SCIRT Rebuilding Infrastructure

LEARNING LEGACY

Lessons learned from one of New Zealand's most challenging civil engineering projects: rebuilding the earthquake damaged pipes, roads, bridges and retaining walls in the city of Christchurch 2011 - 2016.

Central City Delivery Management Plan

Story: SCIRT Management Plans

Theme: The SCIRT Model

A plan which describes how SCIRT would manage the risks associated with rebuilding horizontal infrastructure within Christchurch's central city area.

This document has been provided as an example of a tool that might be useful for other organisations undertaking complex disaster recovery or infrastructure rebuild programmes.

For more information about this document, visit www.scirtlearninglegacy.org.nz

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Fletcher

SCIRT
Rebuilding Infrastructure

Central City Delivery Management Plan

Review:

Rev.	Status	Prepared by	Checked by	Date
A	Approved	Richard Topham	Ian Campbell	24/10/2013
B	Approved	Richard Topham	Ian Campbell	05/03/2014

Authorisation:

Name	Position	Date	Signature
Ian Campbell	Delivery Manager	10/03/2014	Ian J Campbell
Duncan Gibb	General Manager	14/3/14	

CONTENTS

1 ACRONYMS, ABBREVIATIONS AND DEFINITIONS

Term	Definition
AA	Alliance Agreement
GM	General Manager
CCC	Christchurch City Council
CCDU	Central City Development Unit
CERA	Canterbury Earthquake Recovery Authority
CTOC	Christchurch Transport Operations Centre
DMP	Design Management Plan
EMP	Environmental Management Plan
IST	Integrated Services Team
ITP	Inspection and Test Plan
KPI	Key Performance Indicator
KRA	Key Result Area
NZTA	New Zealand Transport Agency
OLG	Operational Leadership Group
PMP	Programme Management Plan
QMP	Quality Management Plan
SCIRT	Stronger Christchurch Infrastructure Rebuild Team
SDI	Spatial Data Infrastructure
TIM	Transport Impact Minimisation Group
TLG	Tactical Leadership Group
TTM	Temporary Traffic Management
USC	Utility Service Coordinator
UMP	Utility Management Plan

2 INTRODUCTION

2.1 PURPOSE OF THIS PLAN

The purpose of this *Central City Delivery Management Plan* is to describe how SCIRT intends to manage the specific risks associated with undertaking the construction of the Christchurch horizontal infrastructure rebuild works within the central city area (bounded and inclusive of the '4 Avenues'). Such works shall include the construction of the 3 waters (water, wastewater and stormwater) roadway, bridges and associated facilities required to complete the rebuild works.

2.2 PROGRAMME DETAILS

The full scope of the SCIRT rebuild programme is detailed in the *Programme Management Plan*.

3 OBJECTIVES

This plan has been produced to supplement the *Construction Management Plan* and other relevant Management Plans for specific issues within the central city.

The main objective of this plan is to facilitate completion of all construction activities on time and on budget within the central city area, in a manner that facilitates the wider rebuild and recovery process, and in particular, the Central City Plan.

Many of the various non-SCIRT work programmes will be delivered alongside the SCIRT programme. Together, they will have a significant impact on both traffic flow and the business community within the central city area.

The main issues identified specific to the central city area and addressed in this plan include:

- Alignment of the various work programmes
- Road space conflict identification and management
- Maintaining minimum levels of service for traffic flow
- Communication & Stakeholder engagement
- Minimising the impact to businesses
- Parking strategy
- Construction site and footprint management

This document will therefore enable a consistent approach for these issues to be adopted by the delivery teams working within the central city area.

4 PROGRAMME ALIGNMENT

4.1 INTERACTION WITH ANCHOR PROJECTS

Anchor Projects will be implemented by both the CCC and CCDU between 2013 and 2018. These include the following:

- Avon River Precinct
- Convention Centre
- Stadium
- Metro Sports Facility
- Bus Interchange
- The Square
- Justice & Emergency Precinct
- Health Precinct
- Residential Demonstration
- Innovation Precinct
- Retail Precinct
- Accessible City Plan
- Earthquake Memorial
- Central Library
- Performing Arts Precinct
- Cricket Oval

SCIRT has prioritised the horizontal infrastructure repair/rebuild around these works where necessary to ensure underground and surface infrastructure supports the timing of these developments. Because of this, the infrastructure has been designed ahead of the anchor projects and as such SCIRT meet with the CCC and CCDU weekly to keep ahead of progress and Anchor project design development.

As the Anchor Project proposals develop, workshops will be held between the SCIRT Design/Delivery teams and the Anchor Project teams to confirm that our construction plans meet Anchor project requirements. Any requirements outside of SCIRT scope are identified and passed to the Horizontal Infrastructure Management Team (HIMT) for agreement between the Client Organisations and to allow instruction to be given to SCIRT for progression. The IST Central City Programme Manager (Richard Topham) is responsible for this liaison.

4.2 INTERACTION WITH OTHER PROGRAMMES

In addition to the Anchor Projects, various other programmes of work are being delivered within the central city. These include:

- Demolition Work
- CCDU/CCC Accessible City Plan
- Private Developments
- CCC other Programmes
- Utilities work
- Events

Because of this, where a conflict with other work programmes exists, there is very little flexibility to change the SCIRT schedule without incurring delay and hence additional cost to the rebuild programme. As such, SCIRT will continually liaise with the various programme holders to minimise risk and ensure the SCIRT programme is well understood.

SCIRT schedules have been developed and prioritised as follows:

1. Anchor Project alignment
2. Hydraulic dependencies (constructability) due to network changes
3. Productive and economic delivery of the work
4. Optimisation for traffic and business impact management

Due to the various conflicting priorities and the changing central city environment, there may be the need to optimise the schedule for traffic impact and business impact minimisation. SCIRT will liaise with CTOC and the business owners to facilitate this process. However, it is likely that conflicts will occur, and rescheduling of the SCIRT programme would result in additional cost or programme delays. In these instances, SCIRT will follow the conflict resolution process as outlined in the Transport Optimisation Management Plan appended to this document.

4.3 SCHEDULE UPDATES

Baseline and Progress Schedules are prepared and maintained by the Delivery Teams for all SCIRT projects in accordance with the Schedule Management Plan. For Central City projects, the progress schedule will be developed into a detailed street level schedule. This Street-level Schedule will be maintained and updated weekly and provided to the IST by 12pm Thursdays to for processing as per Figure 1.

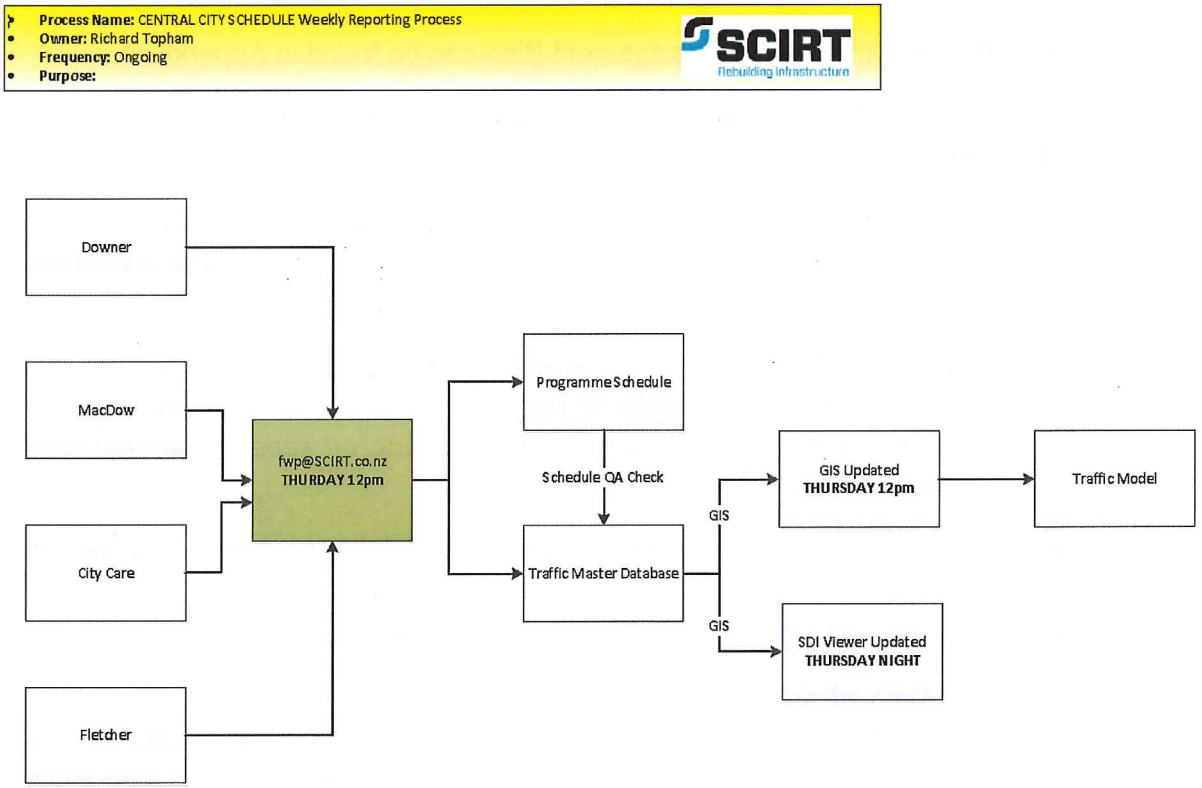


Figure 1: Schedule Update Process Chart

Delivery Teams will ensure that the street level schedule updates provided are consistent with project schedule reporting required by the *Schedule Management Plan*.

All street level schedule updates will include the proposed traffic impacts to assist with conflict assessment and address the overall impact on traffic flow. The traffic impact information provided must include:

- Primary impact (within the work site area)
- Secondary Impacts (on interconnecting roads)

Accuracy of this information must be:

- Greater than 3 months from submission date – Impacts Indicative only
- 3 months from submission date – Impacts confirmed
- 1 month from submission date – Impacts validated through production and submission of the TMP

This information will be uploaded into the SDI tool (as detailed in 5.1 below) to ensure current information is displayed and utilised by the various stakeholders, programme owners and CTOC to assess the transport impact.

5 ROAD SPACE & TRANSPORT MANAGEMENT

The Transport Optimisation Management Plan can be found in Appendix A.

As construction activity increases in the central city there will be two primary conflicts for road space:

- Road space - Competition between separate construction contractors/crews for the same space in the road reserve (e.g. SCIRT working to replace a wastewater pipe in the same location as a crane to rebuild a structure)
- Transport - Competition from geographically separate work fronts whose combined impact effects the operation of the road network. An example would be two work fronts which both consume a northbound lane on separate arterial routes through the central city.

To identify and mitigate these potential conflicts the following process has been designed.

5.1 SPATIAL DATA INFRASTRUCTURE (SDI) TOOL

The Spatial Data Infrastructure (SDI) tool which is also known as the Forward Works Spatial Collaboration (FWSC) tool, is a web based portal for the visual display of forward works information at a street by street level developed and operated by LINZ. The tool is designed to identify spatial and network clashes at least three months prior to the start of construction activity. The SCIRT delivery teams are required to:

- Provide central city schedule updates to the SDI tool on a weekly basis

- Submit central city schedules on a 'best foot forward' basis. Therefore the schedule should always reflect a delivery team's current construction method, sequence and timing, irrespective of whether TMP's are approved or programmes fixed.

This is to allow an integrated planning approach to be taken to identify conflicts or interactions between the various work programmes, assisted by the CCDU Construction Management Office (CMO).

An example of a screenshot from the SDI tool is shown below in Figure 3 detailing SCIRT work in construction on 12th September 2013. Proposed and completed work can also be shown at any point in time:

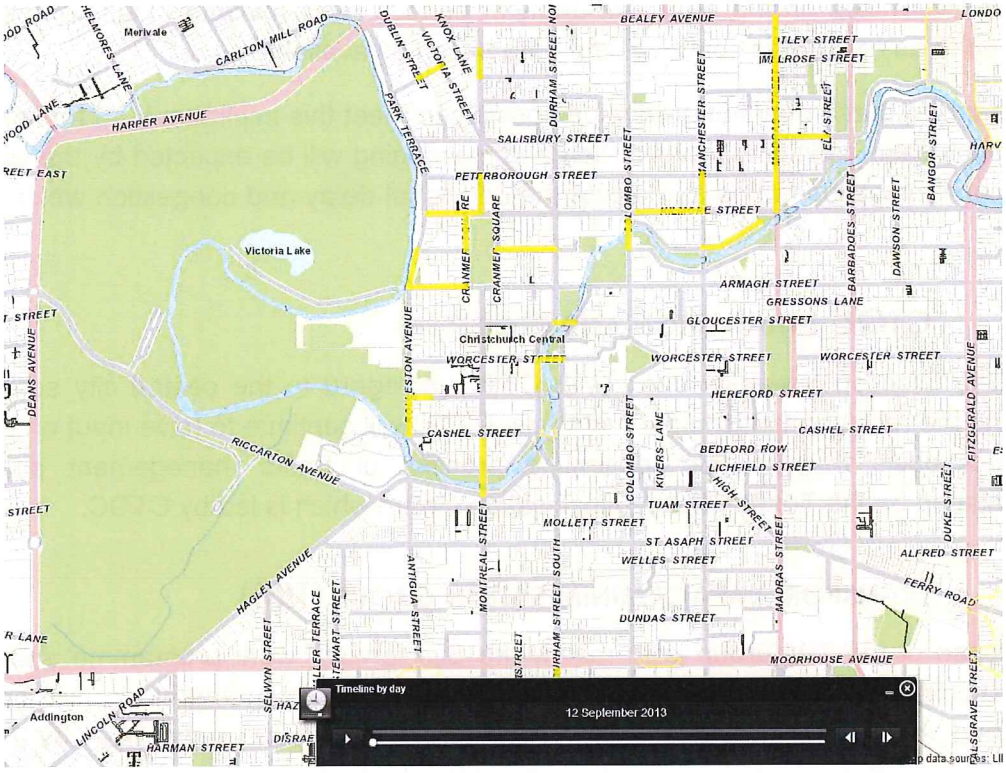


Figure 2 – Example of the SDI Output

It is intended that the programme managers, on identification of a conflict/interaction liaises with the other programme manager to ensure the interaction is possible, and an integrated approach is taken.

5.2 GIS Traffic Impact Analysis and Traffic Modelling

Based on the Primary and Secondary Traffic Impact data provided, a comprehensive GIS traffic impact and traffic modelling analysis is undertaken. This analysis will identify the times and locations where combined work activity no longer provides for a minimum level of service for the transport network. When such constraints are identified the delivery team(s) will be contacted to investigate opportunities for re-sequencing of work. If re-sequencing is possible the SDI will be updated by the delivery team with the new proposed sequence. If re-sequencing is not possible then CTOC will be alerted and additional mitigation employed to ease the overall impact on the transport network.

The request to re-sequence work will be issued directly by the SCIRT Transport Planning team following a request from the TIM Group (as outlined below and in Appendix A).

The traffic impact analysis will consider the potential conflict associated with detour routes or turn restrictions at intersections.

5.3 TRAFFIC MINIMUM LEVELS OF SERVICE

A minimum level of service (LOS) for the traffic network in the central city has been agreed between SCIRT, CCDU and CTOC. This has been agreed on the basis of providing sufficient number of traffic lanes to accommodate north-south and east-west traffic volumes with a specific focus on the peak AM and PM periods. This minimum LOS will be further developed to as new traffic count/volume data becomes available.

It is recognised that it may not always be possible to meet this minimum LOS for the central city in which case additional traveller demand messaging will be expected by the combined SCIRT communication teams to mitigate the additional delay and congestion which is likely to result.

5.4 CTOC INTERACTION AND PROCESSES

SCIRT will liaise on a weekly basis with CTOC in regard to the central city schedule of works and the resulting traffic impact analysis. CTOC will continue to have input on a project by project basis through the consenting process of traffic management plans and representation on the Traffic Impact Minimisation Group which is led by CTOC.

5.5 TRANSPORT IMPACT MINIMISATION GROUP (TIM)

The purpose of the TIM group is to review the SDI forward work programme and identify potential locations and times that the traffic network within the central city will be overly constrained. Identification of poor network performance will be undertaken by TIM with reference to the minimum network LOS framework identified above. The TIM group includes representatives from CTOC, ECan, CCC (events coordinator) in addition to construction programme representatives from CCDU and SCIRT and meets fortnightly for this review.

Details of the role of the TIM group are also included in Appendix A.

5.6 SCHEDULE OPTIMISATION & CONFLICT RESOLUTION

TIM will work with the programme owner to investigate the possibility for re-optimisation of their schedule when a network constraint is identified. For SCIRT activity (across all delivery teams) TIM will raise a request via the IST outlining where the network minimum LOS has not been met. If re-optimisation or re-sequencing of work is not possible (i.e it is not possible to mitigate network constraints or programme clashes) one of two processes will be followed.

CTOC may be willing to accept the constraints imposed on the traffic network by the work activity in which case they will mitigate the effects via increased messaging and possibly aggressive traffic management (changing the phasing of lights etc). If CTOC are not willing

to accept the additional network constraints and re-sequencing of work is not possible then the issue will be elevated to the appropriate governance level for resolution.

5.7 BRIDGE SEQUENCING AND HAULAGE ROUTES

There is a high priority for access and egress routes for heavy vehicles including high productivity motor vehicles (HPMVs) within the central city. There are two primary constraints for heavy vehicles inside the four avenues. The first relates to available routes during the bridge rebuild programme and the second relates to ensuring sufficient room for long vehicles to manoeuvre through traffic management sites which may leave limited space particularly at corners requiring additional turning space for trucks.

SCIRT will work with CTOC to identify appropriate access routes into and through the central city which account for the sequence and progress of SCIRT work activity – particularly in respect of bridge reconstruction work.

These bridges extend from the Antigua Street footbridge downstream to the Stanmore Road Bridge. Particular focus is given to the key arterial routes (and associated bridges) of Montreal Street, Durham Street, Madras Street, Barbadoes Street, Fitzgerald Avenue and Stanmore Road which, although outside the central city, acts as an important relief route for north-south central city routes.

6 COMMUNICATION

The Central City Programme Engagement Plan can be seen in Appendix B.

The purpose of this engagement plan is to outline the communication and community engagement that will support SCIRT's central city programme and keep the people of Christchurch informed about this work. Only 'outstanding' levels of communication will meet the needs of those affected by our works to minimise the overall impact on both transportation levels of service and businesses operating within the central city.

6.1 COMMUNICATION GOALS

Our communication goals outlined in the plan are:

- To provide accurate, timely and accessible information
- To give confidence that SCIRT's rebuild is coordinated and well considered
- To encourage key stakeholders, such as business leaders and elected representatives, to become advocates for SCIRT's work
- To manage expectations with business, residents, motorists and other stakeholders
- To build relationships between the residents/businesses in each quadrant and the relevant delivery team

6.2 DESIRED COMMUNICATION OUTCOMES

The desired outcomes from this are:

- To ensure stakeholders and community understand the work programme and what is involved with the rebuild of central city infrastructure. Particular focus will be given to the criticality of programme timeframes, effects of construction and traffic management on achieving the overall rebuild of the central city.
- To ensure stakeholders and the community are appropriately engaged around the programme and that communications are delivered in a way that meets their needs.
- To reassure those who have businesses and/or work in the central city that SCIRT will minimise the effects of the work as much as possible and will work with them to support continued business.
- To reassure residents that we will minimise the effects of the work as much as possible and keep them informed about upcoming work near their home.
- To provide an outstanding level of communication that maintains SCIRT's reputation as an organisation that holds the people of Christchurch at the heart of the rebuild.

6.3 COMMUNICATION APPROACH

Communication will have two parallel approaches:

- At the operational level communication will be targeted at those affected by SCIRT works. It will also focus on each delivery team developing relationships with the local people that live or work in the quadrant that they are rebuilding. Each project with be supported by a Communication Control Plan (CCP).
- There will also be a city-wide approach. It will be targeted towards all people who visit, pass through or represent interests in the central city, as well as those that live or work there. City-wide communications will be guided by this document and will support the operational delivery of the programme. This approach will include key messaging agreed with the CCDU, CCC and CTOC, along with presentations to the private industry.

7 PARKING STRATEGY

7.1 CONTRACTOR ALTERNATIVE PARKING

To reduce the construction site footprint, the Delivery Teams will enforce parking restrictions on the number of contracting staffs vehicles able to be parked on site. The Delivery teams will work with the CCC and CCDU to identify, through the short term parking strategy, alternative sites for staff parking. The delivery teams will then assess the need to transport staff to the various worksites from the alternative parking areas.

7.2 PARKING FOR BUSINESSES

7.2.1 Identification of parking spaces affected

In areas where work has significant effect on commercial areas (such as Cashel Mall, New Regent Street and Victoria Street) or public facilities (such as the Hospital), the Delivery team will identify and record the parking spaces to be affected from the SCIRT works 3 months in advance, and reconfirm one month in advance of the construction start date.

This information will be provided to the CCC Parking team for a joint review between the delivery team and the CCDU/CCC for alternatives required to support businesses in light of other programmes of work being delivered at the same time.

7.2.2 Communication to Businesses

In all areas, the loss of parking and identified alternatives will be communicated to the affected businesses by the Delivery Team. This liaison will ensure the parking requirements of the business are known (i.e. cafe and office parking requirements will differ). If customers are required to be notified of these changes this can be included in the work notices, and posters can be displayed in the shop windows etc. The Delivery teams will be responsible for this operational communication.

7.2.3 Parking Signage

In addition, site signage will be used to direct traffic to these alternative parking areas and included in the site TMP.

Support is also available from the CCC in form of the Transitional Project Team (Felicity Morey). Where appropriate, the Delivery team, with the IST Communications team will liaise with the CCC for support with 'Way-finding', signage, and transitional opportunities to support the businesses as the work progresses.

7.2.4 Parking Within Traffic Management Sites

Typically, the temporary traffic management (TTM) required either side of the physical works will also take available parking spaces. In these instances, the STMS and Delivery Team Project Manager will provide access to these spaces through entry/exit points within the TTM site if safe to do so, supported with signage indicating the spaces are available for public use. The STMS will have the discretion to decide if site safety allows for this measure, and if necessary, amend the TMP during the work progression.

8 CONSTRUCTION SITE MANAGEMENT

8.1 BUSINESS IMPACT MANAGEMENT

When working in the Central City it is extremely important that the impact on the businesses is effectively managed.

Business impact management can be summarised in 4 parts outlined in this document:

- Providing minimum levels of service for transport routes (Refer to Section 5.0)
- Early communication of programme and work and impact (refer to Section 6.0), supported by:
    - Key messaging such as 'Open for Business' – Joint messaging with the CCDU/CCC
    - Generic citywide communication (SCIRT IST/CCC/CCDU)
    - Specific operational communication (SCIRT Delivery teams)
- Minimise the impact on parking (Refer to Section 7.0)
- And construction site management adjacent to the businesses affected outlined below

A key point of difference in the central city is the number and variety of stakeholders which includes present and absentee owners, operating businesses, developers and residents.

In comparison to working in a residential area where most of the residents leave for work for the day, in the central city the work occurs at the same time as the businesses are operating. The Delivery Teams therefore need to ensure that they are considerate of the business needs and requirements to minimise inconvenience and financial impact due to the work.

This significantly increases the level and amount of communication resource required for projects in the Central City. As such, the Delivery teams need to ensure adequate resource is available to support business owners.

8.2 CONSTRUCTION SITE FOOTPRINT & ACCESS

To reduce the impact as much as possible the site footprint needs to be kept to the minimum required for productive work delivery for the various work types. The Delivery team will ensure that this is regularly reviewed with site personnel and included in the site audit process.

Particular attention will be given to 'redundant' traffic management, i.e. TTM in place before mobilisation of resource or removal after demobilisation of resource. Attention should also

be given to road reinstatement being undertaken as soon as possible after completion of the trenching work (public perception is that this is also redundant TTM).

Additional site measures may also be required such as safe clean pedestrian access from the alternative parking areas to the business entrance along with additional signage to support the businesses affected.

8.3 "ONE PASS" APPROACH

The idea of "one pass" is to carry out all of the work (3 waters and roading) within a length of road in a continuous operation from installation of the temporary traffic management to the de-establishment from site. This provides benefits in terms of minimising the duration of rebuild works at any given location, minimise the impact for affected stakeholders and provide value benefits, particularly for TTM establishment costs.

This detailed planning will occur at a street level as the programme progresses and the schedule updated accordingly. This will be especially important at intersections where a project boundary exists between separate Delivery Teams.

"One pass" may not be achievable or desirable in all circumstances dependent on the conflicting priorities, hydraulic dependencies, the vertical development or other related issues. However, SCIRT will actively identify and implement opportunities to use this approach.

8.4 ENVIRONMENTAL MANAGEMENT

8.4.1 Noise

The limits recommended in NZS 6803 Acoustics Construction Noise must be complied with in the central city. This includes both day-time and night-time limits. Consideration should be given to the proximity of receptors, the sensitivity of receptors (e.g. residential vs buildings that are only occupied during the day) and the nature of the work.

8.4.2 Dust

Dust management is important to minimise nuisance and health effects on businesses and people. Sites must ensure that dust is controlled so that it is not discharged beyond the site boundary. Dust control measures may be required dependent on the type and location of the work and consideration given to residents, businesses, pedestrians and road users.

Screening of sites may also be necessary particularly in busy pedestrian areas or adjacent to business premises.

Delivery teams Environmental Advisors will consider whether it would be efficient to have joint dust management measures during the programme of works and will actively review this issue as the work progresses.

8.4.3 Vibration

Ground vibration is inherent in most construction activities. Excessive vibration can result in damage to surrounding structures. Open trench drainage requires trench support and typically shields and other passive methods of trench support can be used to safeguard work crews. However sheet piling may be required for deep excavations or where space is limited.

Where sheet piling is required, Delivery teams will follow SCIRT protocols for risk assessment of vulnerable structures, select appropriate plant and methodology, consider carrying out pre and post work damage assessments and implement protective measures.

The appropriate controls will be based on the risk assessment, and must be implemented prior to construction.

A walkover and desktop study on GIS of the surrounding site is recommended to ensure any vulnerable buildings are included into the delivery teams risk management.

8.4.4 Temporary Works - Wastewater Flow Diversion

Temporary works to divert wastewater flow will be actively managed through a specific flow management process developed between the IST, CCC Operations and the Delivery Teams. This will ensure that all temporary diversion of flows are considered for:

- Continuity of service
- Impact on the system and any associated overflows
- Ongoing maintenance operations
- Effect on other delivery teams
- Risk of drawdown in sewers damaged through the EQ events (fines loss, voids and tomos).

The delivery teams will provide the CCC Ops team with a Permit to Work (PTW) for all temporary flow diversion at least 4 weeks prior to the temporary diversion taking place including a detailed sketch of:

- Location of the bung/Pump
- Expected duration
- Expected surcharged pipes and discharge points for diverted flows

A weekly review will then take place to analyse the effect on the network, initiate modelling where required, and identify active control measures needed to manage the risk.

The review will be undertaken by Tim Ure (CCC Ops Liaison) and Chris Mance (SCIRT Asset Owner Representative) with input from the Delivery teams. Recommendations will then be made and discussed with the delivery teams where necessary.

8.4.5 Dewatering

Coordination will be needed with the CCC Rebuild Central team and ECan to manage the effect of private developers discharging ground water into either the stormwater or wastewater system where SCIRT are required to undertake repairs downstream of the discharge point.

For SCIRT related dewatering, consideration must be given to the risk of impact of the dewatering on neighbouring properties when selecting the appropriate system, and the effects on other delivery teams programmes.

8.4.6 Working Adjacent to Trees

Requirements for working around trees are outlined in the SCIRT Tree Consent and the SCIRT *Tree Management Plan*. Care must be taken when working around trees to avoid any accidental damage by plant, and an Arborist may be required on site when working within the specified setback distances from trees.

8.5 Lateral Investigation and Repair

The general philosophy for lateral repair is as follows:

- Where the sewer is to be renewed, all laterals identified for renewal are replaced to boundary (except for vacant lots).
- Where the sewer is to be relined, lateral investigation will be required to decide whether the action for the lateral is to do nothing, to be relined or relaid.
- Where multiple laterals exist to a vacant lot (building demolished), then one lateral will be repaired and others abandoned. Where the vacant lot has multiple road boundaries, then one lateral will be repaired, with a capped stub on the other road/s.
- Where the laterals serve an Anchor Project site, then the Delivery team will liaise with the CCDU to determine requirements.
- Where the lot is under development, the delivery team is to liaise with Rebuild Central, through David Bain, the SCIRT Utilities Coordinator to identify the Developers specific requirements.

Both open cut and pipe bursting methods will be used. Where a private development is under construction the Delivery Team will liaise with the Developer to agree where the most suitable end point of the lateral is. It is proposed that the laterals are left short of any planned foundation works to avoid damage as the foundations are excavated or removed. The developer can then complete the lateral connection for the property.

In all circumstances, Delivery teams only have approval to repair existing laterals. New laterals must be approved and instructed to SCIRT through HIMT

The process to agree laterals for the vertical development is shown in Figure 3 overleaf will be used:

- **Process Name:** Central City WW Laterals
- **Owner: Richard Topham**
- **Frequency:** Ongoing
- **Purpose:**
- **Date:** September 2013

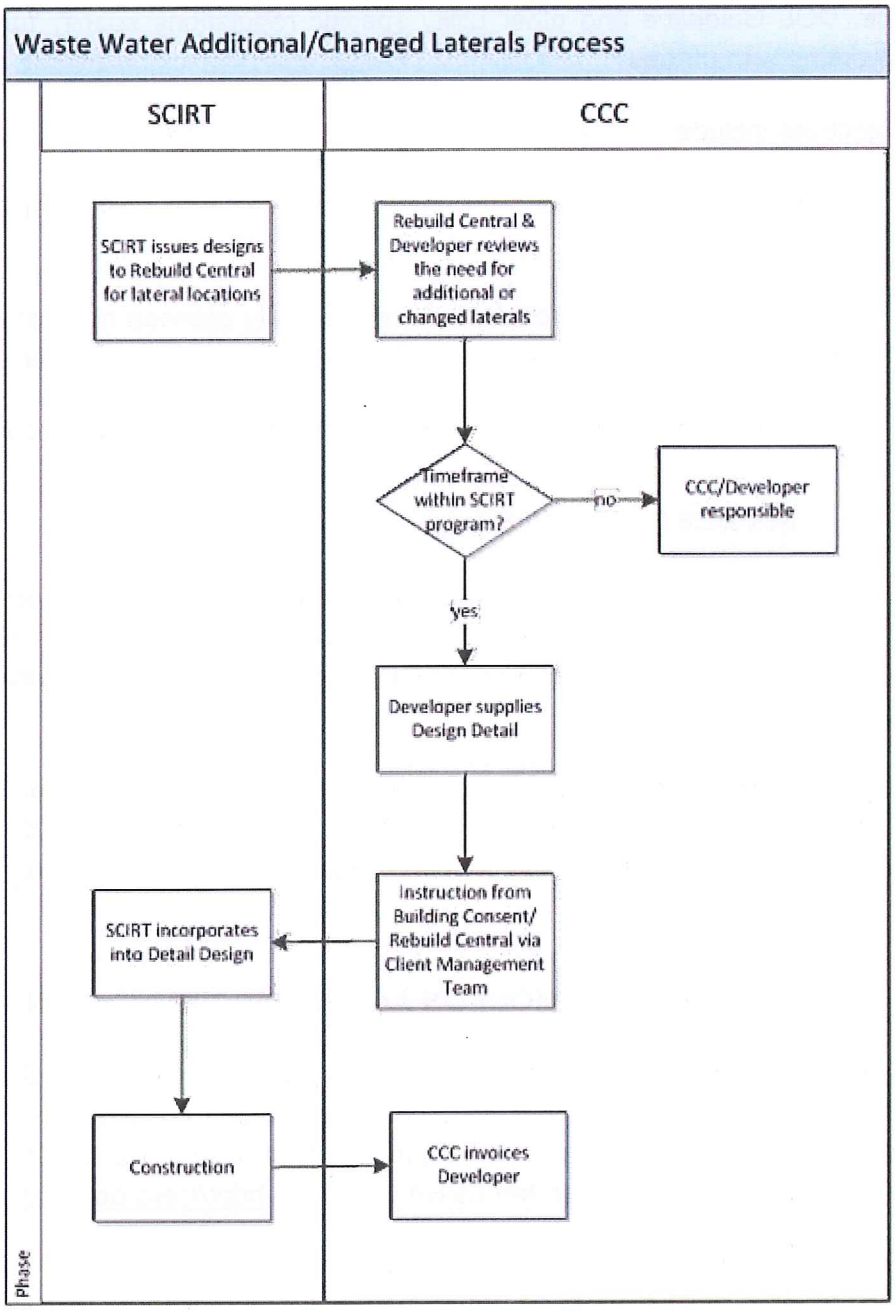


Figure 3 – Additional/Change in lateral connections

8.6 UTILITY COORDINATION

In accordance with the Alliance Agreement and Utilities Management Plan (UMP), a working group led by SCIRT (Utilities Review Panel) has been established and formal agreement reached to facilitate coordination between utility owners, CCC and SCIRT

Design and Delivery teams. This is reflected in the *'SCIRT Central City Utilities Coordination and Shared Corridors Project Execution Plan'*, included in Appendix C.

SCIRT Design and Delivery teams must follow the SCIRT Design Guideline and Notice of Requirements for identification location and protection of utilities. The NZUAG Code of Practice, DOL Guideline and other utility specific regulations specify further requirements when working with utilities.

Key objectives include

- Ensuring technical issues and costs associated with utilities are incorporated into SCIRT designs.
- Taking a one pass approach to complete utility planned maintenance, upgrades or future proofing at the same time as a SCIRT project where practicable
- Reducing costs via shared trenching wherever it is practical to do so.

8.7 SERVICE PROTECTION

Due to the number of utility services within the Central City the protection of services needs careful consideration and effort. It is likely that because of this, trench shields may not be used in all locations, hence requiring sheet piling between some services where a trench shield cannot fit.

Due to the narrow corridor available to install the wastewater, water mains (particularly AC) may have to be isolated in places to prevent them from being damaged. A greater level of planning is required to manage and support the services crossing and running parallel to the trench.

8.8 DROP ZONES, DEMOLITION AND BUILDING PROTECTION

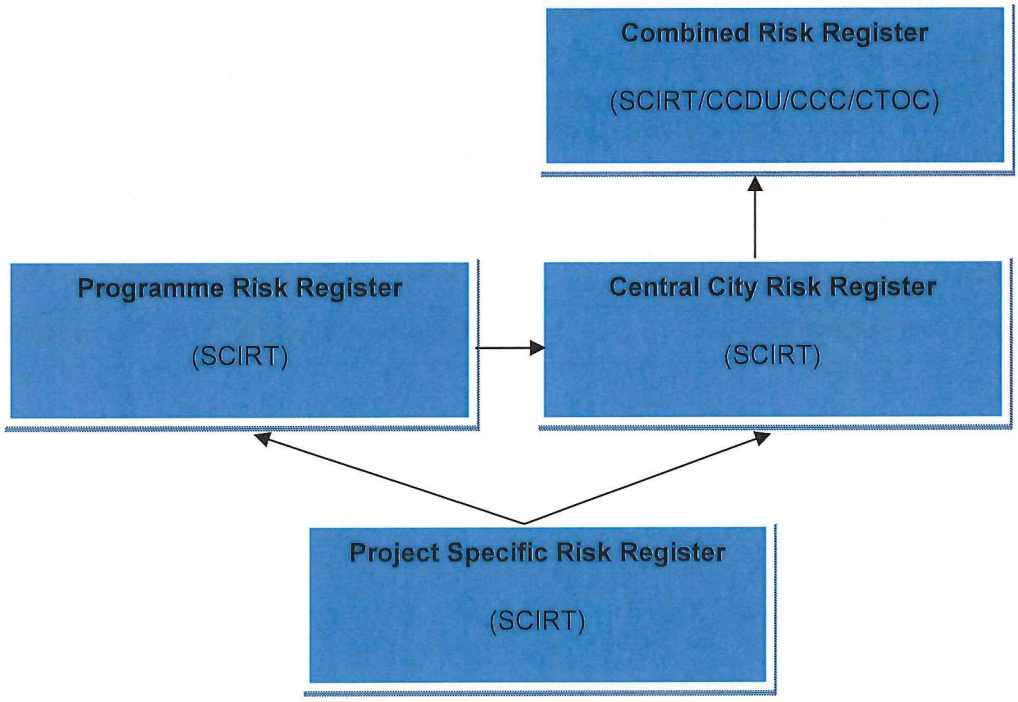
There are a number of buildings fenced off to protect drop zones (Section 45 Notices) encroaching on the proposed work location. In situations like this, the Delivery teams will liaise with the CCDU with regards to the constraints imposed. Up-to-date information about the S45 Notices can be found on the CERA website – http://cera.govt.nz/notices.

Where conflicts still exist, the Delivery Team will assess whether their programme can be adjusted to suit the removal of these obstructions. Where this affects the overall programme, or has a cost impact, then this will immediately be notified to the Clients.

9 RISK MANAGEMENT

The *Risk & Opportunities Management Plan* details how SCIRT manages risks associated with the rebuild works generally.

SCIRT will consider the risks associated with the Programme for the rebuild as a whole, this will be done using 3 levels of assessment as follows:



The Combined Risk Register will be jointly developed and discussed at the weekly CCC/CCDU/SCIRT planning meetings. The Delivery teams will actively engage with the Central City Programme Manager to review and manage these risks.

The Central City Risk Register will be developed from the Project Specific Risk Registers to summarise risks that are inherent across the projects within the central city and will be managed jointly by the Delivery teams in a coordinated and consistent manner.

Managing the Project-specific construction risks will be the responsibility of the respective Delivery Team assigned to that Project. The Delivery Team will address the project construction risks in the selection of their construction methodology.

10 MANAGEMENT PLAN CONTROL

10.1 AUTHORISATION

Initial authorisation is in accordance with the AA, Section 6.1.1. All plan revisions will be authorised by the GM.

10.2 DISTRIBUTION

The Plan is a controlled document and shall be distributed and revised in accordance with the SCIRT *Quality Management Plan*. Hard copies are Un-Controlled copies. The Controlled copies are maintained in "Project Centre" which is a secure website which supports various project management functions for the Programme including "configuration management" i.e. version control of documents.

11 ROLES AND RESPONSIBILITIES

The responsibility for meeting the key requirements of this plan are assigned primarily to the roles identified in the table below

Responsibility	Role
Plan preparation/revision	Central city Programme Manager
Plan Issue/Revision authorisation	Delivery Manager & General Manager
Plan Evaluation and Review	Quality Manager and General Manager

Appendix A – Transport Optimisation Management Plan

CERA
Canterbury Earthquake Recovery Authority

SCIRT
Rebuilding Infrastructure

Christchurch Rebuild Programme Transport Optimisation Management Plan

Review:

Rev.	Status	Prepared by	Checked by	Date
A	Final	Sara Gulick, CERA Ryan Cooney – CTOC Richard Topham - SCIRT	Alistair Pearson	

Authorisation:

Name	Position	Date	Signature
Duncan Gibb	SCIRT General Manager	13/2/14	
Ryan Cooney	CTOC Manager	31/1/14	Ryan Cooney
Alistair Pearson	CCDU Manager	21/2/14	

Contents

Background

Christchurch Transport Operations Centre (CTOC) is a joint venture between the Christchurch City Council (CCC), Environment Canterbury (ECAN) and New Zealand Transport Agency (NZTA) and responsible for the operation of the transport network. Traffic will be heavily impacted due to the extensive repair works necessary to repair vertical and horizontal infrastructure, therefore CTOC has a vital role to play in facilitating the rebuild programme whilst working to minimising the impact to the transport network.

As such, this Plan has been produced in conjunction with the Christchurch City Council, the Christchurch Central Development Unit (CCDU) and the Stronger Christchurch Infrastructure Rebuild Team (SCIRT) to ensure a collaborative approach is implemented between the public and privately funded programme holders and the CTOC team.

The Program Owners are defined as CCDU, SCIRT, Utility Providers, CCC, NZTA and Private Developers with the CCDU taking a wider coordination role with all programme owners through the CCDU Construction Management Office (CMO).

The Transport Optimisation Management Plan has therefore been produced to facilitate a collaborative approach between all stakeholders.

Purpose

The purpose of this Management Plan is to:

- Outline how the various programmes will be recorded, the impacts on the transport network assessed and how CTOC will work with the programme holders to minimise the impact to the network.
- Define the Governance process that may be necessary where the programmes reduce the network capacity below the minimum levels of service.

Key Management Task's

Programme Scheduling

A key challenge for the CTOC team is to effectively review forward works to allow sufficient transport impact assessments to be carried out to facilitate the work. Through the rebuild process, the Forward Works Spatial Collaboration (FWSC) tool, a part of the Spatial Data Infrastructure programme being led by Land Information NZ (LINZ) and is a web based portal for the visual display of forward works information at a street by street level. The tool is designed to identify spatial and network clashes at least three months prior to the start of construction activity.

LINZ operates and updates the FWSC when schedule data is submitted by the programme holders. Programme holders are expected to:

- Provide schedule updates to keep the information live
- Submit the schedules on a 'best foot forward' basis. Therefore the schedule should always reflect the programme holder's construction method and associated impact on the transport network, sequence and timing, irrespective of whether Traffic Management Plans (TMP's) are approved or programmes fixed.

This is to allow an integrated planning approach to be taken to identify conflicts or interactions between the various work programmes and allow CTOC to review the overall impact on the transport network. An example of the FWSC can be seen below in Figure 1.

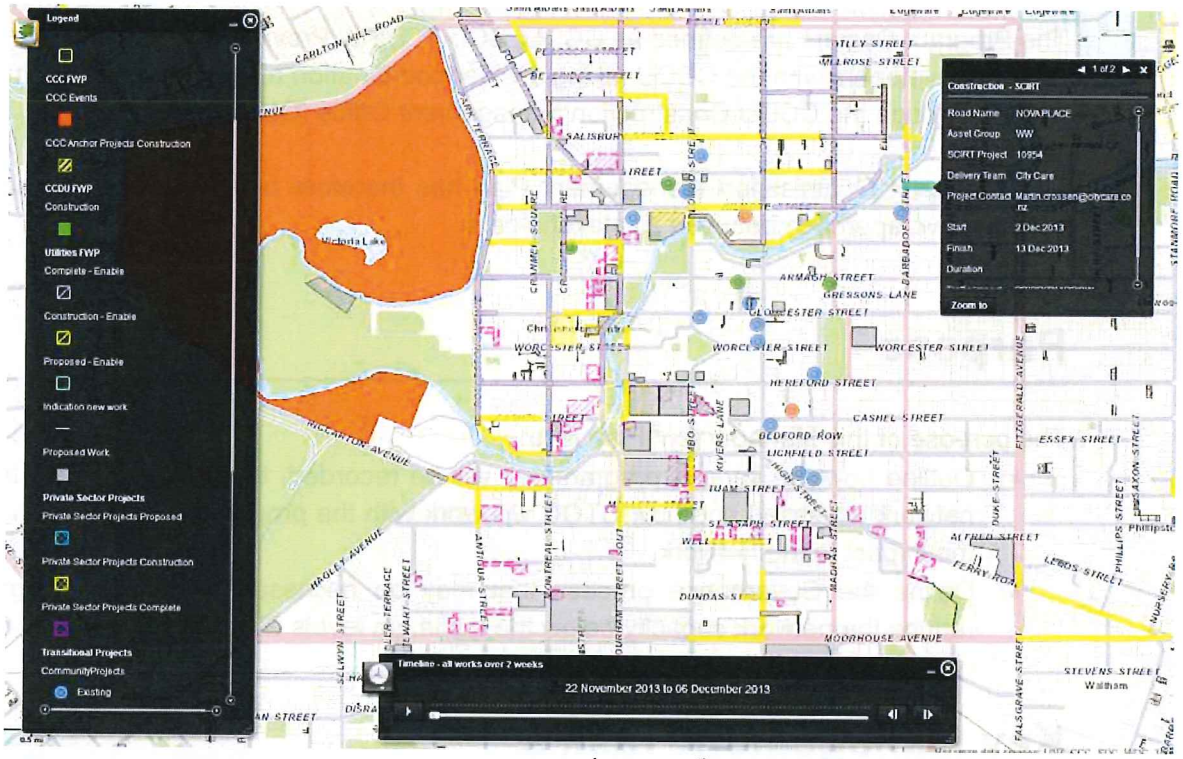


Figure 1 – FWSC screenshot for the period 22nd Nov – 6th Dec 2013

Across the city, and particularly in the central city area (bounded by the 5 Avenues), there are multiple publically funded and privately funded programme holders. The relationship of these programme holders and connectivity with the FWSC and CTOC is shown in Appendix A.

Transport Impact Minimisation Group (TIM)

Due to the number of programme holders, it was important that CTOC had direct coordination and support when reviewing the forward works and the effect of individual work sites on the transport network. As such, the Transport Impact Minimisation Group was formed as an advisory group to CTOC. The role of the TIM group and operating framework can be found in Appendix B.

The group includes representatives from CTOC, ECan, CCC (events coordinator) in addition to construction programme representatives from CCDU and SCIRT.

The group reviews the FWSC and identifies potential locations and times that the traffic network will be overly constrained. Identification of poor network performance will be undertaken by TIM with reference to the defined impact assessment process and the minimum network levels of service.

Traffic Impact Assessment & Traffic Modeling

A traffic-network minimum level of service assessment has been developed to determine the effect of the forward works programmes on the traffic network. This focuses primarily on the central city and effectively analyses the forward works programme on a week by week basis to determine the incremental loss or gain in network capacity compared to the previous week in addition to capturing the absolute cumulative effect of all rebuild work on the traffic network. Outside the central city, a more traditional approach is taken.

There are three levels in the network minimum level of service assessment:

1. Key route and screen-line capacity assessment
   This analysis considers the typical capacity of a route through the central city and then assesses the resultant loss in capacity as a result of planned forward works. This analysis considers the capacity of key routes block by block in a northbound, southbound, eastbound and westbound direction. This portion of the assessment identifies any planned sites which could potentially result in efficiency issues.

   The analysis also considers the minimum number of lanes across the CBD which are required to support northbound, southbound, eastbound and westbound movement across the central city. This is known as a screen-line assessment. This screen-line assessment will determine at which points in the rebuild programme the combination of planned sites will result in less than the minimum number of lanes required to support efficient movement across the city.

2. Traffic reassignment capacity
   This analysis is similar to the key route and screen-line capacity assessments but differs in that a simplified traffic model is used to estimate the likely reassignment (rerouting) from an over-capacity route to an alternate route. This assessment is particularly useful in understanding which alternate routes on a traffic network will

experience increased delay and congestion as a result of rebuild activity on a competing route.

3. Network accessibility assessment
   The most detailed level of traffic network assessment is that of network accessibility. This analysis presents a heat map of the entire transport network showing areas of relative high and low accessibility. This analysis is undertaken by measuring the impedance to a sample set of addresses across the network based on a number of pre-selected origins and destinations. As a general rule this analysis will show areas which are difficult (or impossible) to access as a cumulative effect of all rebuild activity on the network.

These assessments will be undertaken and presented to the TIM group for consideration on a fortnightly basis.

Traffic Minimum Levels of Service

A minimum level of service (LOS) for the traffic network is considered on the basis of providing sufficient number of traffic lanes to accommodate north-south and east-west traffic volumes with a specific focus on the peak AM and PM periods. This method recognises that there is some redundancy in the current transport system and works to identify when this redundancy is consumed, and congestion is likely to increase rapidly. All planned work will be assessed against the minimum LOS.

As the rebuild progresses, this assessment will be further developed as new traffic count/volume data is collected to provide a better understanding of the level of redundancy within the network.

Programme Optimisation

Prior to CTOC, the Road Controlling Authorities (CCC and NZTA) have required a minimum period for the submission of TMP's of 5 days prior to the work commencing.

Where a constraint was identified through review of a TMP, the Road Controlling Authority would reject the timing of the TMP or request changes to maintain network efficiency and safety service levels. This is still the case and CTOC are responsible for this process.

However, in the current earthquake rebuild environment, the aim will be to minimise rejection of TMPs to support the rebuild programme. Generally, any delay of a TMP's timing may have impact on cost and programme delivery for the programme holder, and due to the volume of work to be delivered, this could have significant cost or programme delivery impacts (and particularly to interdependent programmes). A balanced approach will therefore be needed to support both the rebuild process and provide minimum LOS on the transport network.

The primary method to minimise this is the submission of schedules into the FWSC to allow early consideration, impact assessment and programme optimisation during the planning phases of the projects, prior to submission of a TMP.

Therefore to allow early programme optimisation, the TIM group will review the outputs from the impact assessments against the minimum levels of service. Where minimum LOS cannot be maintained, the TIM group will work with the programme owner to investigate the possibility for re-optimisation of their schedule.

If re-optimisation or re-sequencing of work is not possible (i.e it is not possible to mitigate network constraints or programme clashes without incurring additional cost or have an adverse effect on the baseline programme) a governance decision will be requested.

The detailed process is shown in Appendix C.

Governance & Conflict Resolution

A Governance decision will be requested under the following circumstances:

- Where the publically funded programmes are directly affected by the constraint (either through other publically funded or privately funded programmes).
- Where minimum levels of service have been exceeded and the forecast effect on the transport network is considered unacceptable to the CTOC Manager
- The constraint cannot be resolved through programme optimisation
- There are cost and/or baseline programme implications to the rebuild

A business case will be produced in these circumstances by CTOC with input from the effected programme holders summarising:

- The impact on the transport system
- Proposals for additional messaging/traffic management requirements to mitigate the transport system impacts
- The associated costs or impact on construction programme for the various programme holders by delaying or altering the construction programme i.e. not accepting the additional requirements.

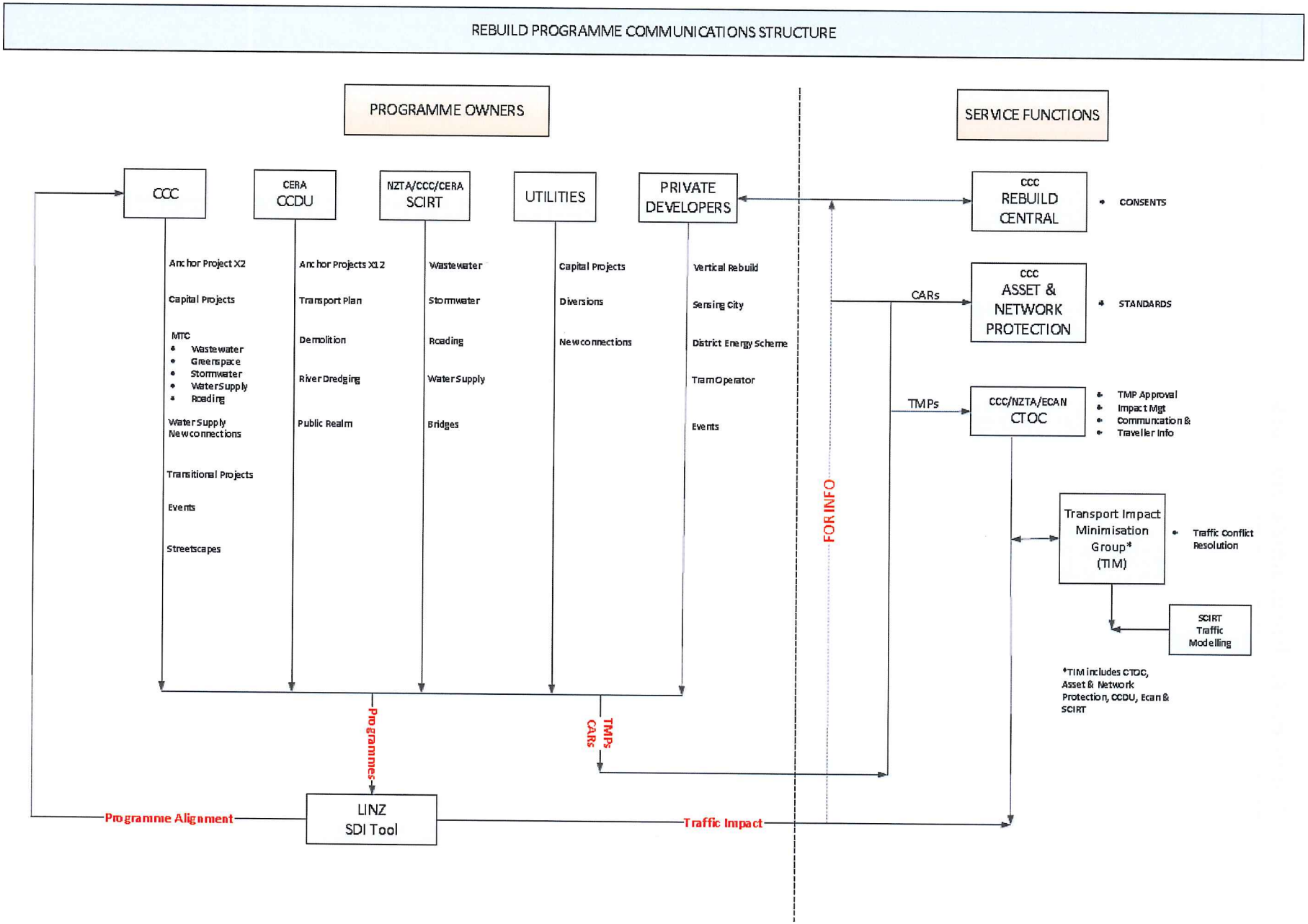
CTOC will then provide the business case to the Governance team for a decision to be reached to either:

- Accept the traffic system impacts due to the work activity in which case CTOC will seek to mitigate the effects to the extent possible via current activities including public messaging and advanced traffic management (changing the phasing of traffic signals).

- To reject the traffic system impacts due to the work activity and the programme owners accept any associated additional costs and changes to the baseline programme.

Where no publically funded programmes are affected, and the constraint affects the provision of the minimum LOS, then CTOC will act under their current framework for the Road Controlling Authority but through coordination with the CCDU CMO to liaise with the Privately funded programme holder affected. As this situation has potential for negative feedback via the public domain, in this situation CTOC will seek to engage with the CTOC governance teams as soon as possible in the spirit of no surprises

Appendix A: Programme Holders


REBUILD PROGRAMME COMMUNICATIONS STRUCTURE
PROGRAMME OWNERS
SERVICE FUNCTIONS
CCC
CERA CCDU
NZTA/CCC/CERA SCIRT
UTILITIES
PRIVATE DEVELOPERS
Anchor Project X2
Capital Projects
MTC
Wastewater
Greenspace
Stormwater
Water Supply
Roading
Water Supply Newconnections
Transitional Projects
Events
Streetscapes
Anchor Projects X12
Transport Plan
Demolition
River Dredging
Public Realm
Wastewater
Stormwater
Roading
Water Supply
Bridges
Capital Projects
Diversions
Newconnections
Vertical Rebuild
Sensing City
District Energy Scheme
Tram Operator
Events
CCC REBUILD CENTRAL
CONSENTS
CCC ASSET & NETWORK PROTECTION
STANDARDS
CARs
TMPs
CCC/NZTA/ECAN CTOC
TMP Approval
Impact Mgt
Communication &
Traveller Info
Transport Impact Minimisation Group* (TIM)
Traffic Conflict Resolution
SCIRT Traffic Modelling
*TIM includes CTOC, Asset & Network Protection, CCDU, Ecan & SCIRT
FOR INFO
Programmes
TMPs
CARs
LINZ SDI Tool
Programme Alignment
Traffic Impact

Appendix B: TIM Terms of Reference

Transport Impact Minimisation Group

Transport Optimisation of Forward Works Programmes

Terms of Reference

Date last updated – 2 December 2013

Group Purpose

1. Optimise forward activities programme to minimise the impacts of activities on the transport system. For context this is the first step in the diagram below:

Group Scope

2. Assess the transport impacts of all activities, for example road works and events, that affect the transport system.
3. Provide recommendations for activities including – nil impact (accept activity), investigate mitigation required, or programme change required.
4. Identify opportunity to optimise the transport system through management of planned events.

Group Participants

5. Group Convener:
   - 5.1.1. Ryan Cooney –Manager Christchurch Transport Operations Centre.
6. Group Chair:
   - 6.1. Simon Harty – CTOC Team Leader Temporary Traffic Management.
7. Group Secretary
   - 7.1. Mike Smith – CTOC Senior Traffic Management Coordinator (Acting).
8. Technical Advisors:
   - 8.1. Michael Blyleven – CERA Technical Specialist – Transport.
   - 8.2. Angus Bargh – SCIRT Transportation Planning Manager.
   - 8.3. Sam Wilkes – Ecan Team Leader Contract Management.
   - 8.4. Richard Attwood – CCC Events Development Manager.
   - 8.5. Sara Gulick - CCDU Infrastructure Coordinator Christchurch Central
9. Invitees as required.

Meeting Frequency

10. Weekly till inputs, both technical processes and data inputs, are established. Monthly thereafter.
11. To be arranged by the secretary.

Inputs

12. There will be a phased approach to data input requirements for this group.
    - 12.1. In the short term the group is to use appropriate data from any source that it can obtain. The most established source of data at current is the LINZ SDI Forward Works Coordination Tool.
    - 12.2. Long term the LINZ SDI Forward Works Coordination Tool, though it's various versions is to be the official source of data.
    - 12.3. Events planning schedules
13. Technical reports, models, traffic data as appropriate including inter alia:

13.1. CTOC Temporary Traffic Management Efficiency Toolkit Version 3.
13.2. Christchurch Transport Model (CTM), Christchurch Assignment and Simulation Traffic Model (CAST), Sidra.
13.3. NZTA Traffic Monitoring System, CCC Traffic Count database.
13.4. CTOC traffic signal data
13.5. Real time monitoring information.

Outputs

14. The output from the group is to be officially recorded minutes. These shall record inter alia:
    14.1. Participants.
    14.2. date of review.
    14.3. the programmes reviewed and their level of maturity.
    14.4. recommendations.
15. These minutes shall be circulated to the CTOC Manager (who will circulate to CTOC Steering Committee), CTOC Team Leaders and the affected programme owner's representative.
16. Where formal reporting is required a transport impact section of an impact report shall be prepared.

Process for Programme Review

17. To be developed by the group and approved by the Group Convener.
18. The programme owners will be proactively be consulted with regarding the review process.
19. Process is to consider two perspectives as appropriate:
    19.1. Traffic Engineering – shorter run effects that account for effects of a highly dynamic transport system. Short run is typically shorter than one week and includes network changes and where appropriate temporary travel demand changes,
    19.2. Transport Planning – long run effects that account for a semi stable transport system. Long run is typically longer than one week and assumes the travel demands as well as the network capacity are stable.

Escalation Process

20. Escalation will be required in two situations:
    20.1. The group have not been able to reach a common position regarding a matter.
    20.2. The group collectively identifying a matter that is likely to be contentious due to cost, programme or transport implications. This matter may be between inter alia:
        20.2.1. The transport system operators (CTOC) and the programme owner.
        20.2.2. Programme owners.
21. The escalation process is as follows:
    21.1. Group Chair reports to Group Convener and engages with the programme owners appropriate representative.
    21.2. Group Convener in conjunction with programme owners appropriate representative reports to the CTOC Partners Senior Managers (as a collective) and Programme Owners Managers or CTOC Board and Programme Owners Governance Body as appropriate. Where this is required, papers covering a number of facets including transport, cost, programme, political implications will be collectively developed.

Outside Groups Scope

22. Further matters as established by the Group and approved by the Group Convener.
23. The following specific matters unless changes are approved by the Group Convener:
    - 23.1. Programme resourcing/sequencing optimisation.
    - 23.2. Avoidance of physical rework optimisation.
    - 23.3. Project optimisation.
    - 23.4. Project approval.
    - 23.5. Project implementation optimisation.
    - 23.6. Escalation process change.

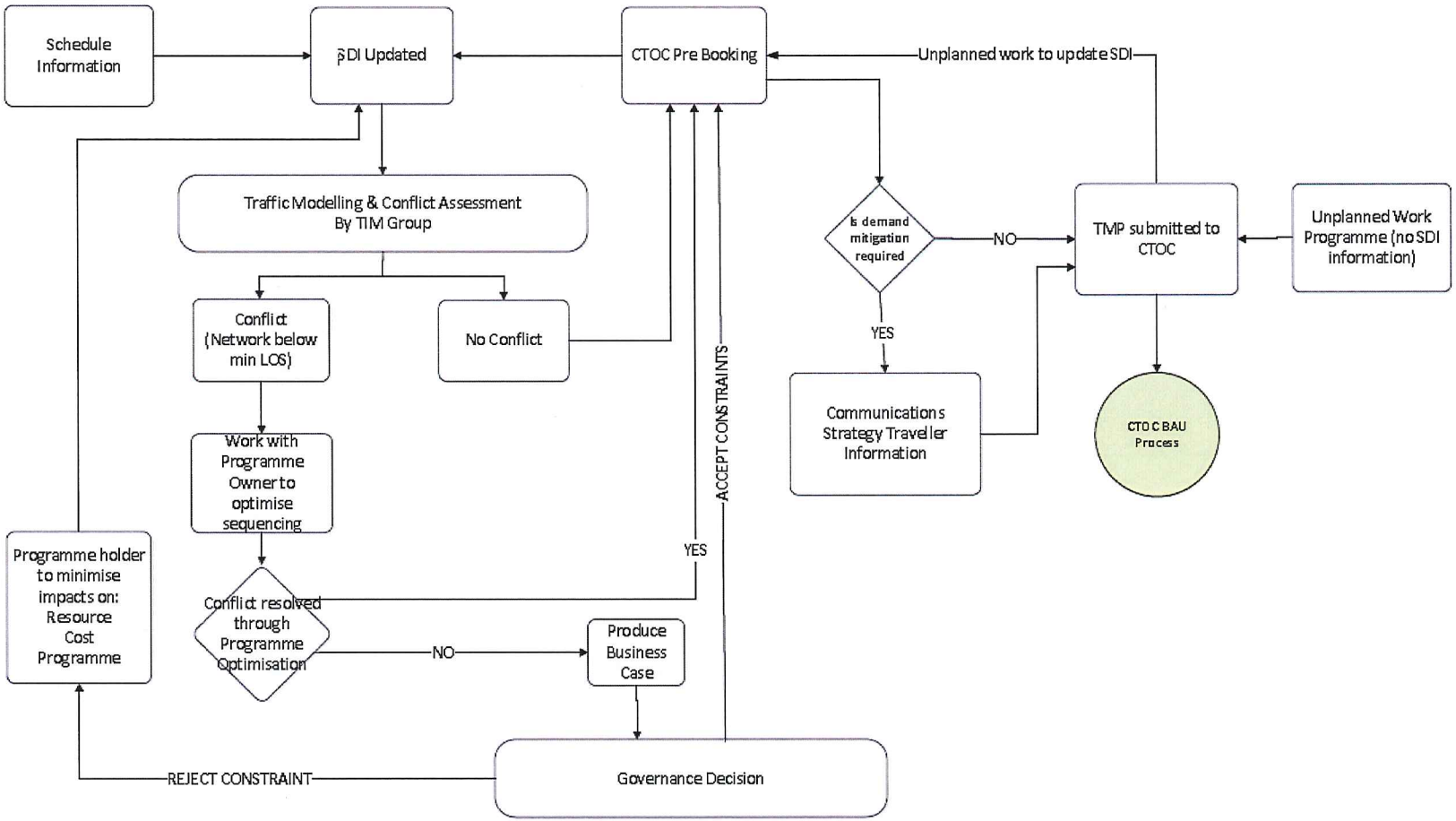
Appendix C: Optimisation Process

CTOC Version 1.0 - 5/12/2013

Author: Ryan Cooney
Contributors / Reviewers:

- Process Owner: CTOC
- Frequency: As required
- Purpose: Transport Optimisation Process

Transport for Christchurch
www.transportforchristchurch.govt.nz
operated by Christchurch Transport Operation Centre



Appendix B – Central City Engagement Plan

SCIRT
Rebuilding Infrastructure

Central City programme

Engagement Plan (as at 18 July 2013)

Contents

1. Purpose of this document

The purpose of this engagement plan is to outline the communication and community engagement that will support SCIRT's central city programme and keep the people of Christchurch informed about this work.

It is intended that this be a living document that provides practical guidance about the actions required of the communication team. As such it will be developed iteratively and be amended as the project progresses.

2. Background

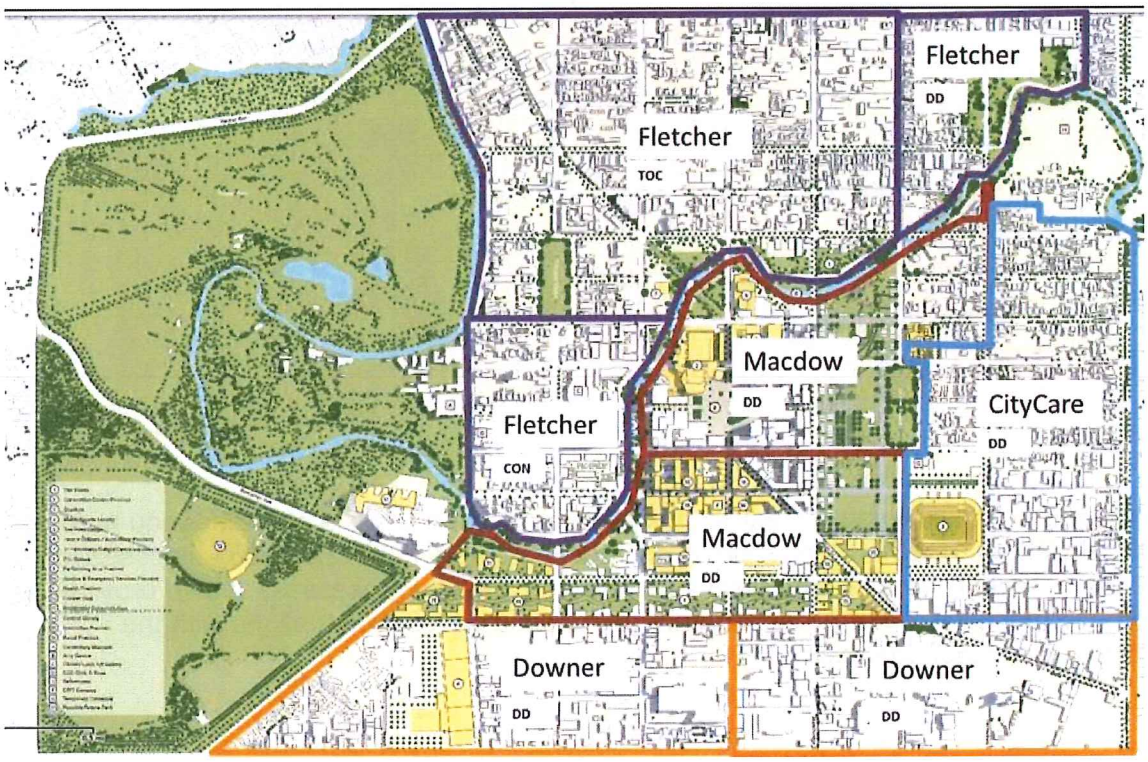
SCIRT began work in the central city in early-mid 2013.

SCIRT is coordinating its rebuild work in central city with other agencies working in this space. This work is being undertaken by the Integrated Services Team (IST). Richard Topham (Project Definition Manager) and Dave Bain (Utilities Coordinator) are leading this and have drafted a programme of work for SCIRT's rebuild work in the central city.

A detailed street level programme for wastewater will be finalised in mid 2013. A detailed street level programme all work will be finalised in September 2013.

SCIRT's programme is broadly divided into quadrants, with four delivery teams each responsible for part of the city:

- Fletcher (northern sector)
- City care (eastern sector)
- Downer (southern sector)
- MacDow (centre)

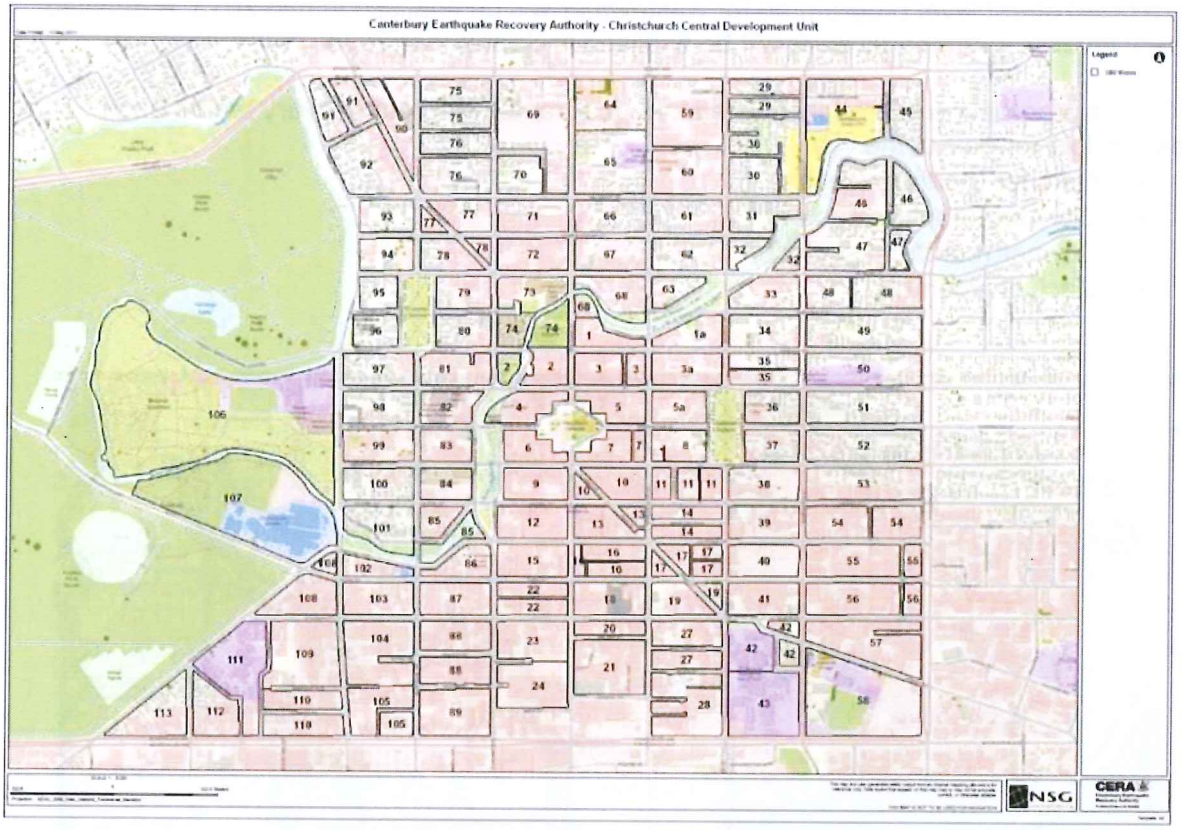


SCIRT has set up a Central City Communication Leadership group

- Purpose - To develop and deliver a SCIRT communication plan for the central city. To ensure members of the group are well informed about work in this area
- Structure - Members include leads and/or key communication staff from each of the four delivery teams and Integrated Services Team
- Operation - The group will exist until work in the central city is complete. It is led from the IST. Meet weekly Mondays 3-4pm. A representative attends the monthly Central City ECI coordination meetings.

CERA has set up the Central City Development Unit (**CCDU**). It has two groups that SCIRT is working with.

- The Construction Management Office ensures the rebuild proceeds in a coordinated way
- The Investment Relations Group works with private sector developers in the central city. This group plans to hold 'block parties' that will provide a forum where potential developers can get information about the central city. See map below for CCDU 'blocks'.



Council has set up a 'Rebuild Central' office, which is located in the old Katmandu building in Lichfield Street. Rebuild Central provides case managers to developers/businesses to guide them through Council processes (e.g. building consent processes). It also provides a coordination function, determining whether a proposed development aligns with the programmes of other agencies.

3. SCIRT's communication vision for the central city

To provide the people of Christchurch with outstanding communication and community engagement that grows SCIRT's reputation, on behalf of client organisations, as an

organisation with integrity. Outstanding communication will meet the needs of those affected by our works by being accurate, timely, accessible and coordinated.

4. Communication promise

Best practice community engagement requires the provision of **accurate, timely and accessible information**. It also requires clarity around what people can expect from SCIRT. To manage these expectations SCIRT will need to articulate what aspects of the rebuild are negotiable.

- Non-negotiable: Timing of the programme
- Negotiable: Aspects of on-site planning may be negotiable, particularly with respect to the use of road space. SCIRT commits to:
  - Only taking up enough road space necessary to do the work, while providing a safe on site work environment.
  - Only removing parking if necessary and identify alternative parking options

The Alliance Agreement objectives provide guidance in determining how SCIRT will engage with the people of Christchurch. These objectives are to:

- Maintain an open and honest dialogue with all residents over the rebuild effort:
  - Work to ensure messages to communities are coordinated with other rebuild efforts
  - Be proactive with communication and make it face-to-face where possible.
  - Do what we say we will do
  - Communicate in simple language
- Maintain high levels of customer service in the rebuild effort:
  - Build rapport with affected residents and go the extra mile where required.
  - Coordinate all works to minimise disruption to the customer.

In its communications, SCIRT will:

- Be approachable, listen, and be open and honest
- Consider our communities (including businesses) and minimise our impacts whenever this is possible within our operating constraints
- Make the hard technical decisions and be accountable for them.

5. Communication goals

1. To provide accurate, timely and accessible information
2. To give confidence that SCIRT's rebuild is coordinated and well considered
3. To encourage key stakeholders, such as business leaders and elected representatives, to become advocates for SCIRT's work
4. To manage expectations with business, residents, motorists and other stakeholders
5. To build relationships between the residents/businesses in each quadrant and the relevant delivery team

6. Desired communication outcomes

- To ensure stakeholders and community understand the work programme and what is involved with the rebuild of central city infrastructure. Particular focus will be given to the criticality of programme timeframes, effects of construction and traffic management on achieving the overall rebuild of the central city.
- To ensure stakeholders and community are appropriately engaged around the programme and that communications are delivered in a way that meets their needs.

The level of engagement will be determined by referencing the International Association for Public Participation (IAP2) community engagement spectrum and fit with the SCIRT rebuild plan.

- To reassure those who have businesses and/or work in the central city that SCIRT will minimise the effects of the work as much as possible and will work with them to support continued business.
- To reassure residents that we will minimise the effects of the work as much as possible and keep them informed about upcoming work near their home.
- To provide and outstanding level of communication that maintains SCIRT's reputation as an organisation that holds the people of Christchurch at the heart of the rebuild.

7. Communication approach

Communication will have two parallel approaches:

- At the operational level communication will be targeted at those affected by SCIRT works. It will also focus on each delivery team developing relationships with the **local** people that live or work in the quadrant that they are rebuilding. Each project with be supported by a Communication Control Plan (CCP).
- There will also be a **city-wide** approach. It will be targeted towards all people who visit, pass through or represent interests in the central city, as well as those that live or work there. City-wide communications will be guided by this document and will support the operational delivery of the programme

8. Communication activity/tools

City wide communications	Local or project communications
Overarching tools • A central city rebuild visual identity (in progress) • Business information pack • Hubs e.g. SCIRT display board and business information packs at Rebuild Central, Council info centre (Rolleston Ave)	**Overarching tools** • Central city is divided into four areas, with a delivery team allocated to each
Written (hard copy) • SCIRT central city pamphlet*(in progress) • Q&As • Signage e.g. billboards • Posters* e.g. at bus stops, expos • Mass media e.g. printed ads, opinion pieces • Other stakeholder publications* e.g. CERA newsletter, Avenues, Chamber of Commerce newsletter (1900 recipients) • Information sheets • Contact cards/magnets	**Written (hard copy)** • Work notices and updates* • Signage* e.g. work site, 'businesses open' • Posters* e.g. on site • Information sheets* e.g. business pack (in progress) •

Written (electronic)
• SCIRT website*
  ○ 'SCIRT in the Central City' button (programme, map etc)
  ○ Link to the LINZ government development plan portal
• SCIRT inbox*
• SCIRT city wide e-newsletter* e.g. to include central city update (tbc)
• Other websites e.g. Transport for Christchurch, LINZ portal (under development)
• Twitter*
• Response to other agencies Facebook posts* e.g. Stuff
	Written (electronic)
	• Email* e.g. group email updates
	• Email traffic alerts (tbc)

Verbal (remote) • Phone*	**Verbal (remote)** • Phone*
Verbal (in person) • Key stakeholder briefings* e.g. Council customer services reps, CCDU, CCBA • Community meetings* (large and small) e.g. street meetings, CCDU block parties • Staffed SCIRT display at Rebuild Central (tbc)	**Verbal (in person)** • Property to property visits/meetings* • Community meetings* (large and small) e.g. street meetings, CCDU block parties • Site walk overs* • Community site tours •

• Events (e.g. drop-in, expo, cycle tours)	
Audio • Radio advertisements • Regional TV • Online presentations (SCIRT website)	**Audio** •
Visual • Photographs* • Video* e.g. presentations (Camtasia) • Posters* • TV stories e.g. Canterbury TV	**Visual** • Photographs* • Video* e.g. time lapse footage • Posters*
Collateral/Resources • Central City business information packs (tbc) • Stickers* e.g. bumper stickers • QR code - to link hard copy to website (tbc) •	**Collateral/Resources** • Central City business information packs (tbc) •
Support for internal stakeholders • Central City Communication leadership group • Key messages • Charter with CCDU/CCBA	**Support for internal stakeholders** • Central City Communication leadership group

** Indicates tools that are currently in use*

9. Stakeholders

Stakeholder	Needs	Relationship manager	Communication approach and contact
Client			
SCIRT/Client Communication Working group (CWG)	To have information to speak with confidence about the situation, distribute information to others, provide context for other decisions	Annemarie Mora (AM)	Weekly meetings
CCDU Communications and Stakeholder Manager (Tina Nixon)	To have information to speak with confidence about the situation, distribute information to others, provide context for other decisions	AM	Weekly meetings with Tina Nixon Tina.Nixon@cera.govt.nz 027 223 2789
CCDU Investment Relations Group communications	To have information to speak with confidence about the situation, distribute information to others, provide context for other decisions	Mary Hay (MH)/ Lisa Perry (LP)	Meet as needed Contact: Sheila McBreen-Kerr
CCDU Construction Management Office	To have information to understand the work programme and its impacts on the overall rebuild programme.	Richard Topham and Dave Bain	Alistair Pearson
Christchurch Traffic Operations Centre (CTOC)	To be aware of SCIRT work and coordinate information provision. Coordination of Transport for Christchurch website	Richard Topham, Angus Bargh	Sonia Pollard Traveller Information Team Leader
Christchurch City Council - Rebuild Central office	To have information to understand the work programme and its impacts on the overall rebuild programme	MH	Permanent SCIRT presence • On site display stand • Part time staffing (tbc)

Christchurch City Council – Education team	To have information to understand the work programme and its impacts on the overall rebuild programme	MH	Kathy Graham Road Safety Co-ordinator
Christchurch City Council and CERA – customer services teams	To have information to understand the work programme and its impacts on the overall rebuild programme	MH	Margaret Finnie (City Council) Glenys Thornhill (CERA)

***Key stakeholders** e.g. business leaders, community leaders	*for the purpose of this document, a key stakeholder is an influential person/group that can potentially act as an advocate for SCIRT and thereby facilitate the delivery of the programme		
Private sector developers (via CCDU and Rebuild Central)	To have information to understand the work programme and its impacts on the overall rebuild programme	Richard Topham and Dave Bain	Direct and through agencies and networks
Central City Business Assoc	To work collaboratively with SCIRT and have information to effectively lead their members and support the community through the programme	Richard Topham, Dave Bain and AM	Develop a shared communication charter.
Christchurch Chamber of Commerce	To have information to effectively lead their members/communities and support the community through the programme	AM, MH, LP	Tbc
Ngai Tahu	To be consulted about projects that will affect culturally sensitive areas	Anita Collie MH	As part of consent process Briefings
CanCERN, Red Cross, CETAS etc	To have information to effectively lead their members/communities and support the community through the programme	MH	Briefings
Customer call centres		MH	Briefings

Representative groups – elected (central and local government)	To have information to effectively lead their constituents and support the community through the programme	IST and DTs	Advice via client liaison group, seminars, memos
Representative groups – non-elected e.g. residents groups, Spokes, Royal Foundation for the Blind	To have information to effectively lead their members and support the community through the programme	IST and DTs	Meet on request
Community groups e.g. sports groups, church groups e.g. RSA	To have information to effectively lead their members and support the community through the programme	IST and DTs	
Internal stakeholders e.g. SCIRT and Council staff	To have information to support implementation of the programme	IST and DTs	
Delivery teams	To have information to effectively lead engagement and support implementation of the programme	DTs	Direct and through Delivery Managers
Schools (Boards of Trustees, principals, parents, students)	To have the information required to minimise disruption, and maximise safety, for school users.	DTs	On project by project basis, via visits to schools
Media	To receive accurate information about the programme	Frances Adank	SCIRT media spokesperson Amanda Healy (refer SCIRT Media Protocol)

General public			
Those who live and work in the central city		IST and DTs	
Regular through traffic e.g. commuters, taxi, parents		IST and DTs	
Occasional through traffic e.g. tourists (and operators)	Canterbury tourism	IST and DTs	
Transport operators e.g. bus, trucking companies, couriers	Red Bus	IST and DTs	

Local businesses – small scale e.g. dairy, crèche		DTs	
Local business – large scale e.g. The Warehouse		DTs	
Local residents		DTs	
Cyclists (and advocacy groups)		IST and DTs	
Pedestrians and other footpath users (and advocacy groups)		IST and DTs	

Sensitive Receptors : Northern Sector (Fletchers)			
Canterbury Cheesemongers (Montreal Street)		DTs	
The Coffee House (Montreal Street)		DTs	
Christchurch Civic Offices (Hereford Street)		IST and DTs	
HSBC Building/CERA offices (Worchester Street)		IST and DTs	
Rebuild Central (Lichfield Street)		IST and DTs	
Sensitive Receptors : Eastern Sector (City Care)			
Sensitive Receptors : Southern Sector (Downer)			
Police (St Asaph Street)			
Hospital (St Asaph/Hagley Ave)			
St Johns			
Catholic Cathedral (Ferry/Barbadoes)			

Marian College (Ferry/Barbadoes)			
Hagley College (Hagley Ave)			
Christchurch Polytech (Madras)			
South City/New World (Durham/Colombo)			
Paknsave (Moorhouse)			
Countdown (Moorhouse)			
Restaurants on St Asaph and Madras			
Barretta restaurant			
Café Valentino			
Catholic Cathedral church			
Sth City Christian Centre			
BMW car yards			
Nissan car yards			
Moorhouse Ave car yards			
Wilsons car parking lots			
CCC car parking lots			
EPIC BNZ (St Asaph/Manchester)			
Smiths City (Colombo)			
Baby City (Colombo)			
Sensitive Receptors : Central Sector (McConnell Dowell)			
Property owners		DTs	

Businesses o IRD building in Cashel Street, o HSBC Tower in Worcester Boulevard (CERA) o Civic Building in Hereford Street, o Technology Centre, o Rendevouz Hotel / Ibis Nicky – Innovation precinct blogger			
Developers o Antony Gough, o Ernest Duval, o Miles Middleton o Westpac and Goodman Group o Leighs Construction and the Buchan Group, o Lichfield holdings o properties around Poplar Street earmarked for the innovation precinct, o Devonia Holdings, o Tim Glasson o Angus Macfarlane			
Retailers – o Ballantynes, o Restart, o Alice in Videoland, o New.Regent Street retailers South City			
Constructors o Hawkins Construction o CERES Environmental Naylor Love			
Commercial tenants			
Residents Group AND Advocates			
Community groups - RSA			

Sports group			
Church groups – Oxford Baptist Church (celebrating 150th in October 2013			
Tenants			
Those who live and work in the central city			
Community at large			
Regular through traffic			
Occasional through traffic			
Transport operators e.g bus, trucking companies, couriers			
Red Bus Metro Tour operatprs			
Cyclists			
Pedestrians and other footpath users			
Tourists/operators			
Stakeholders o Canterbury District Health Board o Ngai Tahu			
Government Departments – Ministry of Justice (Cambridge Terrace o Courthouse and Ministry of Education o Emergency Services – Fire and Police			
Christchurch City Council, as owner			

Community leaders o Hagley- Ferrymead Community Board members Christchurch City Council (as client and stakeholder			
Internal stakeholders e.g SCIRT and Council staff, McConnell Dowell Construction			

sensitives: Antony Gough – The Terrace Leigh Construction and the Buchan Group, New Regent Street retailers Tram and bus operators Canterbury District Health Board Ministry of Education Ministry of Justice Emergency Services – Fire and Police Cathedral Grammar Christs College Christchurch East The Christchurch Press Christchurch City Council Ngai Tahu Canterbury Historic Places Trust			

10. Communication risks

Risk	Mitigation
Internal risks	
• Lack of coordination within SCIRT	• Set up monthly Central City ECI coordination meetings (led by Richard Topham) • Generate a schedule of internal and external meetings
• Lack of coordination with CCDU/Council and private property developers	• The IST project leads have been working with CCDU and the City Council, to ensure SCIRT's programme is also coordinated with developers. • CCDU/SCIRT - Anchor Project Design Co-ordination weekly meetings (communications rep to attend) • Provide a SCIRT presence at Rebuild Central • Development of a joint strategic communication plan between the SCIRT, CCDU, CCC, to include: o Charter – between the parties. o Protocols – between the parties and additional SCIRT specific ones o Key messages – between the parties and additional SCIRT specific ones o List of key contacts/ organisational chart with contact details – for all parties to share o FAQ's – between the parties and SCIRT specific ones o Business Pack – SCIRT specific but can be shared if required. •
• Lack of coordination with the CCBA	• Attend the Central City Business Association Board Meeting (Chaired by Antony Gough).
• Lack of understanding of CCBA decisions/actions	• Receive CCBA meeting minutes
• Central City tram route (planned reopening unconfirmed date) •	•
• Lack of consistent communications between delivery teams	• The Central City Leadership group (CCWG) to have oversight of all communications in the central city • Delivery teams will establish shared communications processes/ protocols/ templates, agreed by all

	delivery teams, to ensure customers receive the same level of service • Delivery teams will prepare Communication Control Plans for all projects. Critical projects will be brought to the CCWG for review.

External risks	
• Traffic impacts - Lack of acceptance of high traffic impacts	• High levels of information provision to assist road users navigate around the city e.g. • Work notices in letterboxes • Meetings with businesses and residents • Vehicle access restriction notices • Freecall hotlines • Email • Signage on work sites • Advertising in newspapers • E-newsletters (subscribe at www.strongerchristchurch.govt.nz) • Twitter @SCIRT_info • www.strongerchristchurch.govt.nz website lists all SCIRT work throughout the city • www.transportforchch.govt.nz website lists all traffic changes in the city • Variable message signs alert road users to traffic changes
• Difficulty with communicating the complexity of traffic impacts of all the agencies involved in the rebuild.	• Active promotion about SCIRT work through the Transport for Christchurch website, Twitter and other applications (There is also a mobile version of the site and links and links to iphone and Android apps) • Development of a public web portal, led by Land Information New Zealand (LINZ), that brings together all government development plans. A first draft is expected for internal review in September 2013, with public release anticipated around the end of the year.
• Frustration from business because of loss of trade	• Visits to all businesses with provision of resources to assist them (the business information pack)
• Poor level of understanding by general public, and business community, about the complexities of construction works	• Produce a 'Civil Engineering 101' fact sheet and series of posters:
• Lack of clarity around what aspects of the construction methodology are	• Provide clear key messages around negotiable aspects of the central city

negotiable	rebuild

• Perception of poorly coordinated works	• Provide clear key messages around our robust prioritisation process and the coordination with other rebuild agencies
	• Provide a SCIRT presence at Rebuild Central
	• Produce an 'Integrated Planning 101' fact sheet explaining:
	  ○ Booking road space and traffic management.
	  ○ Developing a programme and the other key players.

• The disruption caused by physical works being exacerbated by (perceived) poor communication •	• Face to face communication, where possible
• SCIRT works/traffic management disrupting community events in the central city, such as the Ellerslie Flower Show	• Identification of community events around the city
• Lack of understanding by business leaders about construction methodology of effects	• Prepare construction methodology fact sheet • Suggest that CCBA invite businesses that have been affected by SCIRT's work (e.g. Eastgate Mall, Edgeware shops) speak with them to describe the experience.

• Reach/cost of distribution of written materials	• Use other agencies publications as vehicles for SCIRT central city communications e.g.
	  ○ CCDU's 'Invest Christchurch' (distributed monthly)
	  ○ Share an Idea newsletter (contact is Petrea Downey 941 8529)

• Potential impacts on heritage buildings from construction activities, such as sheet piling.	• Pre-condition assessment reports need to be considered on a project by project basis, with particular reference to heritage buildings.

11. Community events calendar

- Calendar is kept in SCIRT Salesforce database

12. Key messages

Central City Rebuild
Joint Agency Key Messages

26 August 2013

Scale and intensity

- Rebuilding the city is a huge task on a scale never seen before in New Zealand. It will be busy because that's what's needed to get the job done.
- We're working fast on underground services and roads now so work can start soon on key community, business and residential projects.
- The rebuild of Christchurch's Central City is unprecedented and you are part of it *(throw to relevant website for more information)*.

Planned and coordinated

- There is a plan; everyone is working together to rebuild our Central City:
    - Christchurch City Council, Canterbury Earthquake Recovery Authority and NZ Transport Agency are working with SCIRT to coordinate infrastructure repairs and manage traffic.
    - Christchurch Central Development Unit is managing the rebuild of key community facilities and coordinating private development within the four avenues.

Alignment and timing

- Doing things in the right order is important: fixing underground services and roads comes first, followed by major building projects, and we're coordinating schedules so the rebuild progresses as quickly as possible.
- We're using purpose-build technology to make sure we've got our planning and coordination right.

Traffic

- You'll see dozens of work crews in the Central City as work ramps-up. We ask for your patience as you drive through the city – we're in this together and we all want to rebuild the Central City as quickly as possible.
- Key agencies are working to keep traffic moving. Plan ahead, stay informed and allow extra time. Find out the latest road information at www.transportforchristchurch.govt.nz

Open for business

- The Central City is open for business during the rebuild – be part of it. We encourage you to make the extra effort to support Central City businesses.

Generic messages

- There is about $160 million worth of damage to this infrastructure in the Central City, the area between Bealey Avenue, Fitzgerald Avenue, Deans Avenue and Moorhouse Avenue.
- The infrastructure rebuild is critical to supporting the renewal of the central city.
- Our planning is robust.
- This is a complex and challenging programme of work. We are working closely with other agencies to deliver a coordinated approach to the central city rebuild
- **How much damage is there to the infrastructure in the CBD? What are we dealing with?**

The majority of the wastewater pipes in the Central City were damaged during the earthquakes, particularly those constructed from earthenware materials, all of which were built in the 1880s. Significant damage was also caused to the Stormwater network, pavements, footpaths and bridges.

- Work will affect nearly every street in the Central City at some time. The time needed to finish each piece of work will depend on the level of damage.
- Generally wastewater will be fixed first as it is deepest underground service. To minimise disruption, SCIRT will then repair the stormwater and fresh water pipes before repairing roads in a 'one pass' approach wherever possible

Programme

- SCIRT is working closely with Council, CERA, utility providers, private developers and land owners to coordinate and schedule the horizontal rebuild as part of the wider recovery process.
- Work is being timed to support the delivery of other work such as the Anchor Projects and large private developments such as the Retail Precinct.
- A detailed street level programme for wastewater will be finalised in mid 2013.
- A detailed street level programme all work will be finalised in September 2013.
- SCIRT's work programme in the central city is coordinated with other agencies
- SCIRT couldn't proceed with the work inside the cordon due to safety hazards
- **How are we coordinating with other work that is happening in the Central City?** We are currently working with the CCDU and the CCC teams to coordinate our work with other works programmes to provide an integrated approach to rebuilding and repairing the infrastructure.

Business

- We realise that access and parking for business is a critically important. We aim to minimise disruption as much as possible and work with businesses to mitigate the effects of our work
- We will work to support local businesses during these works.
    - We talk to business about their needs e.g. parking and access and keep them updated about progress and changes
    - We will provide support for businesses to communicate the impact of the works on their customers
- We realise access and parking is critically important to business. We will do what we can to support you in this.
- SCIRT is actively working to support local businesses:
    - We provide businesses with a checklist outlining when, where, why, and how our work will occur well in advance so you can prepare
    - We talk to business about their needs e.g. parking and access
    - We keep businesses updated about progress and changes
    - We provide a key contact person and a hotline number
    - We offer help businesses communicate with their customers by offering posters information hand outs
    - We encourage people to support businesses in the CBD with advertising and website stories

Traffic management

- Traffic management plans are prepared by SCIRT and approved by CTOC
- Traffic management plans create a safety zone around the work. The aim of this is to both keep workers and other road users safe.

- We will put robust traffic management measures in place to support your travel around the central city during these works
- We will do our best to minimise delays but motorists need to plan for their journeys.
- We will talk to those directly affected by any road works to minimise disruptions where we can
- **How do we ensure that the city can cope with the traffic impacts?**
  Extensive modelling and planning is done to ensure that delays are minimised and the work programme is optimised to keep the traffic moving. However, with work of this nature there will be traffic delays while the work takes place and you may need to allow extra time to get between your destinations.

Traffic issues

- Temporary traffic management (signs, cones, barriers and fences) helps keep road workers and road users safe. There will be lane reductions and sometimes a street will be temporarily closed. Often our work requires us to remove parking.
- Careful though goes into all traffic management decisions. SCIRT works with Council, CERA and NZTA to understand the traffic impacts for each worksite and also the combined impact of all worksites across the network.
- There is a limit to the number of work fronts that can be open at one time, while allowing traffic to continue to flow
- While SCIRT attempts to minimise disruption, there will be traffic delays
- Motorists need to plan their journeys and make considered choices about how and when to travel

Construction methodology

- SCIRT will talk to people directly affected by road works so that disruptions can be minimised. In some instances the way work proceeds can be altered to reduce disruptions e.g. working in school holidays
- SCIRT crews work at night in particular situations when it is safe and critical to do so. For example, CCTV footage inside pipes or brick barrel pipe lining often has to happen when the liquid level in pipes is low – when most people are in bed. Busy intersection work may also happen at night, but generally night work is limited because:
  - Brightly-lit roadworks and noisy machinery at night are intrusive on the community, particularly when there are people living nearby.
  - Night work is less productive, costs more and is more dangerous for both road users and workers. It is difficult to light trenches adequately at night.
- SCIRT plans its work to minimise impacts while still getting the rebuild done. Unfortunately the nature of the work means that some dust, noise, temporary traffic changes and changes to access are unavoidable.

Safety

- Because safety is paramount we are restricted to working outside the cordon
- Traffic management is required to ensure the safety of our workers
- Slow down around road works
- Keep clear of road works
- You don't have to wear high-vis to be a rebuild hero – we all have our part to play in the rebuild

Progress and planned works

- **What is already underway?**
  Wastewater repairs are already underway north of the Avon River within the 4 Avenues as well as an extensive programme of relining and strengthening of brick barrel trunk sewers to provide network stability for the wider rebuild programme.

- **Who will be working in the city? Where and when?**
  Due to the extent of the damage and the prioritisation of the work to support the delivery of other works programmes, there will be multiple delivery teams undertaking the infrastructure repairs within the central city at any one time. This will continue through to mid-2016 to complete the repairs.

- **What impacts will there be? What should people expect?**
  Traffic lanes will be restricted during our work under temporary traffic management. This work will affect every business at some point in time and it will be a challenge for many businesses. It will be necessary that SCIRT work with the CCDU, the CCC and the business owners to minimise disruption as much as possible, but there will be noise and dust along with heavy machinery whilst this work is undertaken.

13. Action plan

Date	Task	Actions	Status
May 2013	Work underway in the northern and southern sectors	Delivered as per each CCP	Ongoing
June 2013	Meet CCDU communication advisor to discuss SCIRT's central city programme	IST - Mary/Annemarie 29 May	Complete
	Develop SCIRT central city pamphlet	Kristin developing content	Underway
	Q&As on the SCIRT website	AM/MH/LP	
	'SCIRT in the Central City' button	AM/KS	
	Generate a schedule of internal and external meetings	MH	Underway
	SCIRT display board to Rebuild Central	MH	Underway
July 2013	SCIRT programme of work to website		
	Development of a joint strategic communication plan between the SCIRT, CCDU, CCC	AM/MH/LP	
	Produce a 'Civil Engineering 101' fact sheet and series of posters, e.g. o Dewatering o Trenching o What's under the road? o The tools for the job o Health and Safety o Traffic management	AM/MH	Underway
	Produce an 'Integrated Planning 101' fact sheet explaining: o Booking road space and traffic management. o Developing a programme and the other key players.	AM/MH	
August 2013			
September 2013	LINZ is working with SCIRT to build a public web-based 'portal', which will bring together all government development plans. This is being led by Julian Carver. The first draft will be available for internal review in September 2013, with public release anticipated around the end of the year.		
29 September	central city street walk through		

14. Central city meeting schedule (tbc)

Monday	Tuesday	Wednesday	Thursday	Friday
CCDU/SCIRT - Anchor Project Design Co-ordination 1-2.30pm (CERA, CCC, SCIRT tech & IST comms)				
Central City Communication Leadership group 3-4pm (IST & DT comms)				

Additional meetings:

- CCDU/SCIRT communication managers' operational group meetings (AM) – day tbc
- Monthly Central City ECI coordination meetings (Richard Topham)

Appendix C - SCIRT Central City Utilities Coordination and Shared Corridors Project Execution Plan

Stronger Christchurch
Infrastructure Rebuild Team

Central City Utilities Coordination and Shared Corridors

Project Execution Plan

File name and version	CC Utilities V4
Location	SCIRT
Version Date	16 October 2013
Revision Notes	Integral component of the Central City Implementation Plan
Project Sponsor	CERA/CCDU/CCC
Project Directors	Richard Topham, Alistair Pearson, Ross Herrett
Project Manager	Dave Bain
Document Controller	TBA

Table of Contents

1. INTRODUCTION

SCIRT is working with the CERA Central City Development Unit (CCDU) and CCC to ensure services are available and coordination occurs between horizontal utility providers and the vertical rebuild in the Central City.

Utilities are an integral part of SCIRT's implementation plan for the city and the Utilities Review Panel in conjunction with CCDU and CCC needs to agree how common laterals and street corridors can be included to service the new developments in the core of the city.

Benefits

- Protecting Assets – In Design and Delivery
- Provide the opportunity to share costs among multiple asset owners
- Facilitates Works Collaboration
- Minimising disruption
- Minimise the double handling of information
- More efficient planning and prioritisation when allocating resources

2. PROJECT OBJECTIVES

- To ensure that SCIRT and Utility operators are able to provide resilient infrastructure for the people of Christchurch by providing a working solution to coordinate services in common trenches or corridors.

- To support the rebuild of businesses and new commercial developments in an efficient and cost effective manner that provides long term sustainability for all stakeholders.

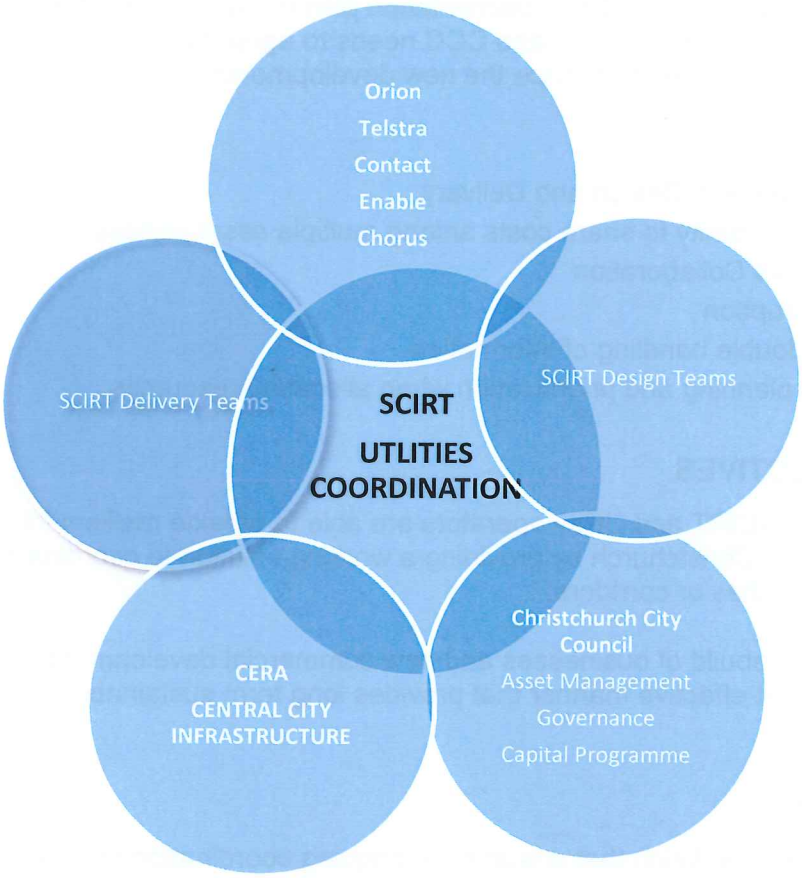
3. PROJECT SCOPE

- Provide a working solution that ensures the ongoing coordination of all utility network operators and the use of common utility laterals and corridors .
- Identify suitable areas throughout the central city that can utilise common corridors including the selection of trial sites which may include Gloucester, Victoria and Hereford Streets
- Negotiate commercial and contractual arrangements for the installation and ongoing operation of the corridor

In terms of timeline, a solution needs to be developed in time for the next stages of the city implementation plan which is scheduled for late 2012.

The ongoing development of a Works Collaboration software platform is not in scope of this project. A Works Collaboration solution is being developed by a separate project that is running in parallel. That Works Collaboration project is being sponsored by LINZ and CERA and managed by the SCIRT Business Services team.

4. PROJECT ORGANISATION



Name	Role	Key Responsibilities
Dave Bain	*Utilities Coordinator*	*Project Management*
Richard Topham	*Central City Coordinator*	*Project Lead Central City Implementation Plan*
Utility Technical Representatives (incl CCC)	*Operations Design and Construction*	*Technical and Design Input*
Utility Strategic Representative	*Commercial and Strategy*	*Strategic and Commercial Negotiations*
CERA Representative AlistairPearson	*Governance*	*Governance and Strategy*
CCC Representative Ross Herrett	*Governance*	*Governance and Strategy*

5. STATUTORY & REGULATORY

- CERA Recovery Strategy
- CERA Act
- NZUAG Code of Practice
- Electricity, Telecommunication and Gas Acts
- SCIRT Cost Sharing and Operating Principles Agreement
- CCC Special Conditions for Corridor Access and Building Consents
- CCC IDS and CSS
- ASNZ Standards for underground gas electrical and telecommunication installations

6. PROJECT SCHEDULE

The Project is broken into three workstreams within the SCIRT CENTRAL CITY INFRASTRUCTURE implementation plan. Workstreams specific to this project are

- Design and Constructability
- Commercial and Strategic Negotiations
- Project Reviews

Baseline Schedule for this project

- 15th June 2012 - Operational meeting to gain each Utilities feedback on Central City. Establish condition of their assets and how their network can be designed into a shared corridor within the City - **Completed**
- 22nd June – Commence drafting of proposal and establish preliminary costings for inclusion in business case to CCDU/CCC and Strategy and Governance representatives from each utility. - **Completed**
- 6 July – Finalise technical specifications, costings and agree Draft proposal - **Completed**
- 16 July – Presentation to CCDU and Strategy and Governance representatives from each utility
- 31 July – CCDU Blueprint released including SCIRT Intergrated Implementatinon Plan
- 1 August 2013 - Commercial agreement commenced between CCDU and Strategy and Governance representatives from each utility – **Delayed to January 2014**
- September – Initiate work to support CCDU Central City Blueprint - Underway

7. PROJECT MANAGEMENT CONTROLS

- This project will fall under the management controls detailed in the SCIRT/CENTRAL CITY INFRASTRUCTURE implementation plan
- SCIRT's Project Centre will be used for filing documents and logging correspondence related to this project

8. PROJECT ASSURANCE

Project Reviews being held on a regular basis with Asset Owners with other assurance measures covered in the SCIRT/ CENTRAL CITY INFRASTRUCTURE Implementation plan

9. COMMUNICATION & STAKEHOLDER MANAGEMENT

In addition to the comms and stakeholder detail in the SCIRT/CENTRAL CITY INFRASTRUCTURE implementation plan, this project will include regular weekly/monthly meetings with key stakeholders that include

- Design and Constructability meetings with technical and operational teams
- Commercial negotiations with strategy and commercial teams
- Project review meetings with Asset owners and Governance team

Name	Business area	Nature of Stake
CERA	CCDU Construction Management Office	Governance - Central City Blueprint
CCC Asset Owners	3 Waters, Roading Strategy and Governance	Funding and Project sponsorship
Utility Asset Owners	Utility Strategy and Governance	Funding and Project sponsorship
SCIRT	Horizontal Infrastrucure Rebuild	Develop coordinated implementation plan for rebuild of horizontal infrastructure in Central City
Utility Operations	Technical feasibility, Operations and Maintainenance	Project development, testing,ongoing operations and maintenance
CCC Maintainence	Technical feasibility, Operations and Maintainenance	Project development, testing ongoing operations and maintenance
CCC Enforcement Team	Buildng Consents and Corridor Access	Governance and Operations
Property Owners and Developers	Central City Investment and property development	Customers and Investors

10. HEALTH, SAFETY & ENVIRONMENTAL MANAGEMENT

SCIRT QSE Management plan applies and the project will be undertaken within the SCIRT risk management and consenting framework. Risk workshops for each stage of the project will identify any specific environmental risk.

11. ISSUES AND OPPORTUNITIES

Issues and Actions	Treatment action	By Who	When
Vacant Lots	CCC Building and Consents team to provide monthly update of consents and permits	**CCC Building Policy and Consents – Ethan Stetson, Patrick Schofield**	**Monthly from 1 July**
Underground Space is constrained for common Corridor	Confirm sites where common access is practical and identify what underground space is available	**SCIRT Design team and Utility Operators**	**Ongoing from 29 June 2012**
Shared Work plans	Utility operator to provide their input and work programs toward developing an intergrated implementation plan for Rebuild of Horizontal infrastrucutre	**SCIRT and Utility Operators**	**Ongoing SDI tool for implementation Early 2014**
Technical Feasability vs Stakeholder expectation	Integrated implementation plan includes details of what can be achieved and any constraints	**SCIRT and Utility Operators**	**31 July 2012**
GIS to include Vertical consents and building permits	Centralised platform for Sharing information	**SCIRT Central City Coordinator Richard Topham**	**29 June 2012**
Early involvement from Developers and property owners	Work with CCC Building Consents team to develop common approach for all utilities and communicate to developers and property owners	**CCC Building Policy and Consents team along with Utilities Review Panel**	**Common approach and communication agreed by 31 July**
Diversified supply points for some customers	Work with developers,property owners and their tenants to identify requirements early	**Telecommunication and Electricity Network operators**	**Work with sites that are known from now**

Opportunities and Actions	Resolution action	By Who	When
Embed Utilities as part of Central City Blueprint	Utilities incorporated in CCDU Blueprint and SCIRT Implementation plan for rebuild of horizontal infrastructure	**SCIRT and Utility Operators**	**Underway**
Enable UFB Rollout	Identify opportunities to share cost of corridor	**Utility Operators**	**31 December 2013**
Crown Fibre Holdings and TCF strategy for Christchurch	CFH and TCF identify opportunities for telecommunication providers joint approach in Christchurch and confirm strategy	**CFH, TCF, CERA**	**31 December 2013**
Sharing Chorus Ducts	Chorus to confirm policy	**Chorus** **Rob Ruiter/Geoff Austin**	**COMPLETED**
Temp road surface	Identify opportuinties for temporary road surface whilst vertical build is completed	**SCIRT** **Utility Operators** **CCC Roading Asset Owners**	**31 July 2012 and ongoing.**
Incorporate reinstatement options as part of Streetscape design	Work with CCC Road Asset Owners and Streetscape Designers to develop options	**SCIRT and Utility Operators**	**29 June 2014**

12. CONTRACTS & PROCUREMENT MANAGEMENT

As detailed in the SCIRT Central City implementation plan

13. FINANCIAL PLAN

Cost breakdown across financial stakeholders - **TBA on confirmation of technical specifications**

14. QUALITY MANAGEMENT

The SCIRT Central City Infrastructure implementation plan,will be followed to ensure this project's deliverables meet quality requirements
Relevant industry quality assurance and quality control actions will be taken over the course of the project to achieve the quality standards.

Relevant industry standards and Christchurch City Council Infrastructure Design Standards/Construction Specification Standards will provide the process for ensuring vendor conformance to project specifications, approved drawings and datasheets

The quality acceptances (external & internal) which must be performed before handing over the project outputs to the operator are **yet to be defined**

15. TESTING AND COMMISSIONING

Plant test and commissioning plans - TBA

Operational handover process - TBA

16. OPERATION / MAINTENANCE

Maintenance and support requirements, agreements and requirements for manuals, drawings, etc - **TBA**

Training programme to be provided for plant operators and maintenance personnel **TBA**