + Gravity Main	$478,131
	10629	McCormacks Bay Rd WR mains and submains (WS)	$2,191,757
	10644	55 Clark St WW	$1,561
	10666	Head Street - Esplanade to Nayland (WS)	$79,566
	10677	Beachville Watermain (WS)	$250,873
	10679	Moncks Spur No. 3	$281,531
	10687	Wakefield Ave Watermain (WS)	$156,967
	10716	PM 34 Sumner - Replacement	$1,665,142
	10729	WW, Gravity Bridal Path and Cannon	$299,379
	10739	Heberden Ave Temporary Solution (WW)	$109,222
	10746	Ruru Ave Repair PM 11	$42,191
	10747	Bromley Waste Water Treatment	$25,345
	10753	WW No Service Glendevere (WW)	$2,081
	10763	Moncks Bay Walkway - Temp Repairs	$45,416
	10770	Linwood Ave / Humphrys Dr Retaining Wall Emergency Permanent Repairs (RW)	$496,881
	10772	Monks Bay Main Road Emergency Repair (WW)	$15,503
	10779	CCC - Linwood Avenue Water Main	$456,743

Ward	Reference	Project	Project Life to Date Cost
	10782	15 Dunoon Place Emergency Stabilisation / Sewer Repair	$179,641
	10792	Truro Street Emergency Waste Water Sewer Renewal (Van Asch School)	$220,849
	10830	Minor Works - Bridge Minor Works Project Package 01 Roading	$82,626
	10835	Minor Works - Avonside Girls High School	$80,249
	10836	PS27 Catchment Area (RD)	$77,915
	10864	Woodham Road (SW,RD,WS)	$527,044
	10875	Catchment Study - Avonside & Linwood Area CE-5,6,7,9,10,11,12 (WW)	$73,385
	10876	Catchment Study - Avonside & Linwood Area CE5,6,7,9,10,11,12 (RD, SW & WS)	$237,312
Lyttelton-Mt Herbert	10636	Priority Roads - Governors Bay Road Rebuild (RD)	$475,438
	10672	Sutton Quay Retaining wall 441 (RW)	$41,391
	10878	Minor Works - Cunningham Terrace & Sumner Rd Temp Access Works	$37,029
	10940	Retaining Walls - Delivery Plan Area 4	$45,923
Riccarton-Wigram	10309	Halswell Minor Roading Works - All Areas	$338,476
	10380	Halswell WW Package 02	$2,104,576
	10383	PS73 Kennedys Bush	$160,420
	10387	Townshend Crescent Wastewater	$48,809
	10389	Sparks Rd Watermain	$177,705
	10392	Halswell WW Package 1 (WW)	$2,118,825
	10408	Glovers Street water (WS)	$147,859
	10912	Sparks Road Pavement Repairs	$173,714
Shirley-Papanui	10308	Riselaw Street	$92,150
	10313	PM 6 - Harrison St	$221,306
	10322	Ranfurly Street (WS)	$118,878
	10323	Chrystal Street (WS)	$83,953
	10329	Hope Street	$146,273
	10330	Orontes Street - WS	$90,091
	10334	PM 7 - Stapletons Road	$244,594
	10344	Edgeware Road - Emergency Works	$2,931,321
	10345	Nancy Ave / Weston Road	$16,297
	10348	Shirley Road - Wastewater (Emergency Repair)	$8,629
	10369	Orion Street	$41,907
	10435	Temporary Gravity Sewer Lower Styx Road	$1,092,291

Ward	Reference	Project	Project Life to Date Cost
	10437	PM 40 Marshlands	$585,684
	10439	Heyders 29-65 (WW)	$320,151
	10446	Brooklands Roading - Temporary Repairs	$364,289
	10453	PS78 Heyders (PS)	$50,363
	10460	449 Durham Street North	$313,618
	10536	Edgeware Rd - WW	$1,852,116
	10555	Madras Street / Forfar Wastewater	$604,788
	10581	Catchment Study - PS7 (10810, 10811, 10812, 10813, 10814, 10815, 10816, 10817)	$142,399
	10805	Madras Street Road, Storm Water & Water Supply Repairs	$427,650
	10837	Minor Works - Shirley Boys High School	$115,425
	10851	Minor Works - Marshland Road & Belfast Road	$375,231
Spreydon-Heathcote	10320	Murray Aynsley Reservoir 2	$155,007
	10379	Fisher Ave & Eastern Tce Syphon (WW)	$1,441,258
	10381	Rydal St (WW)	$939,464
	10390	Centaurus Rd Watermain	$145,542
	10393	Smartlea WW Emergency Repair	$109,989
	10396	75 Wilsons Emergency Repair	$825
	10397	Glenelg Spur 01	$166,121
	10404	Hollis Ave Water (WS)	$180,545
	10410	Hollis Ave WW	$1,002,820
	10432	PS19 Beckford	$3,201
	10433	PS20 Locarno	$49,164
	10476	F207 Aynsley Tce Footbridge	$23,100
	10477	F212 Sloan Tce Footbridge	$15,899
	10545	PS19 - Syphon	$357
	10597	Huntsbury Reservoir (WS)	$4,684,686
	10717	Colombo St (South) Bridge - Concept only, no construction work undertaken (RD)	$80,730
	10745	CCC - Sydenham Stn Replace Wells (WS)	$236,486
	10755	PS19 Fifield - 171 Fifield - Sheetpiling protection of riverbank	$114,715
	10785	Holliss Ave / Glamis Place - All Services (WW,WS,SW,RD)	$330,787
	10787	Rydal Street Water Supply, Storm Water and Roading Renewals (SW,WS, RD)	$426,085
	10829	CCC - Victoria Reservoir Replacement (WS)	$1,510,716
	10913	Retaining Wall - Site 349 Major Aitken Road (RW,WW,SW,WS,RD)	$96,454

Data sent from SCIRT – Received March

6.2 NON-SCIRT Work Activity

6.2.1 Introduction

The following section of the report included a progress report against infrastructure and other associated rebuild projects that are not being delivered by SCIRT. It includes a report on progress on Greenspace projects, Christchurch Wastewater Treatment Plant and Organics Processing Plant, Burwood Landfill and Water Supply Wells.

6.2.2 Greenspace

Ward	Work Package Number	Project	Description	Number of projects in package	Phase	Estimated Construction Start	Estimated Construction Finish	Estimated Cost
Banks Peninsula Wards	WP0000537	PARKS Marine Structures Repairs	Marine Structures Repairs	13	BUILD	01/08/2011	30/06/2013	$412,000
	WP0000551	PARKS Marine Structures Assessments	Marine Structures Assessments	10	COMPLETE	01/08/2011	30/11/2011	$50,000
	WP0000783	B/P Retaining Walls	Retaining wall repairs in parks and cemeteries on Banks Peninsula	4	INVESTIGATION	01/07/2012	30/06/2013	$241,000
Burwood Pegasus	WP0000251	PARKS CEAF 1.1 Sth New Brighton CAPEX	Hard surface and playground undersurfacing renewals	4	BUILD	01/10/2011	30/06/2013	$227,000
	WP0000257	PARKS CEAF 1.2 B/P CAPEX	Bexley, Avondale and Burwood Parks hard surfacing renewals	3	COMPLETE	01/09/2011	31/10/2011	$100,400
	WP0000258	PARKS CEAF 1.2 B/P OPEX	Hard surface repairs	11	COMPLETE	01/10/2011	29/02/2012	$148,500
	WP0000284	PARKS CEAF 2.6 TRAVIS CAPEX	Hard surface renewals	5	COMPLETE	01/12/2011	29/02/2012	$340,500
	WP0000285	PARKS CEAF 2.7 AVON PARK CAPEX	Hard surface renewals	2	COMPLETE	01/03/2012	30/06/2013	$63,850
	WP0000286	PARKS CEAF 2.8 ESTUARY CAPEX	Hard surface renewals	1	INVESTIGATION	01/03/2012	30/06/2013	$300,000
City wide	WP0000177	PARKS Playground Softfall - CAPEX	Replacement of contaminated softfall to playgrounds	24	COMPLETE	01/08/2011	30/11/2011	$335,755
	WP0000206	PARKS Playground Softfall - OPEX	Repairs to playground undersurfacing	8	COMPLETE	01/08/2011	20/12/2011	$54,200
	WP0000269	PARKS CEAF 2.2 S/P,F/W,R/W,L/M OPEX	Hard surface and minor structural repairs	11	COMPLETE	01/03/2012	31/05/2012	$90,500
	WP0000312	PARKS Hard Surface Nthn & Sthn - OPEX	Hard surface repairs	58	COMPLETE	01/03/2012	30/04/2013	$450,000
	WP0000313	PARKS Hard Surfaces Nthn & Sthn CAPEX	Hard surface renewals	14	COMPLETE	01/03/2012	30/04/2013	$550,000
	WP0000318	PARKS Hard Surfaces Eastern CAPEX	Hard surface renewals	23	BUILD	01/03/2012	30/04/2013	$755,000

Ward	Work Package Number	Project	Description	Number of projects in package	Phase	Estimated Construction Start	Estimated Construction Finish	Estimated Cost
	WP0000321	PARKS Hard Surface Eastern - OPEX	Hard surface repairs	75	COMPLETE	01/03/2012	30/04/2013	$490,110
	WP0000323	PARKS City Wide Turf Repairs - OPEX	Repairs to non sports turf surfaces	110	COMPLETE	01/11/2011	31/05/2012	$390,550
	WP0000357	PARKS Retaining Walls CAPEX	Minor retaining wall renewals	5	BUILD	01/08/2011	30/06/2013	$393,000
	WP0000358	PARKS Retaining Wall Repairs	Minor retaining wall repairs	24	BUILD	01/08/2011	30/06/2013	$336,000
	WP0000376	PARKS Minor Structures CAPEX	Minor structures renewals	8	INVESTIGATION	01/08/2011	30/06/2013	$439,000
	WP0000377	PARKS Minor Structures Repairs	Minor structures repairs	60	BUILD	01/08/2011	30/06/2013	$471,000
	WP0000571	PARKS 2012 Sports Fields Repairs	Repairs to sports turf 2011/12	45	COMPLETE	01/09/2011	31/03/2012	$691,000
	WP0000768	PARKS Mature Tree Replacements	Tree renewals at Hagley Park and Sth Brighton Domain	2	COMPLETE	01/03/2012	30/06/2013	$100,000
	WP0000769	PARKS Port Hills Restoration	Port Hills rock fencing and planting	2	INVESTIGATION	01/07/2012		$200,000
	WP0000205	PARKS Sports Fields Repair - Moderate	Repairs to sports turf	19	COMPLETE	01/05/2011	31/07/2011	$244,000
	WP0000207	PARKS Sports Fields Repair - Minor	Repairs to sports turf	23	COMPLETE	01/05/2011	31/07/2011	$122,550
	WP0000779	Structural	Bridge repairs on Parks City wide	14	INVESTIGATION	01/07/2012	30/06/2014	$919,000
	WP0000780	Regional Parks	Repairs to structures and hard surfaces	6	INVESTIGATION	01/07/2012	30/06/2013	$465,000
	WP0000781	Trees	City wide tree renewals	1	BUILD	01/07/2012	30/06/2013	$500,000
	WP0000782	Ponds	Repairs to small ponds and outflows in parks	2	COMPLETE			$50,000
	WP0000784	Cemeteries - Operational	Repairs and make safe work to headstones in Operational cemeteries	18	COMPLETE	01/12/2011	30/06/2013	$250,000

Ward	Work Package Number	Project	Description	Number of projects in package	Phase	Estimated Construction Start	Estimated Construction Finish	Estimated Cost
	WP0000785	Cemeteries - Heritage	Repairs and make safe work to headstones in Heritage cemeteries	3	INVESTIGATION	01/07/2012	30/06/2015	$250,000
	N/A	On Hold	Projects on hold due to them being in Red Zoned areas, cordons, rock fall risk etc. Depending on land decisions some of these repairs/renewals may become redundant in the future.	141	ON HOLD	TBC	TBC	$6,347,200
	N/A	Port Hill Parks/Tracks Reopening Project	Port Hill Parks/Tracks Reopening	21	INVESTIGATION	TBC	TBC	$2,196,020
Hagley Ferrymead	WP0000252	PARKS Victoria Lake CAPEX	Relining Victoria lake	1	COMPLETE	01/07/2011	29/02/2012	$500,000
	WP0000253	PARKS CEAF 1.3 Hagley Pk/Bot.Gdns CAPEX	Hard surface and playground undersurfacing renewals	5	COMPLETE	01/09/2011	29/02/2012	$228,000
	WP0000254	PARKS CEAF 1.4 Hagley Pk North CAPEX	Irrigation and Turf renewals	2	COMPLETE	01/07/2011	31/07/2011	$30,000
	WP0000263	PARKS CEAF 1.6 H/F CAPEX	Hard surface renewals	5	COMPLETE	01/10/2011	29/02/2012	$230,500
	WP0000264	PARKS CEAF 1.6 H/F OPEX	Hard surface, track and minor structure repairs	20	COMPLETE	01/10/2011	29/02/2012	$142,000
	WP0000265	PARKS CEAF 1.8 BOT. GARDENS CAPEX	Playground undersurfacing repairs	1	COMPLETE	01/10/2011	29/02/2012	$50,000
	WP0000287	PARKS CEAF 2.9 VICTORIA SQUARE CAPEX	Hard surface, track and minor structure renewals	4	COMPLETE	01/12/2012	30/06/2013	$277,000
	WP0000288	PARKS CEAF 2.10 CENTRAL CITY PARKS CAPEX	Hard surface renewals	3	ON HOLD	TBC	TBC	$15,000
	WP0000289	PARKS CEAF 2.10 CENTRAL CITY PARKS OPEX	Hard surface, track and minor structure repairs	10	ON HOLD	TBC	TBC	$19,100
	WP0000767	PARKS	Hard surface renewals	9	BUILD	01/12/2011	30/04/2013	$187,000

Ward	Work Package Number	Project	Description	Number of projects in package	Phase	Estimated Construction Start	Estimated Construction Finish	Estimated Cost
		Sumner/Scarborough Restoration						
Riccarton Wigram	WP0000280	PARKS CEAF 2.5 MONA VALE CAPEX	Hard surface, bridge and wall renewals	5	INVESTIGATION	01/07/2012	30/06/2013	$322,000
Shirley Papanui	WP0000255	PARKS CEAF 1.5 Groynes CAPEX	Car Park, Driveway, Turf, Track and Jetty renewals	6	COMPLETE	01/08/2011	30/09/2011	$96,000
	WP0000256	PARKS CEAF 1.7 Temp Changing Rooms CAPEX	Portable changing facilities for sports parks	2	BUILD	01/02/2012	31/12/2012	$300,000
	WP0000268	PARKS CEAF 2.1 English Park CAPEX	Car Park renewal	1	COMPLETE	01/08/2011	30/10/2011	$247,500
	WP0000277	PARKS CEAF 2.3 S/P OPEX	Hard surface and track repairs	5	COMPLETE	01/03/2012	31/05/2012	$20,500
	WP0000278	PARKS CEAF 2.3 S/P CAPEX	Hard surface renewals	3	COMPLETE	01/03/2012	31/05/2012	$100,000
	WP0000778	Roto Kohatu	Repairs to bankworks at Roto Kohatu Reserve	1	COMPLETE	01/02/2011	30/04/2011	$200,000
Spreydon Heathcote	WP0000279	PARKS CEAF 2.4 S/H OPEX	Hard surface and minor structural repairs	11	COMPLETE	01/11/2011	31/03/2012	$153,615
		ACC: Auckland City Council grant						
		CEAF: Canterbury Earthquake Appeal fund						
		NOTE: Canterbury Earthquake Appeal Fund projects are billed directly to Dept. Internal Affairs.						
		CCC labour costs to design, project manage and supervise these projects are charged to 721/120 codes depending on the asset type						
		Status Summary						
				64	**Investigation**	$3,581,000		
				141	**Build**	$4,437,000		
				505	**Complete**	$6,797,030		
				154	**On Hold**	$6,381,300		
						$21,196,330		

Data from Asset and Network Planning Unit, Christchurch City Council

6.2.3 Wastewater Treatment Plant and Organics Processing Plant

Project	Description	Phase	Estimated Construction Start	Estimated Construction End	Estimated Cost
Clarifiers	C4 - New structural bottom - CIPP repair to influent pipe - Modify Arms to suit new structure. C3 - New structural bottom - CIPP repairs to influent pipe. - Modify Arms to suit new structure C1 - New structural bottom - CIPP repair to influent pipe - Modify Arms to suit new Structure	Complete Complete **Complete**	Nov 11 24 Jan 12 July 12	3 Feb 12 30 June 12 **28 Feb 13**	$9,432,768
Civil & Structural	• Paving • C2 water • Crack repairs to structures. • Reclad Digester 2 • PST & Grit Tank Repairs • SCT Tank Repairs	Complete Complete Complete Complete Complete Construction	Oct 11 Oct 11 April 11 Sept 11 Aug 12 Jan 13	Sept 12 Feb 12 Nov 12 Dec 11 Feb 13 **July 13**	$4,514,760
CWTP Contaminated Sand Disposal Point	• Repair after hours access road & improve for increased traffic movements. • Repair and strengthen dump point into Lagoon 2.	Complete Complete	Oct 12 Oct 12	Jan 13 Jan 13	$1,500,000
Oxidation Ponds	• Transfer structures 1-4 • Transfer Structure 4-5. • Pond banks strengthen and reinstate to design levels. • Estuary outfall structure • Dyers Road transfer structure	Complete Complete **Complete** Complete Construction	Oct 11 Dec 11 Jan 12 July 12 Oct 12	Feb 12 Mar 12 Feb 13 Dec 12 April 13	$16,250,000
Galleries	• South Gallery – drainage and structural *Proposed repair strategy unsuccessful, redesign underway* • North Gallery – drainage & joints • Diagonal Gallery – drainage & joints • Pump Stn A – drainage & joints • Sludge Rm A – drainage & joints	Design Complete **Complete** Design Design	**TBA** June 12 Jan 13 **May 13** **May 13**	**TBA** Jan 13 Mar 13 **Aug 13** **Aug 13**	$1,353,550

Project	Description	Phase	Estimated Construction Start	Estimated Construction End	Estimated Cost
CWTP Trickling Filters Stage 1	• External Repairs to Trickling Filter 1 • External Repairs to Trickling Filter 2	**Design/ Procurement** **Design/ Procurement**	**July 13** **July 13**	**Dec 13** **Dec 13**	**$6,850,000**
Stage 2	• Investigate and repair any damage to Trickling Filter internal structure	Loss Adjusters	2020		
Mechanical & General Repairs	• Digesters 2 • Digesters 1 • Digester 4 • Digester 3 • Digesters 5 • Digester 6 • Buffer Tank • Primary Sedimentation Tanks • Bio- Solids Holding Tank	Construction Construction Investigation Investigation Investigation Investigation Complete Complete Loss Adjusters	Oct 11 Nov 12 **May 13** **Aug 13** **Jan 14** **July 14** Nov 11 June 11 **TBA**	**April 13** **July 13** **Sept 13** **Jan 13** **July 14** **Dec 14** Jan 12 July 12 **TBA**	**$6,600,000**
Organics Processing Plant	• Demolish & Reconstruct Tunnels • Repair & Strengthen Process Hall • Repair Hard Standing	Construction	Mar 12	**Oct 13**	$9,518,133
Facilities	• Laboratory • Control Room • Workshops • Offices/ Cafeteria/ Mtg Room	**Loss Adjusters** **Loss Adjusters** Investigation **Loss Adjusters**	**TBA** **TBA** Feb 13 **TBA**	**TBA** **TBA** June 13 **TBA**	**$6,000,000**
Outlet Structure	• Replace Broken Outlet Pipes • New Outlet Structure • Decommission Broken Pipes	**Loss Adjusters**	**TBA**	**TBA**	$2,300,000
	TOTAL				**$64,319,211**

Data from Project Management Unit, Christchurch City Council

In the table above, the bolded text identifies a change in activity since the previous monthly report.

6.2.4 Burwood Landfill

Project	Description	Material Received (tonnes)	Material Processed (tonnes)	Phase	Estimated Construction Start	Estimated Construction End	Estimated Cost
Burwood Landfill Liquefaction and Infrastructure Rebuild Waste Disposal	• Prepare areas for disposal • Operate and maintain disposal site • Restoration and landscaping • Resource consent application • Consultation documents to affected parties • Consultation Feedback documents to affected parties • Consents granted	**391,620**	**391,620**	Complete Operation Operation Completed Complete Complete Complete	Feb 11 Feb 11 Jan 12 Jan 12 Apr 12 Jun 12 Jul 12	Jan 12 Dec 17 Dec 17 Aug 12 Jul 12 Jul 12 Sep 12	Self Funded
Burwood Landfill Residual Demolition Waste Disposal	• Design of new cell for residual waste • Cell construction • Operate and maintain disposal site • Restoration and landscaping • Resource consent application • Consultation documents to affected parties • Consultation Feedback documents to affected parties • Consents granted	0	0	Complete Construction Construction Design Complete Complete Complete Complete	Oct 11 Mar 12 Mar 13 Jul 17 Oct 11 Apr 12 Jul 12 Jul 12	Jun 12 Mar 13 Dec 17 Dec 17 Aug 12 Jul 12 August 12 Sep 12	To be funded by Transwaste Canterbury
Burwood Resource Recovery Park Demolition Sorting and Processing Facility	• Construct areas for storage of material and associated roading • Design of sorting plant • Construction of sorting plant • Sorting operation • Rehabilitation and landscaping • Resource consent application • Consultation documents to affected parties • Consultation Feedback documents to affected parties • Consents granted	**390,000**	0	Complete Complete Commenced **Testing** Design Completed Completed Completed Completed	Feb 11 Mar 11 Jul 12 Mar 13 Jul 17 Oct 11 Apr 12 Jun 12 Jul 12	Jun 11 Jun 12 Mar 13 Dec 17 Dec 17 Aug 12 Jul 12 Jul 12 Sep 12	To be funded by Transwaste Canterbury
	TOTAL	**781,620**	**391,620**				

Data from City Water and Waste Unit, Christchurch City Council

6.2.5 Wells

The damage to wells has been reported separately from the remainder of the non-SCIRT infrastructure rebuild because much of the wells repair work is reactionary due to the ongoing aftershocks.

Forward programming is limited by the reactionary work and the operational requirements of the water supply network, meaning that each package of work is programmed "on the fly" on a prioritised basis before it is issued.

The programme of work must be kept flexible in order to keep as many damaged wells operational as possible while at the same time moving forward with the repair and replacement programme. Only a limited number of wells can be taken out of service at one time to avoid affecting the demand on water supply network, and to minimise water restrictions.

	January At Ground Level	February At Ground Level	January Below Ground Level	February Below Ground Level	January Totals	February Totals
Total number of active wells					154	154
Wells yet to be repaired+*	31	33	29	29	60	62
Cost Estimate all repairs+	$4,692,000	$4,692,000	$19,313,000	$19,355,000	$24,005,000	$24,047,000
Wells repaired to date+*	71	69	109	111	180	180
Cost to date+	$3,085,467	$3,212,062	$7,297,923	$7,392,271	$10,383,390	$10,604,333

Data from Capital Delivery Team, Christchurch City Council

+ includes replacement wells

* some wells are damaged both at and below ground leve

6. UNIVERSITY OF CANTERBURY - QUAKE CENTRE

General Manager responsible:	General Manager City Environment, DDI 941-8608
Officer responsible:	General Manager City Environment
Author:	Murray Sinclair – CDEM and Rural Fire Unit Manager

PURPOSE OF REPORT

1. The purpose of this report is to seek the Environment and Infrastructure Committee's recommendation to the Council to approve the contribution of funding to the University of Canterbury for the establishment of a Quake Centre.

EXECUTIVE SUMMARY

2. The Council has been approached by the University of Canterbury to contribute to their new Quake Centre.

3. The following information is taken from their prospectus:

"For communities to be resilient to earthquakes their infrastructure must be resilient, and providing this resilience is the responsibility of engineers. New Zealand is in urgent need of the engineering understanding, solutions, and skills that will ensure that its communities are better prepared for a major earthquake. The University of Canterbury Quake Centre (UC Quake Centre) aims to lead this initiative to build resilient communities. It will achieve this goal by acting as a catalyst for the collaborative efforts of industry, government and academia in the field of earthquake engineering. It is only through the integrated and coordinated activities of such partners that rapid and robust progress towards a resilient New Zealand will be made. The UC Quake Centre will provide a national hub that will:

(a) foster collaboration between industry and academia through:

(i) joint research projects, inspired by the needs of industry and tackled through the coordinated efforts of researchers, and practitioners.

(ii) providing the opportunity to broaden the application of earthquake engineering to the built infrastructure in areas not well researched or addressed in the past.

(iii) the provision of an environment that encourages engagement between researchers, practitioners, and visiting international experts, and enables the exchange of ideas and the discussion of solutions, and

(iv) the rapid dissemination of the latest research results to industry.

(b) deliver professional training that meets the needs of industry and provide access to high level postgraduate qualifications in earthquake engineering that caters for working industry professionals as well as full time students.

(c) provide modern earthquake engineering testing facilities that will support both ongoing research projects as well as commercial testing requirements.

(d) engage with our communities so that they are better able to understand issues associated with seismic risk and how engineers contribute to their community's resilience to earthquakes. Public lectures, outreach to schools and provision of information to the popular press are some of the ways in which this engagement will be forged."

4. The UC Quake Centre requires partners to achieve its ambitious goals. It requires research partners from New Zealand and overseas who will add to its expertise in earthquake engineering and contribute to its research programmes. It requires a partnership with government that will deliver the infrastructure and research funding to be able to deliver its long-term research goals.

6 Cont'd

5. The UC Quake Centre also requires partners from industry who will contribute their expertise and experience and who will provide the financial support needed to drive this collective vision for addressing New Zealand's pressing problems in earthquake resilience.

6. Partnership with the UC Quake Centre implies a high level of engagement either through financial investment, joint activities, exchanges or delivery of Centre outcomes. Partners will be significant organisations both within New Zealand and overseas. Partners will be listed on the UC Quake Centre's website and highlighted in promotional material.

7. There are two types of partnerships:

   (a) **Industry Partner:** An industry partner is an organisation that has chosen to make a financial investment in the Centre with that investment providing the partner with industry driven projects aimed at public good outcomes.

   (b) **Network Partner:** A network partner is an organisation, typically a national or international university or research agency that contributes resources other than financial to the Centre.

8. The financial investment being sought to become an Industry Partner is $25,000 per year for the first five years. Budget provision has not been included within the draft 2013-22 LTP as the approach by the University of Canterbury for financial support came after the current Activity Management Plan process was completed. In order to provide financial support for the UC Quake Centre it is proposed that there be a budget overspend in 2012/13, 2013/14 and 2014/15 to meet the annual contributions. Funding for the Quake Centre in years 2015/16 and 2016/17 will be included as part of the 2015-25 LTP process.

9. Council Officers believe that this initiative will provide benefits for Council and the community. For example the development of guidelines for upgrading key infrastructure such as utility lifelines.

FINANCIAL IMPLICATIONS

10. There is no budget provision included in the draft 2013-22 LTP.

Do the Recommendations of this Report Align with 2009-19 LTP budgets?

11. No.

LEGAL CONSIDERATIONS

12. Not applicable.

Have you considered the legal implications of the issue under consideration?

13. Not applicable.

ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS

14. Page 178, 2009-19 LTP.

Do the recommendations of this report support a level of service or project in the 2009-19 LTP?

15. Relevant hazards and risks are identified and managed in the City's District and Civil Defence Emergency plans.

6 Cont'd

ALIGNMENT WITH STRATEGIES

16. Aligns with the following:

- National Civil Defence Emergency Management Strategy:
- Principle Two: A transparent and systematic approach to managing the risks from hazards;
- Principle Three: Addressing the consequences of hazards.

Do the recommendations align with the Council's strategies?

17. As above.

CONSULTATION FULFILMENT

18. Not applicable.

STAFF RECOMMENDATION

It is recommended that the Environment and Infrastructure Committee recommend that the Council:

(a) Become an industry partner of the University of Canterbury's Quake Centre.

(b) Agree to provide financial support of $25,000 per annum from 2012/13 to 2017/2018.

(c) Note that this is unbudgeted expenditure in 2012/13.

7. REPAIR AND REPLACEMENT OF COUNCIL-OWNED RETAINING WALLS

General Manager responsible:	General Manager, City Environment Group DDI 940 8608
Officer responsible:	Unit Manager, Democracy Services Unit
Author:	Ian Thomson, Solicitor

PURPOSE OF REPORT

1. To recommend the delegation of authority to the Council Hearings Panel to:

   (a) hear and determine objections lodged under schedule 12 of the Local Government Act 2002 in respect of new provisions in s. 181 of the Local Government Act 2002 regarding Council owned retaining walls; and

   (b) deal with appeals to the District Court made by objectors aggrieved by Council determinations made pursuant to (a) above.

EXECUTIVE SUMMARY

2. The rebuild of infrastructure in greater Christchurch includes the repair and replacement of retaining walls damaged in the earthquakes and aftershocks.

3. The Stronger Canterbury Infrastructure Rebuild Team (SCIRT) has developed a programme for carrying out this work.

4. SCIRT has estimated that there are approximately 2600 retaining walls that are owned by the Council and which support in-ground services such as water, sewer, footpaths and roads.

5. Of 700 walls assessed so far, between 400 and 500 will require repair or replacement. Currently 36 of these are between the detailed design phase and construction.

6. SCIRT and Council staff have embarked upon a process of communication with the owners and occupiers of properties that are adjacent to Council owned walls.

7. The work may involve contractors going on to private land for the purpose of carrying out the proposed work. Currently the power to do so isn't available to the Council.

8. This has been addressed by the making of an Order in Council on 4 March 2013. This will come into effect on 4 April 2013.

9. The Order will give the Council the same rights in respect of Council owned retaining walls as it currently has for other works in section 181 of the Local Government Act 2002. More detail is provided in the legal considerations section of this report.

10. Section 181 of the Act provides a procedure for dealing with any objections to proposed works. The Council must either have obtained the prior written consent of affected property owners or complied with the requirements of schedule 12.

12. For the same reasons as set out in the report on the hearing of objections under Schedule 12 for the installation of low pressure pump sewer systems the Council needs to delegate to the Council Hearings Panel the power to hear and determine objections in relation to notices issued under Schedule 12 for entry onto private land to repair or replace retaining walls.

LEGAL CONSIDERATIONS

13. The Order in Council modifies section 181 of the Local Government Act 2002 by adding the following provisions:

   (a) the Christchurch City Council may construct works on or under private land or under a building on private land that it considers necessary for the support and stability of public land or public infrastructure by means of retaining walls; and

7 Cont'd

(b) the Christchurch City Council may enter private land to inspect, alter, renew, repair or clean any retaining walls owned or constructed by the Council.

14. This means that the Council now has available to it the same rights in section 181 that currently exist in respect of other works.

15. The Council will still have to either obtain the written consent of an affected property owner before commencing any works, or comply with the requirements of schedule 12 of the Act. This provides for a right of objection to the Council and appeal to the District Court.

16. As indicated earlier, SCIRT and Council staff have been consulting extensively with property owners. Currently this has involved negotiating easements for any work, such as underground anchor bolts, being constructed on private property.

17. The effect of the Order in Council will be that easements will no longer be necessary for this work. However detailed 3D drawings of the works undertaken and where they are situated will be retained on property files and noted on LIMs.

18. It is recommended that the Transport and Greenspace Manager be delegated the authority to commence the process specified in schedule 12 and to make decisions with regard to the Council's response to and the conduct of District Court proceedings in which the Council is involved.

19. These recommendations are the same as those sought for dealing with the installation of low pressure pump sewer systems on private land.

STAFF RECOMMENDATION

That the Environment and Infrastructure Committee recommend that the Council delegates to:

(a) The Transport and Greenspace Manager, the authority to commence the Schedule 12 process by:

(i) depositing for public inspection descriptions of the proposed works to be completed for the support and stability of public land or public infrastructure by means of retaining walls and plans showing how they would affect any land or buildings;

(ii) taking the appropriate steps to effect the service of notices in writing of Council's intention to construct the proposed works;

(b) The Council Hearings Panel the power to hear and determine objections in respect of retaining walls made under, Schedule 12 of the Local Government Act 2002; and

(c) The Transport and Greenspace Manager the authority to make decisions on the Council's behalf in respect of any appeals to the District Court.

8. DELEGATED AUTHORITY TO GENERAL MANAGER CITY ENVIRONMENT GROUP AND GENERAL MANAGER STRATEGY AND PLANNING TO LODGE A NOTICE OF REQUIREMENT PURSUANT TO SECTION 168A OF THE RESOURCE MANAGEMENT ACT FOR THE WIGRAM – MAGDALA ROAD LINK

General Manager responsible:	General Manager City Environment Group, DDI 941- 8281
Officer responsible:	Unit Manager, Asset and Network Planning
Author:	John Edmonds, Project Manager

PURPOSE OF REPORT

1. The purpose of this report is to:

   (a) Inform the Environment and Infrastructure Committee and the Council of the Resource Management Act 1991 notice of requirement process for the Wigram – Magdala Link and the Council's dual role in that process; and

   (b) Seek delegated authority for the General Manager City Environment Group and General Manager Strategy and Planning to lodge a notice of requirement (NoR) pursuant to Section 168A of the Resource Management Act 1991 (the Act) for the proposed construction of the Wigram – Magdala Link. The details of the link are shown in **Attachment 1**. Without this delegated authority to approve the lodgement the notice of requirement (i.e. to start the notice of requirement process); approximately six weeks would be added to the project which currently has a tight schedule.

EXECUTIVE SUMMARY

2. The Greater Christchurch Urban Development Strategy (UDS) has identified south west Christchurch as a major urban growth area, and this is accelerating since the earthquakes.

3. The Christchurch to Rolleston and Environs Transportation Strategy (CRETS) and the South West Area Plan Transport Assessment (SWAPTA) identified Wigram Road as one of the new arterial corridors linking the south west with more central part of the city.

4. The Wigram-Magdala Link was included in the 2009-2019 LTCCP and was programmed for implementation from 2010/11 to 2012/13. The redirection of resources following the major earthquakes, has resulted in reprogramming of the project and then updated in the 2012/13 annual plan and will be included in the draft 2013 - 16 LTP.

5. The Christchurch Transport Strategic Plan, 2012, confirms this link as a new minor arterial between the south west and more central parts of the city.

6. On 14 March 2013 the Council approved the scheme, as recommended by the Riccarton / Wigram Community Board and Spreydon / Heathcote Community Boards.

7. An NoR for a designation, pursuant to section 168A of the Act, is under development by staff to enable the statutory authorisation under the Act for the construction of the link. A designation is a notation and/or overlay in the Operative Christchurch City District Plan that:

   (i) signals to the community that requiring authority intends to construct the works thereby enabling the community to take that into account when planning its own activities; and

   (ii) requires landowners within the designated area to seek the requiring authority's approval to use the designated land in a way that would hinder the future public work; and

   (iii) authorises the requiring authority to undertake works within the area of the designation that would normally need to be authorised by a resource consent (or consents). This 'authorisation' is subject to subsequent approval, by the territorial authority, of an outline plan of works for the specific works. However if sufficient details of the works have been included in the notice of requirement then the need for a subsequent outline plan can be waived. It is expected that the notice of requirement that is under development by staff will include sufficient detail to warrant the waiver of requirement for outline plan approval.

8 Cont'd

8. The standard process for dealing with the notice of requirement is for the territorial authority to publicly notify the NoR[1], receive submissions on the notice of requirement, hear submissions from those persons who want to be heard, and make a recommendation back to the requiring authority. That recommendation can be to:

   (a) confirm the requirement

   (b) modify the requirement

   (c) impose conditions

   (d) withdraw the requirement.

9. The requiring authority can then decide whether to accept or reject in whole or in part the recommendations. The territorial authority and any submitters on the NoR can appeal the decision of the requiring authority to the Environment Court.

10. The Council is deemed by Section 166 of the Act to be a requiring authority. The Act also provides that NoRs are normally[2] processed by the territorial authority in whose jurisdictional area the works are located (i.e. this Council's administrative area). Section 168A of the Act authorises the Council to lodge a notice of requirement for a designation with itself.

11. Notices of requirement are processed by the Resource Consents and Building Policy Unit of the Council. Resource consent applications for under the Regional Plan are processed by Environment Canterbury. Notices of Requirement do not override regional resource consent requirements. The notice and resource consent applications have been developed by the Asset and Network Planning Unit with in put from other units like the Strategy and Planning Unit. Other than providing advice on what is expected in an NoR application the Resource Consents and Building Policy Unit have not developed the NoR. Nevertheless, any public submissions and the report on those submissions from the Resource Consents and Building Policy Unit with recommendations on the notice of requirement will be heard by an independent commissioner appointed by the Resource Consents and Building Policy Unit. Any recommendation of the Commissioner will be reported back to the Council through the Planning and Regulatory Committee for final adoption by the Council.

12. The Council has not delegated the power to lodge a notice of requirement or resource consent applications on behalf of the Council to any officers of the Council. The Council is being asked to delegate to the General Manager City Environment Group and General Manager Strategy and Planning the authority to prepare a notice of requirement and resource consent applications for the Wigram – Magdala Link works and lodge the notice with the Resource Consents and Building Policy Unit of Council and the Resource Consent Applications with Environment Canterbury to be processed under the provisions of Part 6 and Part 8 of the Resource Management Act 1991.

FINANCIAL IMPLICATIONS

13. The Council has approved or signalled expenditure on the Wigram – Magdala Link in the LTP and Annual Plans. The recommendations in this report are in accordance with that planned expenditure.

14. Yes.

[1] There are provisions in the Act for non public notification, but in the circumstances of these works this course is unlikely.

[2] In some instances notices of requirement can be 'called in' and heard by Environmental Protection Authority of Central Government.

8 Cont'd

LEGAL CONSIDERATIONS

15. The notice of requirement process as set out in Part 8 (Sections 166 – 198) of the Resource Management Act 1991 must be followed when preparing, lodging and processing a notice of requirement. This report outlines the sections of the Act relevant to the consideration of this matter.

ALIGNMENT WITH LTP AND ACTIVITY MANAGEMENT PLANS

16. The project for which the notice of requirement is required, is identified in the Planned Capital Programme of the LTCCP 2009-19 (Volume 1, p.247); the Annual Plan 2012-13 (p. 89); and the draft Three Year Plan 26-27 February 2013 (Appendix 6, p.85).

17. It also aligns with the Council's community outcomes for safety and community – a safe city; a city of inclusive and diverse communities; a city of people who value and protect the natural environment; a well governed city; a prosperous city; a healthy city; a city for recreation, fun and creativity; an attractive well-designed city

Do the recommendations of this report support a level of service or project in the 2009-19 LTCCP?

18. As above.

ALIGNMENT WITH STRATEGIES

19. The project scheme plan is also aligned with the following strategies:

    (a) Urban Development Strategy (UDS)

    (b) Christchurch Rolleston Environs Transport Strategy (CRETS) 2007

    (c) South West Area Plan Transport Assessment (SWAPTA) 2008

    (d) Christchurch Transport Strategic Plan (CTSP) 2012

    (e) New Zealand Land Transport Strategy.

20. The scheme is not fully consistent with the requirements for arterial roads as defined within the City Plan, because of the bridge and approach road widths, and the exclusion of parking.

CONSULTATION FULFILMENT

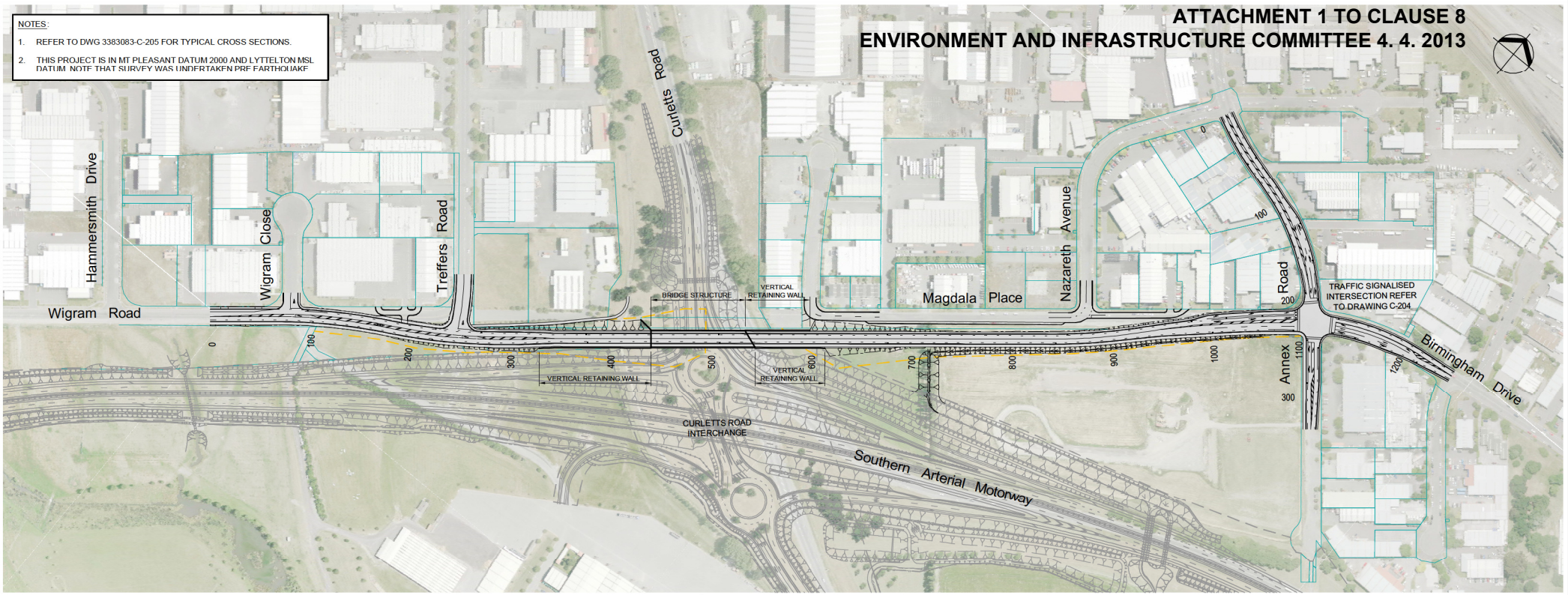
21. Staff have consulted with the relevant community boards and the boards' recommendation was considered by the Council on 14 March 2013. Staff have also consulted land owners and other potentially affected parties whilst developing the draft notice of requirement.

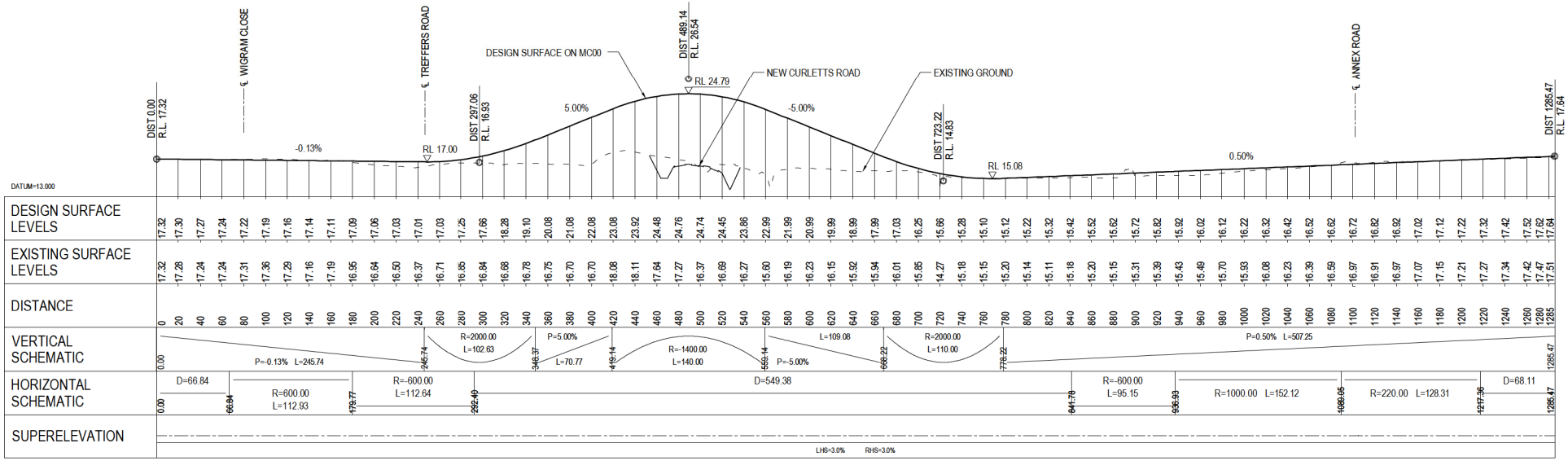
STAFF RECOMMENDATION

It is recommended that the Environment and Infrastructure Committee recommend that the Council delegate to the General Manager City Environment Group and General Manager Strategy and Planning the authority to prepare a notice of requirement and resource consent applications for the Wigram – Magdala Link designation and lodge that notice and resource consents with the Resource Consents and Building Policy Unit of Council, and where appropriate Environment Canterbury, to be processed under the provisions of Part 6 and Part 8 of the Resource Management Act 1991.

NOTES:

1. REFER TO DWG 3383083-C-205 FOR TYPICAL CROSS SECTIONS.
2. THIS PROJECT IS IN MT PLEASANT DATUM 2000 AND LYTTELTON MSL DATUM. NOTE THAT SURVEY WAS UNDERTAKEN PRE EARTHQUAKE





LONGITUDINAL SECTION ON CONTROL STRING MC00

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FOR INFORMATION
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
A	FOR INFORMATION	MJD	RAW	RJH	29.08.11

Drawing Originator: Beca

Original Scale (A1) 1:2000	Design	MJD	12.05.11
Reduced Scale (A3) 1:4000	Drawn	MJD	12.05.11
	Dsg Verifier		
	Dwg Check		

Approved For Construction* Date

* Refer to Revision 1 for Original Signature

Client: CHRISTCHURCH CITY COUNCIL · YOUR PEOPLE · YOUR CITY

Project: WIGRAM MAGDALA LINK BRIDGE SAR

Title: PLAN AND LONGSECTION

Discipline: CIVIL

Drawing No.: 3383083-C-200

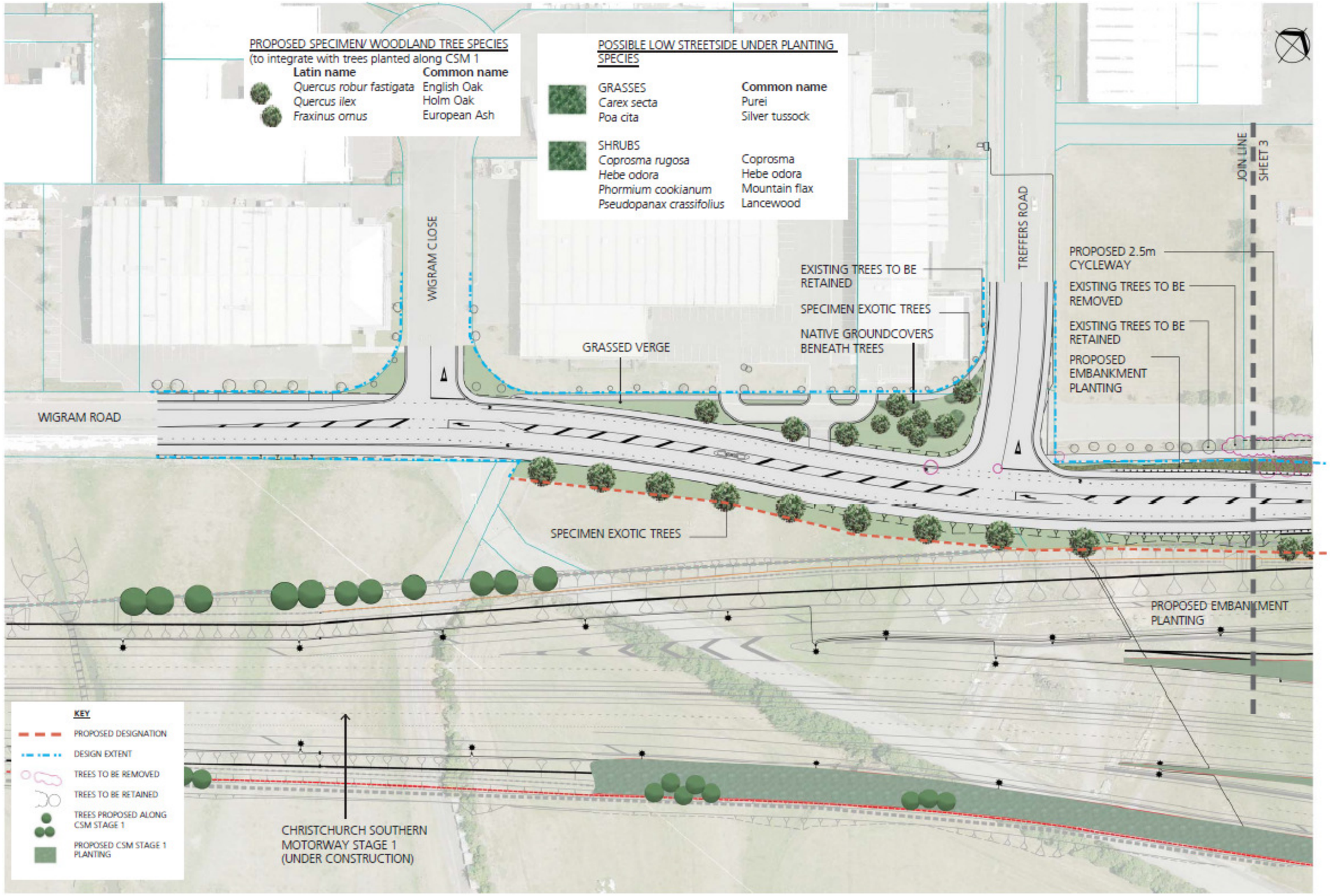
Rev.: A

DO NOT SCALE

www.beca.com
Document No. 3383083-C-200.dwg

Wigram-Magdala Link Draft Scheme Plan

August 2012



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DSG VERIFIER		
DWG CHECK		

REVISION	0
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REDUCED SCALE (A3)	1:1000

CLIENT: Christchurch City Council

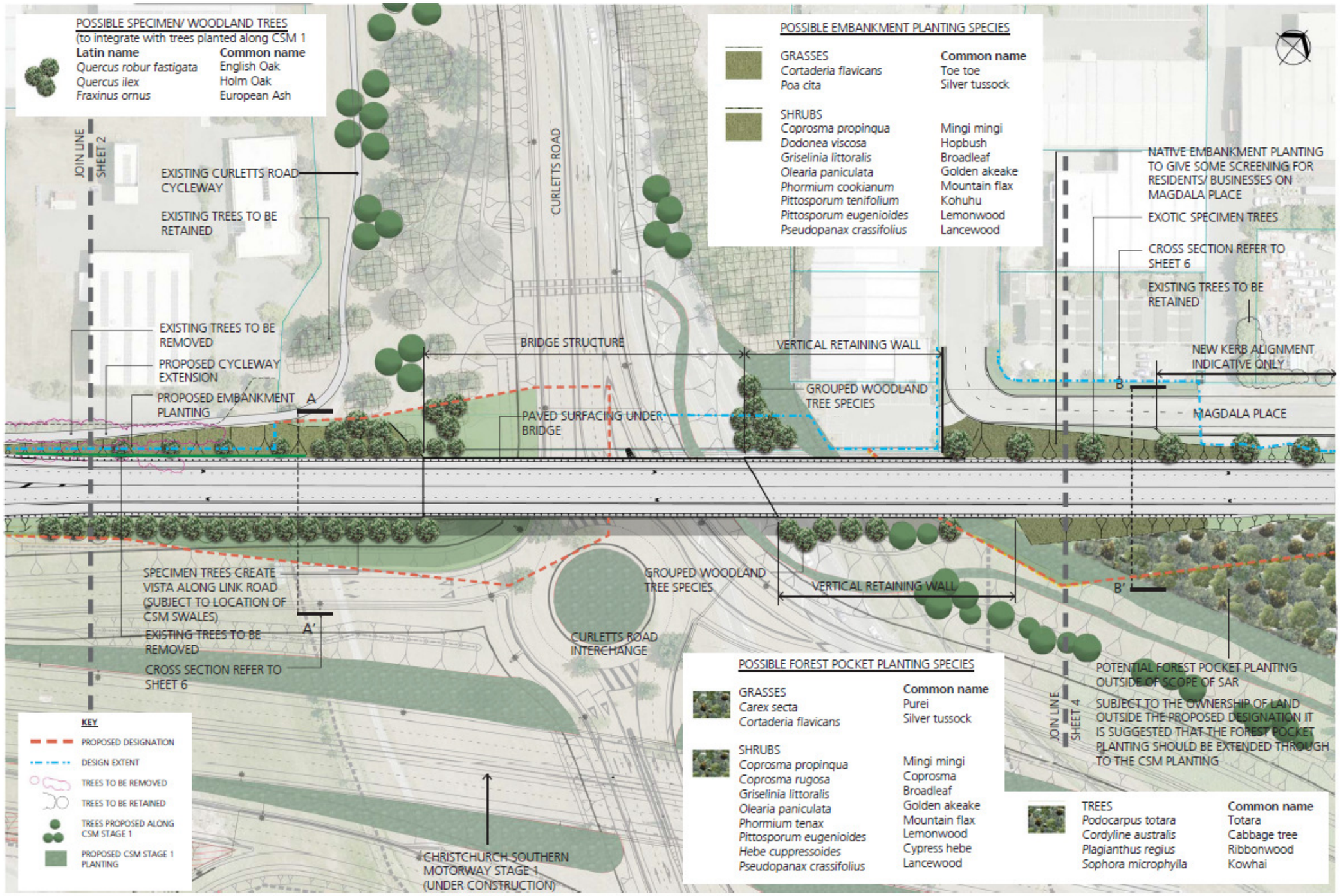
PROJECT:
WIGRAM MAGDALA LINK BRIDGE SAR

TITLE:
SAR LANDSCAPE PLAN SHEET 2 OF 7

Beca

Wigram-Magdala Link Draft Scheme Plan

August 2012



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REDUCED SCALE (A3)	1:1000

CLIENT: Christchurch City Council

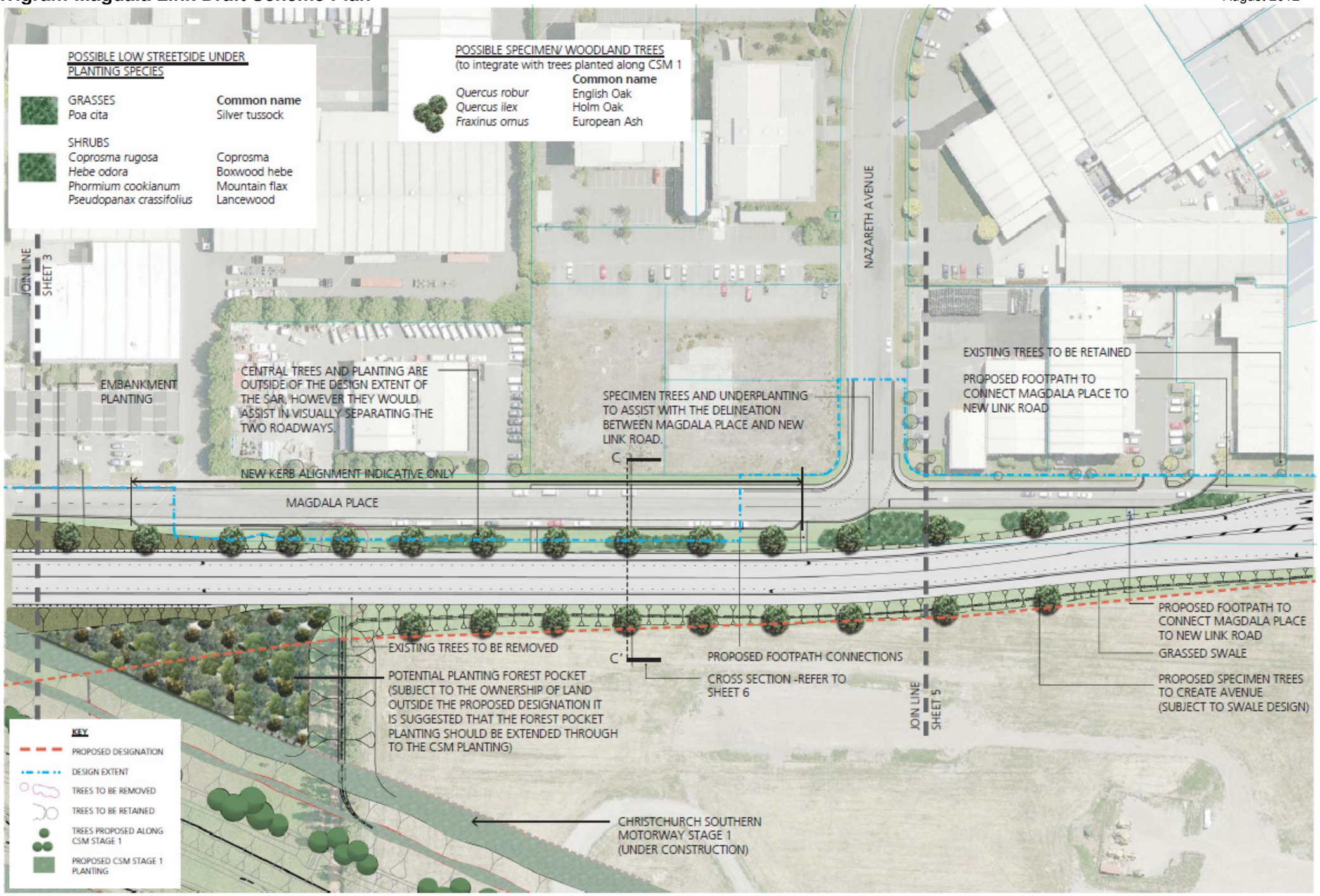
PROJECT: WIGRAM MAGDALA LINK BRIDGE SAR

TITLE: SAR LANDSCAPE PLAN SHEET 3 OF 7

Beca

Wigram-Magdala Link Draft Scheme Plan

August 2012



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REVISION	0
ORIGINAL SIZE SCALE (A1)	1:500
REDUCED SCALE (A3)	1:1000

CLIENT: Christchurch City Council

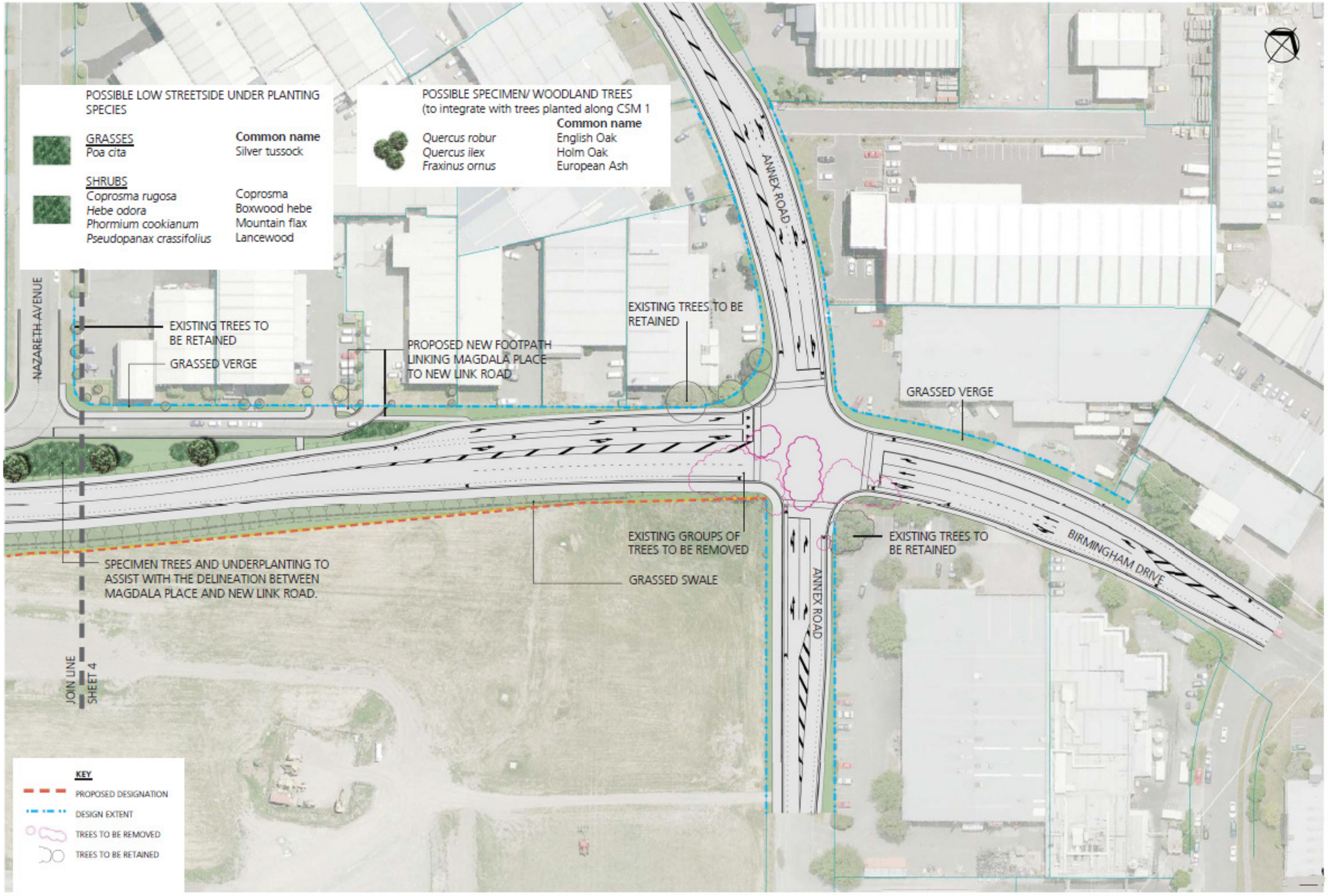
PROJECT: WIGRAM MAGDALA LINK BRIDGE SAR

TITLE: SAR LANDSCAPE PLAN SHEET 4 OF 7

Beca

Wigram-Magdala Link Draft Scheme Plan

August 2012



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DSG VERIFIER		
DWG CHECK		

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REDUCED SCALE (A3)	1:1000

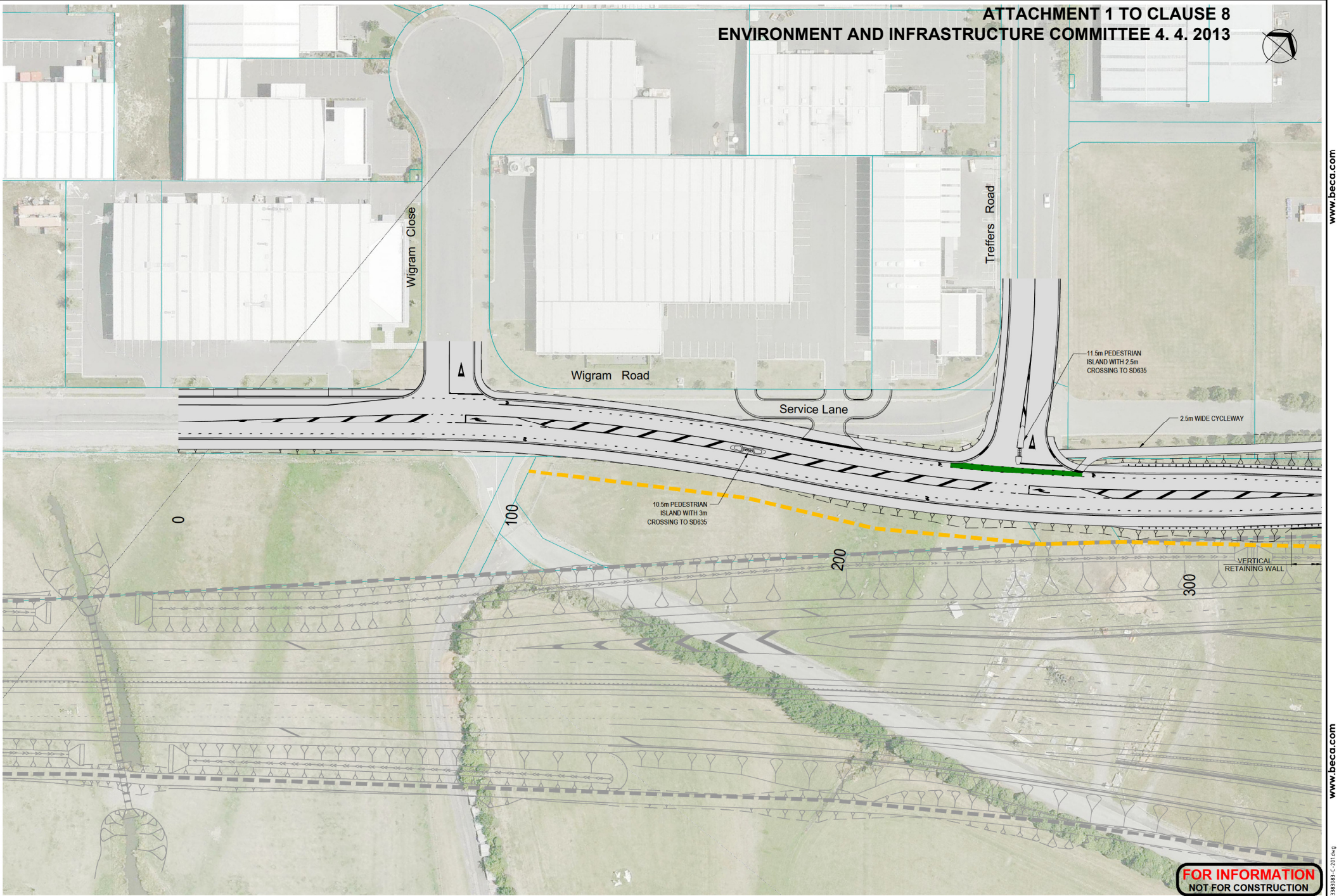
CLIENT: Christchurch City Council

PROJECT: WIGRAM MAGDALA LINK BRIDGE SAR

TITLE: SAR LANDSCAPE PLAN SHEET 5 OF 7

Beca

ATTACHMENT 1 TO CLAUSE 8
ENVIRONMENT AND INFRASTRUCTURE COMMITTEE 4. 4. 2013



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C	FOR INFORMATION	JAL	JDS	DGA	05.11.12
B	FOR INFORMATION	CMD	JS	RJH	20.09.12
A	FOR INFORMATION	MJD	RAW	RJH	29.08.11

Drawing Originator: Beca

Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

Design	MJD	12.05.11
Drawn	MJD	12.05.11
Dsg Verifier		
Dwg Check		

Approved For Construction* Date
* Refer to Revision 1 for Original Signature

Client: CHRISTCHURCH CITY COUNCIL · YOUR PEOPLE · YOUR CITY

Project: WIGRAM MAGDALA LINK BRIDGE SAR

Title: LAYOUT PLAN SHEET 1 OF 4

Discipline: CIVIL

Drawing No.: 3383083-C-201 Rev.: C

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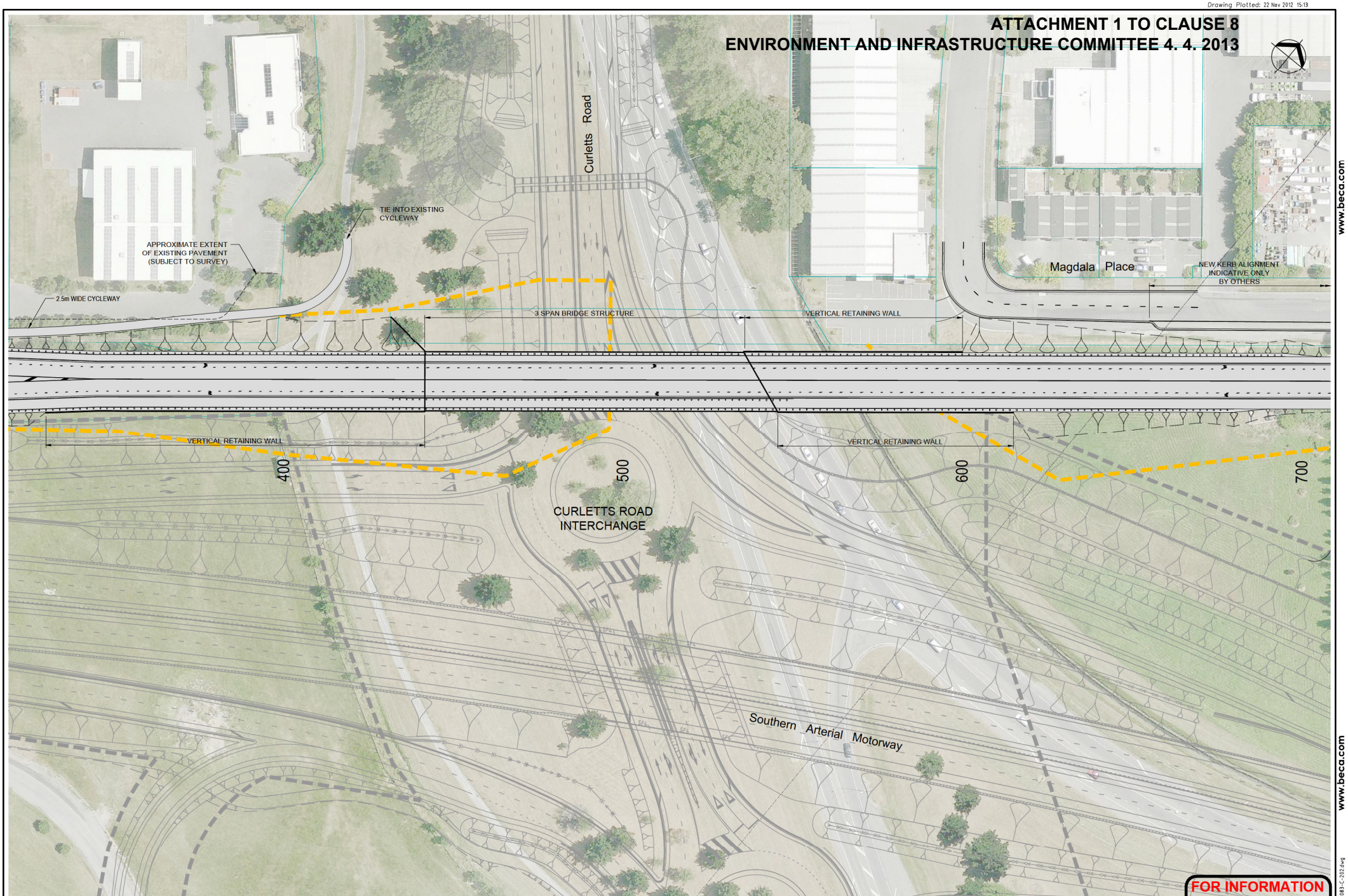
ATTACHMENT 1 TO CLAUSE 8
ENVIRONMENT AND INFRASTRUCTURE COMMITTEE 4. 4. 2013



FOR INFORMATION
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
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Drawing Originator: Beca

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	Drawn	MJD	12.05.11
Reduced Scale (A3) 1:1000	Dsg Verifier		
	Dwg Check		

Approved For Construction* Date
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Client: CHRISTCHURCH CITY COUNCIL · YOUR PEOPLE · YOUR CITY

Project: WIGRAM MAGDALA LINK BRIDGE SAR

Title: LAYOUT PLAN SHEET 2 OF 4

Discipline: CIVIL

Drawing No.: 3383083-C-202 Rev.: A

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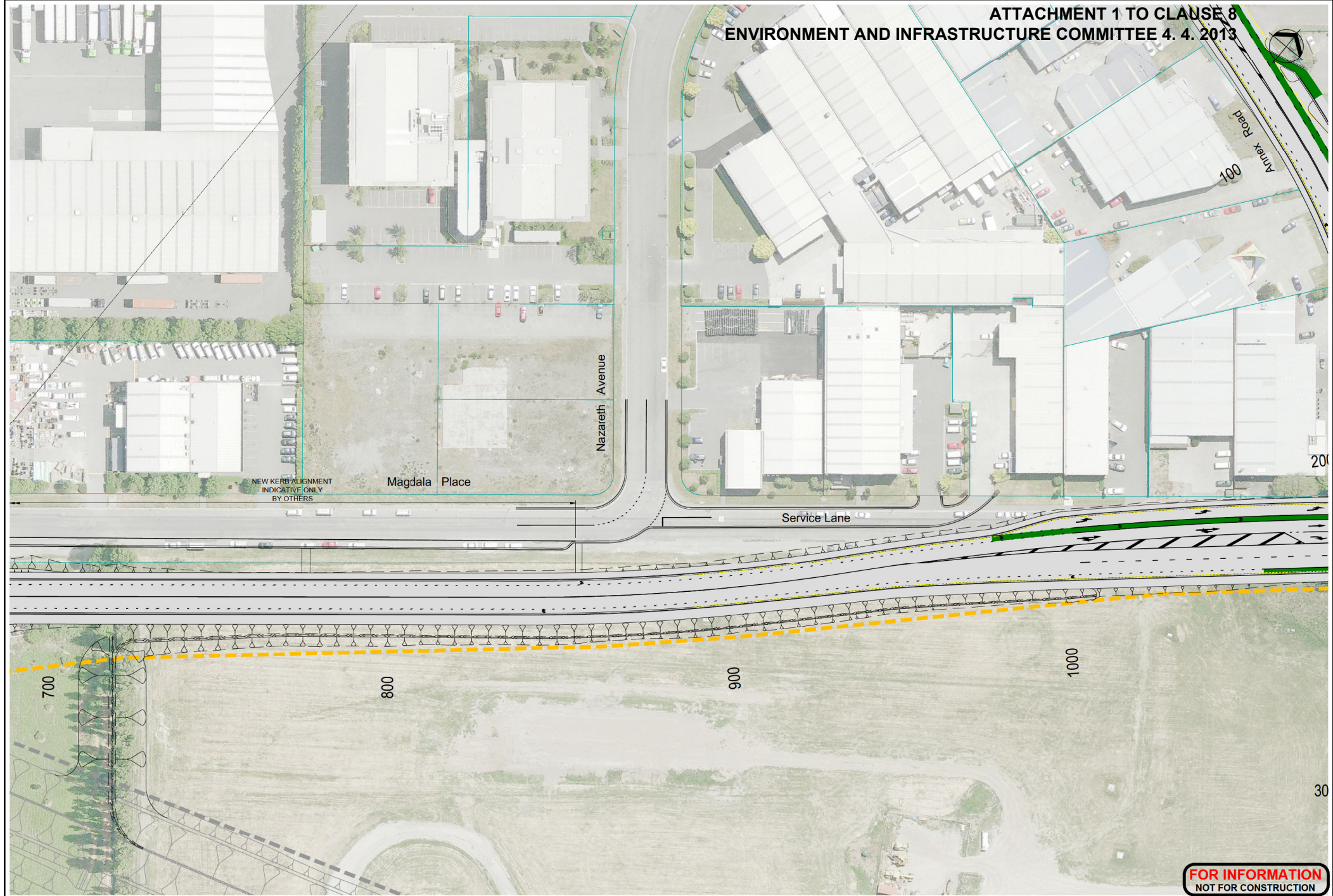
ATTACHMENT 1 TO CLAUSE 8
ENVIRONMENT AND INFRASTRUCTURE COMMITTEE 4. 4. 2013



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No.	Revision	By	Chk	Appd	Date
E	FOR INFORMATION. INTERSECTION UPDATED.	JAL	JDS	DGA	06.12.12
D	FOR INFORMATION. INTERSECTION UPDATED.	JAL	JDS	DGA	30.11.12
C	FOR INFORMATION. FOOTPATHS ADDED. INTERSEC APPROACH UPDATED	JAL	JDS	DGA	22.11.12
B	FOR INFORMATION	JAL	JDS	DGA	05.11.12

Drawing Originator: Beca

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	Drawn	MJD	12.05.11
Reduced Scale (A3) 1:1000	Dsg Verifier		
	Dwg Check		

Approved For Construction* Date
* Refer to Revision 1 for Original Signature

Client: CHRISTCHURCH CITY COUNCIL · YOUR PEOPLE · YOUR CITY

Project: WIGRAM MAGDALA LINK BRIDGE SAR

Title: LAYOUT PLAN SHEET 3 OF 4

Discipline: CIVIL

Drawing No.: 3383083-C-203 Rev. E

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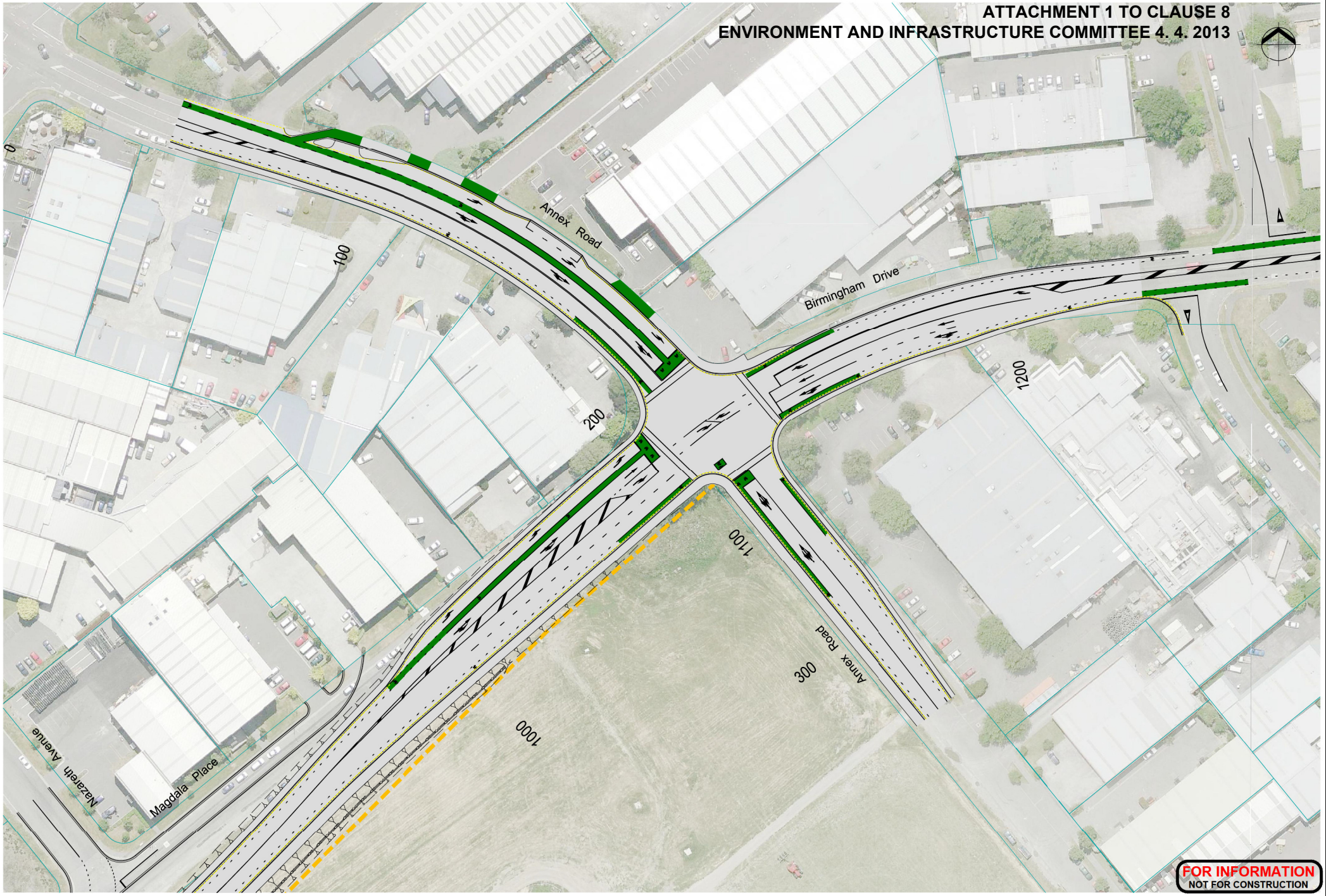
ATTACHMENT 1 TO CLAUSE 8
ENVIRONMENT AND INFRASTRUCTURE COMMITTEE 4. 4. 2013



FOR INFORMATION
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
F	FOR INFORMATION. INTERSECTION UPDATED.	JAL	JDS	DGA	14.12.12
E	FOR INFORMATION. INTERSECTION UPDATED.	JAL	JDS	DGA	06.12.12
D	FOR INFORMATION. INTERSECTION UPDATED.	JAL	JDS	DGA	30.11.12
C	FOR INFORMATION. INTERSECTION UPDATED. HOOK BOX ADDED	JAL	JDS	DGA	22.11.12

Drawing Originator: Beca

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	Drawn	MJD	12.05.11
Reduced Scale (A3) 1:1000	Dsg Verifier		
	Dwg Check		Date

Approved For Construction*
* Refer to Revision 1 for Original Signature

Client: CHRISTCHURCH CITY COUNCIL · YOUR PEOPLE · YOUR CITY

Project: WIGRAM MAGDALA LINK BRIDGE SAR

Title: LAYOUT PLAN SHEET 4 OF 4

Discipline: CIVIL

Drawing No.: 3383083-C-204 Rev.: F

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9. LEASE FOR SPIRE SCULPTURE IN LATIMER SQUARE

General Manager responsible:	General Manager City Environment, DDI 941-8608
Officer responsible:	Unit Manager Asset and Network Planning
Author:	Russel Wedge, Asset and Network Planner

PURPOSE OF REPORT

1. The purpose of this report is to seek the Environment and Infrastructure Committees approval to grant a temporary licence, under the Reserves Act 1977 section 61(2), to Lewis Bradford Consulting Engineers for the installation of the 'Spire' Sculpture designed by Mr Neil Dawson, to be located on 144 square metres in Latimer Square, for a maximum period of three years.

EXECUTIVE SUMMARY

2. Neil Dawson, Sculptor, has designed a sculpture to be suspended in the air five metres above the east to west central path in Latimer Square (refer **Attachment 1**). The sculpture is of a spire that will be suspended at tree height above the path to the east of the central point of the square and clearly seen from Worcester Street. The spire is 10 metres in length and it will be placed along the route between the Anglican Cathedral in Cathedral Square and the Cardboard Cathedral to the south of Latimer Square. The spire will be lit at night. The location provides an intimate feel without impacting on the surrounding trees or impeding public access along the path.

3. The proposal is to provide a temporary licence to Lewis Bradford Consulting to cover the footprint of the sculpture, while still allowing the public free access under and around the sculpture. The licence period is for three years (expire mid 2016) during which time the applicant may seek a permanent location for the sculpture. Council staff will assist with this as much as possible. It is unlikely that Latimer Square would be identified as a permanent location given its status as a heritage place. If it is identified as an appropriate location then a full resource consent application would be required.

4. The sculpture is owned by Neil Dawson and the installation costs would be paid by various sponsors coordinated by Helen Trappitt of Lewis Bradford Consulting Engineers. Lewis Bradford have also provided the structural engineering advice required for the sculpture.

5. Lewis Bradford Consulting Engineers will apply for a Building Consent and a Temporary Resource Consent for the sculpture, which will include works around trees, excavation to install foundations, installation and lighting of the sculpture, and any archaeological and safety requirements.

6. The spire will be centred five metres above the path suspended by guide wires, between four evenly spaced upright poles, which are each anchored to an individual concrete pad. The public's access along the existing path will not be impeded or their safety compromised by the sculpture.

7. Prior to the Latimer Square site being recommended for 'Spire' there have been discussions with private landowners to investigate locating the sculpture on private land. This has been difficult to achieve because of the need to secure agreement to a two-year installation of the sculpture.

8. As part of the Central City Transitional Programme staff have worked with Lewis Bradford Consulting Engineers and Neil Dawson to find an appropriate site for 'Spire' which will improve the experience, amenity and urban environment of the Central City. The Latimer Square site has been discussed to ensure that locating the sculpture on the Square is sympathetic from a design and artistic perspective, and also consistent with city recovery intentions.

9. The resource consent process will deal with environmental matters, including consideration of the heritage status of Latimer Square in relation to the sculpture.

9 Cont'd

FINANCIAL IMPLICATIONS

10. There are no financial implications to the Council in approving this application. The design, construction, installation, Building and Resource Consents, and on-going maintenance for the sculpture over the three year period are being funded by a number of sponsors at no cost to the Council. The sculpture's insurance and public liability insurance are also being funded by Lewis Bradford Consulting Engineers. The on-going maintenance costs associated with the Spire will be included in the licence agreement and are to be met by the licensee.

Do the Recommendations of this Report Align with 2009-19 LTCCP budgets?

11. No, there are no budget implications to the Council.

LEGAL CONSIDERATIONS

12. Latimer Square is vested in the Council pursuant to the Christchurch City (Reserves) Empowering Act 1972, for the purposes of lawns, ornamental gardens, and ornamental buildings. Section 12 provides that all reserves subject to the Act are to be held and administered subject to the provisions of the Reserves Act 1977.

13. As a reserve held for 'lawns, ornamental gardens, and ornamental buildings' it is considered for Reserves Act 1977 purposes, to be held by the Council as local purpose reserve.

14. The Reserves Act, Section 61 empowers the Council to lease or licence local purpose reserves for activities consistent with its classification. Section 61(2) leases or licences of local purpose reserves may be granted for terms of less than five years without there being a requirement to publicly notify such arrangements.

15. It is the view of the Legal Service Unit that an artwork or sculpture on Latimer Square will comply with the Empowering Act provisions. Artwork and sculptures form an integral part of 'ornamental gardens' and such an object may also be considered to be an 'ornamental building'.

16. Community Boards have delegated authority to grant licences of reserves under Reserves Act Section 61, however, the power to grant licences within the central city area has been reserved to the Council. Council staff have no delegated authority to grant leases or licences.

Have you considered the legal implications of the issue under consideration?

17. Yes, as above.

ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS

18. Aligns with the following:

    (a) Safety - by ensuring that our parks, open spaces and waterways are healthy and safe places, and by controlling and minimising flood and fire hazards.

    (b) Community - by providing spaces for communities to gather and interact, and by providing community burial grounds.

    (c) Environment - by enabling people to contribute to projects that improve our environment.

    (d) Governance - by involving people in decision–making about parks, open spaces and waterways.

    (e) Health - by providing areas for people to engage in healthy activities. By managing surface water.

9 Cont'd

(f) Recreation - by offering a range of recreational opportunities in parks, open spaces and waterways.

Do the recommendations of this report support a level of service or project in the 2009-19 LTCCP?

19. Yes, as above.

ALIGNMENT WITH STRATEGIES

(a) Public Open Space Strategy 2010-2040 – Provide an accessible and equitably distributed, multi-use open space network while protecting natural, cultural and heritage values.

(b) Central City Transitional Programme – Supporting recovery of the Central City in a creative manner. This artwork aligns with the 2012/13 Transitional Programme objectives of linking areas of activity, improving the experience, amenity and urban environment of the Central City, and attracting residents and visitors to the Central City.

(c) The Central City Recovery Plan, Te Mahere 'Maraka Otautahi' – New public art as a community aspiration; art to be 'woven through the Central City'; art in parks; transitional art.

Do the recommendations align with the Council's strategies?

20. Yes, as above.

CONSULTATION FULFILMENT

21. The Central City Recovery Plan; Share an Idea – our community asked for a number of initiatives to make the city a more exciting, green and safe environment.

22. Council staff have been involved from a wide range of Units on the location of the proposed sculpture.

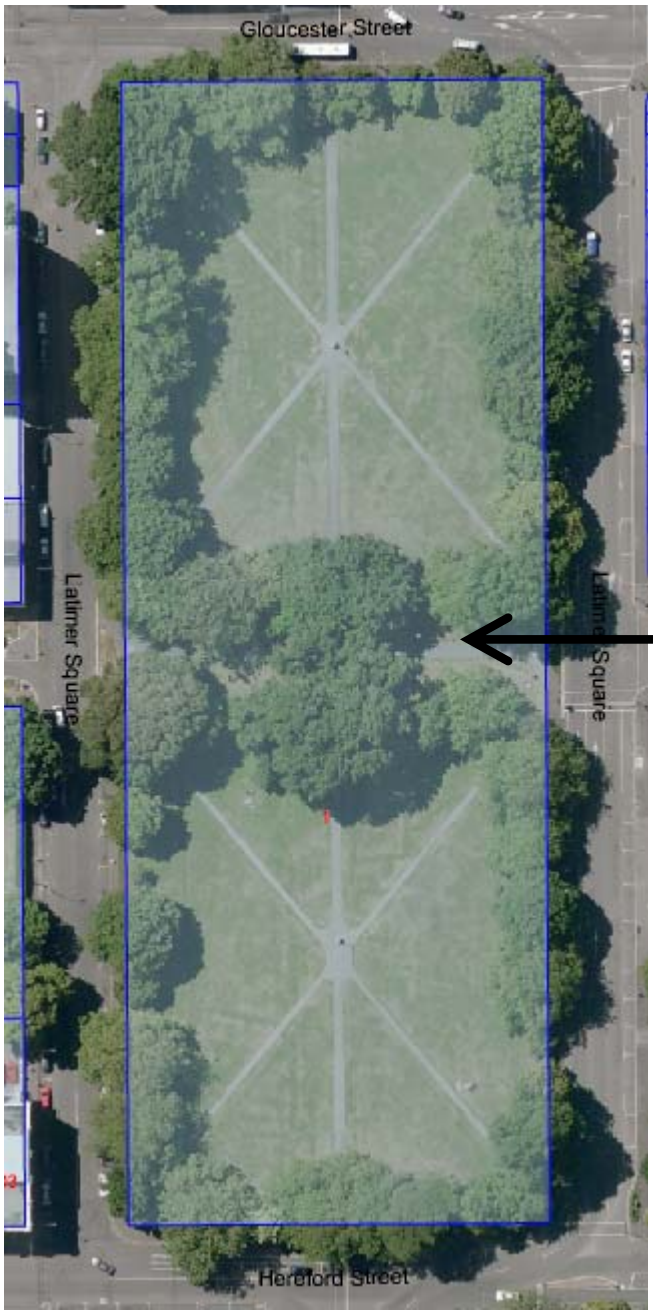
23. The proposed Spire sculpture has been discussed informally with some members of The Chapter of the Cathedral and the proposed sculpture will be discussed at their next formal meeting at the end of February 2013.

STAFF RECOMMENDATION

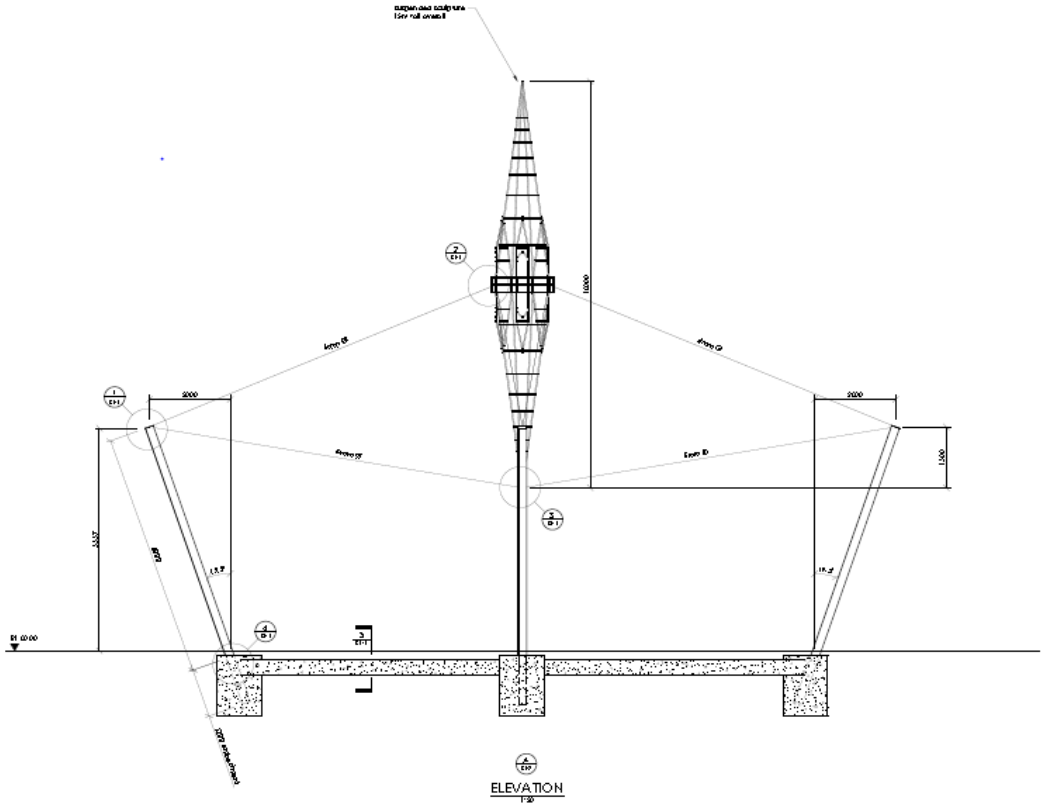
It is recommended that the Environment and Infrastructure Committee approve a temporary Licence to Lewis Bradford Consulting Engineers to install and maintain a 'spire' sculpture, subject to the applicant obtaining Building and Resource Consents, insurances and providing funding for the installation and maintenance of the sculpture for the licensed period. The licence is for a period of three years and for a total area of 144 square metres situated at the eastern side, of the central west to east footpath through Latimer Square.

Attachment 1: Spire sculpture photograph and location in Latimer Square

Proposed Location for Spire suspended above the path



Attachment 2: Spire sculpture – side elevation



Spire sculpture – plan view